

UNIVERSIDAD AUTONOMA DE NUEVO LEON
FACULTAD DE CIENCIAS BIOLOGICAS
DIVISION DE ESTUDIOS DE POSTGRADO



**ESTUDIO ANATOMICO EPIDERMICO EN LAS HOJAS
DEL GENERO STANHOPEA (ORCHIDACEAE) Y SUS
IMPLICACIONES TAXONOMICAS**

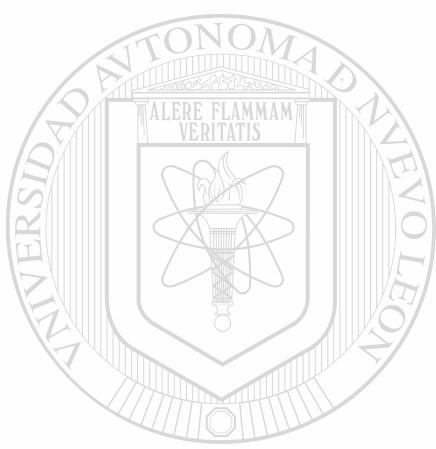
**TESIS
QUE COMO REQUISITO PARCIAL PARA OBTENER
EL GRADO DE
DOCTOR EN CIENCIAS BIOLOGICAS
CON ESPECIALIDAD EN
BOTANICA**

**PRESENTA
ROBERT JEAN FERRY TOWNSEND**

B.G.E, B.S., M.Ed.

MONTERREY, N. L., MEXICO

FEBRERO 1999



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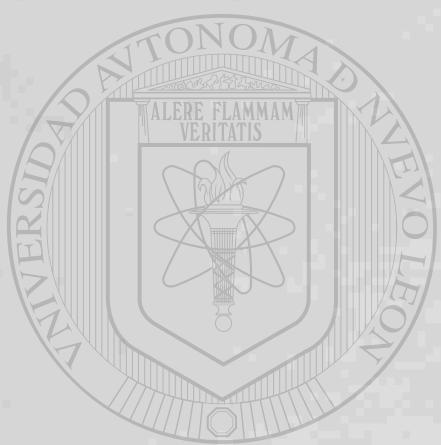
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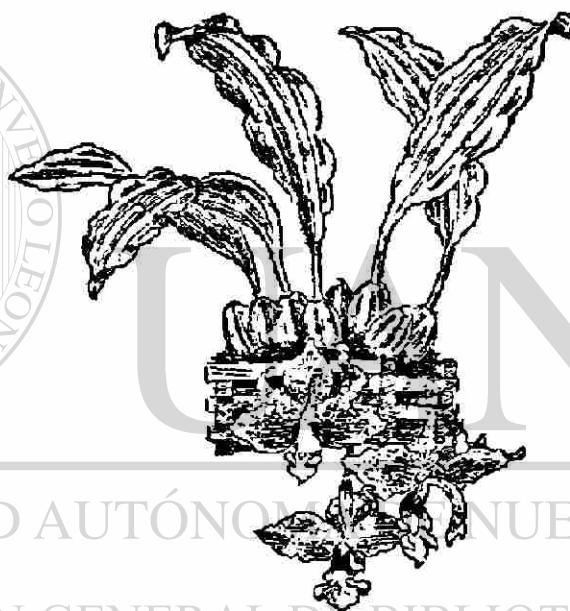
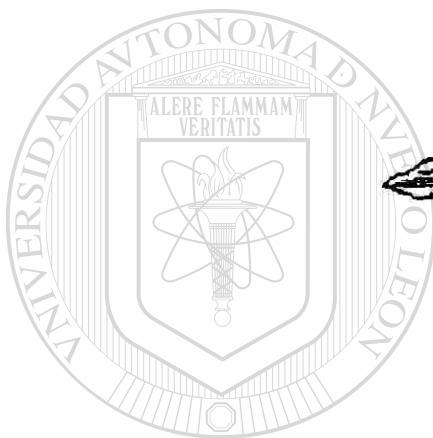


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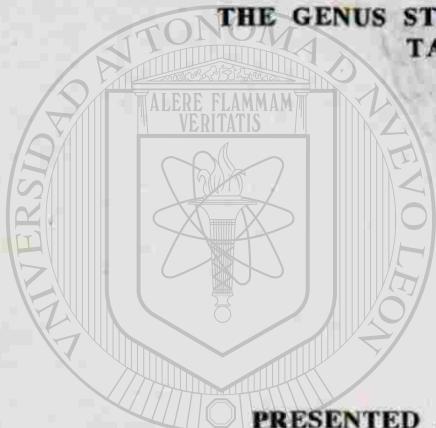
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THE GENUS STANHOPEA (ORCHIDACEAE) AND THEIR
TAXONOMIC IMPLICATIONS**



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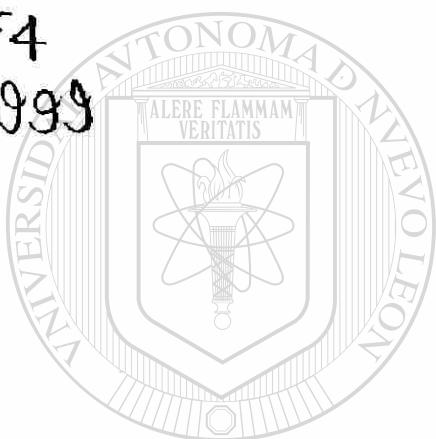
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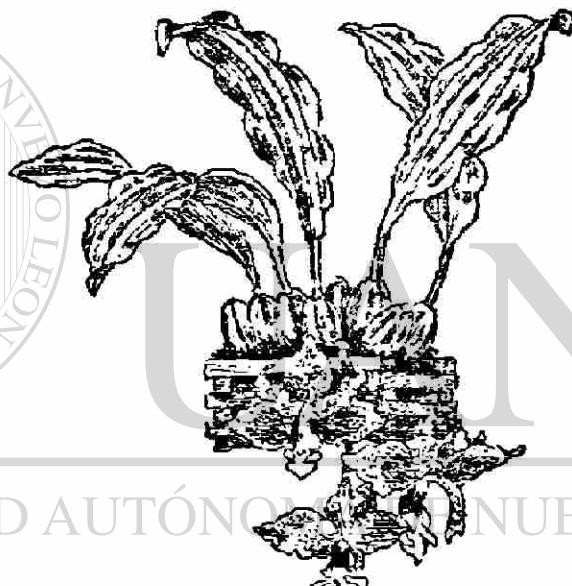
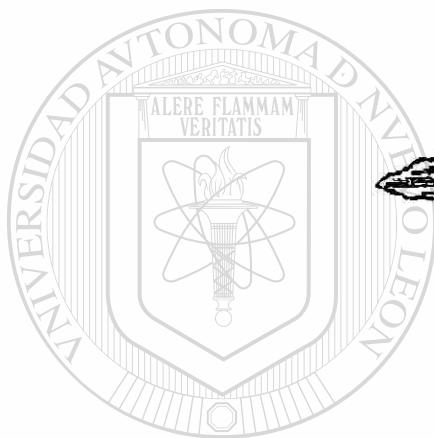
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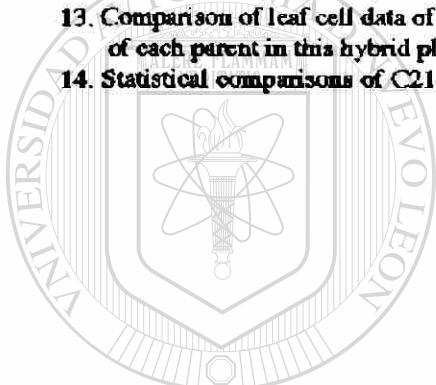
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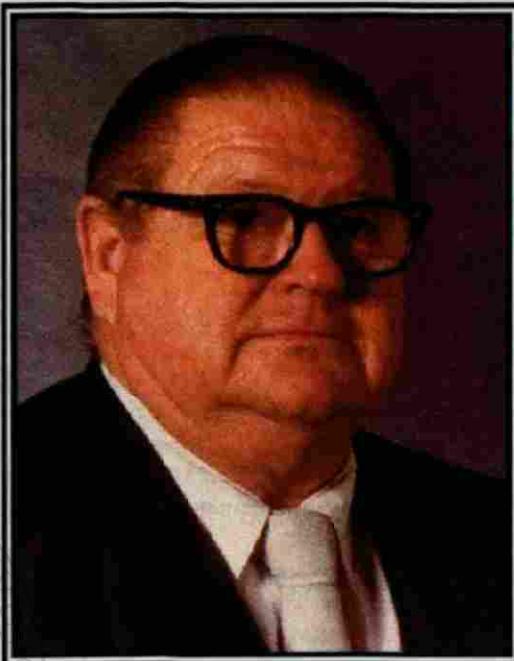
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IN MEMORIAM



George Riley Cagle 1925 - 1997

We were of only slightly different eras,...yet, in many ways the same.
We did not run from a flag....we ran to it.
We did not burn it....we saluted it.

We fought in different killing fields during different epochs;
you on the ground and I also in the air,
but each in the same causes of dedication and freedom,
and on the same side.

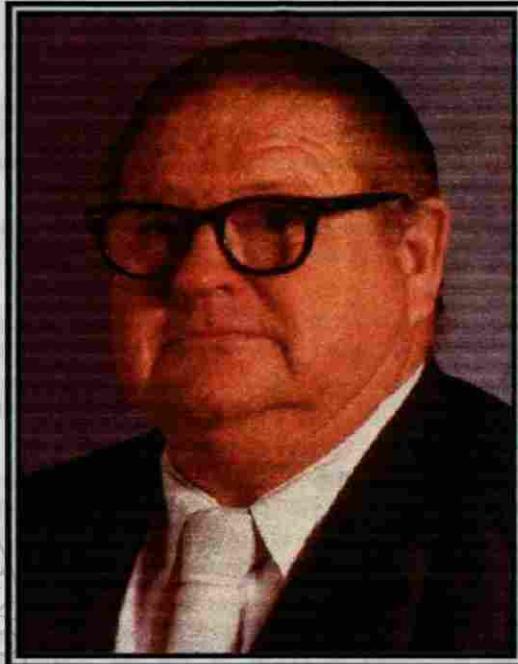
UNIVERSIDAD AUTONOMA DE NUEVO LEÓN

In another place and another time, we shared another war with the same battlefields
as we worked together in blackboard jungles to educate a new generation.
As in other wars at other times, we were always on the same side.

Riley, the temptation is great to make the dedication of this work to you, and—indeed—
without assistance by Wilma and you, I'm not certain how well the work would have progressed.
However, were I in your place and you in mine,
I know that the dedication choice for this work would be no different.

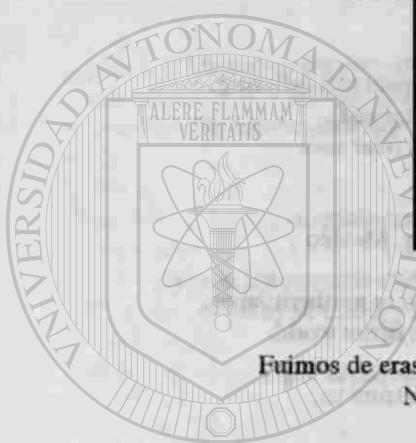
However, at least in advance of that dedication,
for what you have been, and for your part in work that reaches beyond life itself,
Riley
—once again—
I salute you!

IN MEMORIAM



George Riley Cagle 1925 - 1997

Fuimos de eras ligeramente diferentes...pero, en muchas formas las misma.
No huimos de una bandera...corrimos hacia ella.
No la quemamos...la saludamos.



Combatimos en diferentes llanos de matar durante diferentes épocas;

Tú en tierra y yo también en el aire,
pero cada uno en las mismas causas de dedicación a la libertad.
y del mismo lado.

DIRECCIÓN GENERAL DE BIBLIOTECAS

En otro lugar y otro tiempo, compartimos otra guerra en los mismos campos de batalla
conforme trabajamos juntos en pizarrones en la jungla para educar a la nueva generación.
Como en otras guerras en otros tiempos, estuvimos siempre en el mismo lado.

Riley, es grande la tentación de hacer la dedicatoria de este trabajo para ti, y —claro—
sin la asistencia de Wilma y tuya, no estoy seguro de que tan bien habría progresado el trabajo.

Sin embargo, si yo estuviera en tu lugar y tú en el mío,
yo sé que la elección de dedicatoria de este trabajo no sería diferente.

Sin embargo, cuando menos antes de la dedicatoria,
por lo que has sido, y por tu parte en el trabajo que alcanza mas allá de la vida misma,
Riley
—una vez mas—
¡Me cuadro!

DEDICATION

To My Children

Whether by blood, by any legal writings, by the sanctity of our classrooms, or the open door of a home...

...for Enrique, Eric, Margarita Renée, Nora Alicia, Piedad, Rubén, Sandra Evette, and Sylvia Eleanora
each of whom has known classrooms of their own children...

...for Char who counsels and defends
and Tanya, mother of Ariel who liked Little brother Robert's toy train...

...for Frances who cares for individuals
...for Rosa and Rubén who, although studying, make a house more of a home
...for Cheryl, mother of Tyler, and for Travis who coaches,
and Wade who—like his father—run to a flag and not from it.

...for Rani and Robert Jr.
who—together—labor and study through days and years to relieve pain and suffering,...
always that little children's lives be enhanced and prolonged
No man has ever known a more wonderful daughter nor a finer son!

For Meera and beautiful little Aishwarya
and equally beautiful little Zenitia of Huatusco, Veracruz, Mexico
and handsome little Kieran, the youngest of all,...
...and for little children with whom I conversed so many years ago in northern Japan,
and ones in Korea and Southeast Asia who really deserved a better world.

and for little Nancy Estrada Jimenez who, though gone from us,
is not forgotten.

May this work illustrate to each of you that the joy of discovery and learning need not be bounded by age
nor the pursuits and foibles of one phase of a lifetime curse or diminish all effort that follows.

May a love and respect for the prior generation erase and replace condemnation of its members.
After all, you have walked not in this generation's moccasins,
and you are only a step from being the senior generation.

May each of you stand strong with and for each other as brothers and sisters,
yet, in humble admiration and respect of The Almighty,
and always with love of your neighbor as yourself.

Despite all that life has thrown at me, I have loved each of you,
and I always will.
You have been the finest flowers of my life.

In your lives and in the lives of the children who follow you,
may there always be flowers,
and may you live together in peace.

Pop

DEDICACION

A Mis Hijos

Sea por la sangre, por cualquier escrito escribir, santidad de nuestro salón de clase, o la puerta abierta de un hogar...

...para Alfie, Enrique, Margarita René, Nora Alicia, Piedad, Rubén, Sandra Evette, y Sylvia Eleonora
cada uno de quienes ha conocido los salones de clase de sus propios hijos...

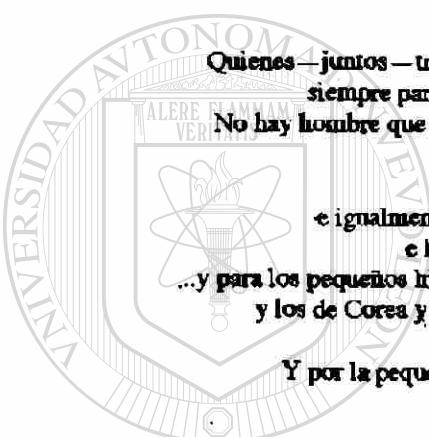
...para Char que aconseja y defiende
y Tanya, madre de Ariel a quien le gustaba el tren de juguete de su pequeño hermano Robert.

...para Frances que cuidaba de los individuos
...para Rosa y Rubén quien, aunque estudiando convierte una casa en un hogar
...para Cheryl, madre de Tyler, y para Travis que asesora,
y Wade quien — como su padre — corrió hacia la bandera y no de ella.

...para Rani y Robert Jr.
Quienes — juntos — trabajan y estudian por días y años aliviar el dolor y el sufrimiento...
siempre para que las vidas de niños pequeños se mejoren y prolonguen
No hay hombre que nunca ha sabido una hija mas portentosamente ni un hijo mas fino!

Para Meera y la pequeña y bella Aishwarya
e igualmente bella y pequeña Zenith de Huatusco, Veracruz, México
e hermoso y pequeño Kieran, el mas joven de todos.
...y para los pequeños hijos con los cuales he conversado hace tantos años en el norte de Japón,
y los de Corea y el Sureste de Asia quienes realmente merecían un mundo mejor.

Y por la pequeña Nancy Estrada Jimenez quien, aunque se alejó de nosotros,
no es olvidada.



Que éste trabajo ilustre a cada uno de ustedes que la alegría del descubrimiento y aprendizaje no necesitan
estar cercados por la edad
ni las búsquedas y debilidades de una fase de la vida atajen o disminuyan todos los esfuerzos que siguen.

Que el amor y el respeto para la generación previa borren y reemplacen la condena de sus miembros.
Después de todo, ustedes no han caminado en los moscas de esta generación,
y ustedes están solo un poco de ser la generación mayor.

Que cada uno de ustedes se levante fuerte con y para cada uno como hermanos y hermanas,
pero en humilde admiración y respectodel Todopoderoso,
y siempre con amor a su vecino como a si mismos.

A pesar de todo lo que la vida ha arrojado sobre mí, he amado a cada uno de ustedes,
Y siempre lo haré.
Ustedes han sido las flores mas finas de mi vida.

...Que en sus vidas y en las vidas de los niños que los siguen,
que siempre haya flores,
y que todos ustedes vivan juntos en paz.

Papi

ACKNOWLEDGMENTS

I have been particularly blessed by having had Drs. María Julia Verde Star and Leticia A. Híuad M. as committee members. Each has been intelligent, beautiful, and each has provided constructive assistance and mentoring with tenderness not often appreciated by males of lesser years. Equally, it has been particularly delightful to receive advice from and share discoveries and opinions with Dr. Mohammed Badii Z. during this work. His observations, common sense, and great humor have been particularly welcome during stressful times. Codirectors Drs. Rahim Foroughbakhch P. and Salvador Contreras B. have been knowledgeable, tactful, and extraordinarily patient with a student who—at times—has exhibited none of those qualities. While I am indebted to each member of this doctoral committee, I am particularly indebted to you two who have had to cope with the heaviest of this student's problems and shortcomings. I thank each of you for your efforts and look with pleasure at the possibilities of working with each and all of you in future research endeavors.

During graduate work I have been especially stimulated by the mentorship of Drs. Ralph Carlson of The University of Texas Pan American, and Verne Grant of The University of Texas at Austin. In orchids, the work of Dr. Carl Withner and contributions of Drs. Calaway Dodson, Robert Dressler, Carlyle Luer, and Govino Rotor, have been particularly insightful. For general orchid knowledge over the years, I am especially indebted to Dr. Benjamin Berliner, Weyman Bussey, Eleanor Frenz, the late Fred Gordon, the late Rodney Wilcox Jones, Bette Jordan, John Lager, Rebecca Northen, the late Richard Peterson, the late Don Richardson, and Noel Schutenberg.

I am grateful for the long and faithful friendship of Guadeloupe Hernández Diaz of La Joya, Texas and Diaz Ordaz, Mexico, and that of Dr. Emilio Olivares Sáenz of Monterrey. Due to your combined influences I was introduced to this university and the many fine individuals in it. I hope my work will prove to be a credit to the university and a compliment to the friendship and faith you have had in me.

I thank Janet Olsen for her work with the initial statistical data entries and their printing.

Special thanks are due Eric Olsen whose computer expertise made possible spreadsheet and linked data capabilities as well as the condensed display of tabular data and all the curves in their various combinations. Without his ingenuity, the computerized display of data would have been a nightmare instead of a joy.

I thank Caroline Heron and Abourahmene Kollo Issoufou for their support during this project, and especially so for their persistence when statistical programs seemed to be particularly perverse. Oscar Mireles Arellano of Brownsville, Texas has patiently assisted during the research and in its write-up as has Jorge Hernández Piñero of Monterrey, Mexico. I am grateful to both of you and I thank each of you.

I thank Will Bates of Corpus Christi, Texas who provided various specimens for this project.

Dr. Douglas Pulley has given many specimens, color transparencies, and constructive comments to an individual known to him only via the telephone and infrequent written correspondence. Without his material, verbal, written, and photographic contributions, this work would have indeed been impoverished.

I thank Julia Clifton and the households of Dr. Clint Doss, Frank Lumsford, the late Harrell Reed, and Kenneth Witcher, all of northern Georgia during a particular epoch. Thanks are also due the Octavio Benavides family, Fr. Robert Delis, Rubén and Helen Leal, Enrique López, Alfredo Villarreal, and Olivia Zardenetta, all of Laredo, Texas during other times. This milestone may well not have been reached without your support and loyalty in different ways, particularly during an epoch when a little boy and a man were harshly tried and so many loyalties were severely tested.

The moral and intellectual support of Drs. Ramí and Robert continues to be an inspiration to me and a spur to perseverance and excellence. Their approval of my undertaking this project, encouragement during its progress, and faith that Pop still had it in him has made the difference so many times and in so many ways. May my work and my life continue to merit their faith and be worthy of their approval and support.

Wilma Jean and the late George Riley Cagle provided the microscope and equipment so necessary to this work. Their generosity as well as their faith in my determination to see it to fruition have been shining beacons during many an hour of research. I was privileged to work with both of them as a colleague and—beyond life itself—they have both been with me as I have worked. Wilma continues to represent a steady influence on a man who is—all too often—impatient. I appreciate her calming and steady influence, and it may be that her diplomatic abilities have been even more appreciated by members of my committee as they have tried to cope with grammar, spelling, and nuances of two languages and—too often—the impatience and tactlessness of this student.

I owe much to many people. To those mentioned above and elsewhere in this work, as well as many others unintentionally omitted, I am deeply appreciative.

AGRADECIMIENTOS

He sido particularmente bendecido al tener como miembros del Comité a las Dras. María Julia Verde Star y Leticia A. Hauad M. Cada una de ellas ha sido inteligente y bella, y me provisto de apoyo constructivo y como mentoras con temura que no siempre es apreciada por los hombres jóvenes. Igualmente, ha sido particularmente delicioso recibir asesoría de, y compartir con Dr. Mohammed Badii Z. durante el presente trabajo. Sus observaciones, sentido común, y gran sentido del humor han sido bienvenidos particularmente durante los períodos tensionantes. Los Codirectores Drs. Rahim Foroughbakheh P. y Salvador Contreras B. han sido conocedores, cuidadosos, y extraordinariamente pacientes con un estudiante que—frecuentemente—no ha exhibido tales cualidades. Mientras que estoy en duda con cada miembro del Comité Doctoral, estoy en deuda particularmente con ustedes dos que han tenido que lidiar con los más pesados de los problemas y deficiencias de este estudiante. Le agradezco a cada uno por sus esfuerzos y me anticipó con gusto a las posibilidades de trabajar con cada uno y todos ustedes en las futuras empresas de investigación.

Durante mi trabajo de postgrado he sido particularmente estimulado por la condición de mentores de los Drs. Ralph Carlson de la Universidad de Texas-Panamericana, y Veme Grant de la Universidad de Texas-Austin. En las orquídeas, el trabajo de Dr. Carl Withner y las contribuciones de los Drs. Calaway Dodson, Robert Dressler, Carlyle Luer, y Govino Rotor han sido particularmente introspectivas. A través de los años, estoy especialmente de deuda por su conocimiento general de las orquídeas, con el Dr. Benjamin Berliner, Weyman Bussey, Eleanor Frenz, el finado Fred Gordon, el finado Rodney Wilcox Jones, Bette Jordan, John Lager, Rebeca Northeen, el finado Richard Peterson, el finado Don Richardson, y Noel Schoenrock.

Estoy agradecido por la amistad de mucho tiempo y fiel de Guadeloupe Hernández Díaz, de La Joya, Texas y Díaz Ordaz, México, y la del Dr. Emilio Olivares Sáenz de Monterrey. Por sus influencias combinadas llegué a conocer esta Universidad y en ella muchos individuos finos. Espero que mi trabajo pruebe ser un crédito para la Universidad y un cumplido a la amistad y la fe que ustedes tuvieron en mí.

Doy las gracias a Janet Olsen para su trabajo con las entradas iniciales de los datos estadísticos y sus imprentas.

Gracias especialmente a Eric Olsen, cuyo experto manejo de la computadora hicieron posible las capacidades de la hoja de cálculo y del enlazamiento de datos tanto como el arreglo condensado de los datos tabulares y de todas las curvas en sus diversas combinaciones. Sin su ingenio, la presentación computanzada de los datos habría sido una pesadilla en lugar de un disfrute.

Agradezco a Caroline Heron y à Abourhamane Kollo Issoufou el apoyo durante el presente proyecto, y especialmente por su persistencia cuando los programas estadísticos parecieron ser particularmente perversos. Oscar Mireles Arellano de Brownsville, Texas pacientemente apoyó durante la investigación y en la escritura tanto como Jorge Hernández Piñero de Monterrey, México. Estoy endeudado con ambos y les doy a cada uno las gracias.

Doy las gracias a Will Bates de Corpus Christi, Texas quién obsequió varias ejemplares para este proyecto.

El Dr. Douglas Pulley obsequió muchos ejemplares, transparencias de color, y comentarios constructivos a un individuo al que conoció sólo por la vía telefónica e infrecuentemente en correspondencia escrita. Sin sus contribuciones verbales, escritas, y fotográficas, este trabajo habría resultado más bien empobrecido.

Doy las gracias a Julia Clifton y las familias del Dr. Clint Doss, Frank Lansford, el finado Harrell Reed, y Kenneth Witcher, todos del norte de Georgia durante una época en particular. Debo las gracias también a la familia de Octavio Beauvides, Fray Robert Delis, Rubén y Helen Leal, Enrique López, Alfredo Villarreal, y Olivia Zandona, todos de Laredo, Texas, durante otros tiempos. La presente piedra milia no habría sido alcanzada sin su apoyo y lealtad en diferentes formas, particularmente durante una época cuando un pequeño niño y un hombre fueron tratados duramente y tantas lealtades fueron sometidas a duras pruebas.

El apoyo moral de los Drs. Rani y Robert continúa siendo una fuente de inspiración para mí y un acicate para la perseverancia y la excelencia. Su aprobación por haber tomado este proyecto, empuje durante mis avances, y la fe en que Papi todavía tiene lo suyo han hecho la diferencia tantas veces y en tantas formas. Ojalá que mi trabajo y mi vida continúen mereciendo su fe y valgan su aprobación y soporte.

Wilma Jean y el finado George Riley Cagle proveyeron el microscopio y el equipo tan necesarios en este trabajo. Su generosidad tanto como su fe en mi determinación para verlo fructificar han sido faros brillantes durante muchas horas de investigación. Tuve el privilegio de trabajar con ambos como un colega y—mas allá de la vida misma—los dos han estado contigo conforme he trabajado. Wilma continua representando una influencia estabilizante, y puede ser que sus habilidades diplomáticas hayan sido apreciadas aún mas por los miembros de mi comité conforme ellos han tratado de lidiar con la gramática, la ortografía, y los matices de dos idiomas y—demasiadas veces—la impaciencia y la falta de tacto de este estudiante.

Debo demasiado a mucha gente. A los que menciono arriba y en otras partes de esta obra, tanto como a otros omitidos inadvertidamente, estoy profundamente agradecido.

ABSTRACT

In general, orchids have been identified mainly by their flowers, and—in the case of *Stanhopea*—species are identified *only* by floral structure differences. For the first time, statistical analyses of a significant proportion of a genus discloses that measurements of 25 epidermal leaf cells per organelle provides mean adaxial and abaxial epidermal cell areas which correlate with specific recognized species permitting the positive or nearly-positive confirmation of the identity of a species in the absence of flowers being present. Additionally, species arranged in a declining order of their adaxial (ca. $5623\mu^2$ - $2673\mu^2$) and abaxial (ca. $3766\mu^2$ - $2020\mu^2$) epidermal cell areas present a hierarchy of primitive-to-advanced floral forms which further correlates with three general geographical groups from South America (Ad: $5623\mu^2$ - $4215\mu^2$; Ab: $3766\mu^2$ - $2790\mu^2$), Central America (Ad: $4173\mu^2$ - $3605\mu^2$; Ab: $2747\mu^2$ - $2648\mu^2$), and Mexico (Ad: $3585\mu^2$ - $2673\mu^2$; Ab: $2608\mu^2$ - $2020\mu^2$), reflecting the evolutionary radiation of the genus. This leafprinting-statistical analysis protocol establishes that species of *Stanhopea* (Orchidaceae) can be objectively identified within reasonable statistical limits without damage to plants. This thesis also establishes that, in *Stanhopea*, large epidermal leaf cells represent the evolutionary primitive condition in equatorial South America, and that these epidermal cells vary in an orderly manner to smaller-celled, evolutionarily more recent, members in Mexico. An ecological, nondestructive method of leafprinting is associated with the novel use of statistical analyses for the identification confirmation of orchid plants when flowers are not present. Additionally, preliminary investigations with other species indicate that these findings apply to other plant genera and families.

1. INTRODUCTION

To investigate and understand the flora of a region, the classical botanical protocol is to collect, press, and dry herbarium samples of the plants of a region, following which they are described, the abundance and diversity of each species assessed, and any new species are described. For a new species to be validly described, classical taxonomy stresses the necessity of selecting, and describing a "Type" from a plant population, filing this dried, pressed Type specimen in a recognized herbarium, and publishing the information in a recognized journal. Following the significance historically placed by Linnacus on floral structures, many orchids have been described from only floral structures; entirely disregarding the plant as possessing any taxonomic significance. In fact, most professionals usually identify their specimens after they have been pressed and dried (Jones and Luchsinger, 1979).

Following the botanical tradition, most new orchid species have been described by foreign botanists residing in localities remote from the plant's native area, with the great majority of these species identifications made by working with dried pressed floral specimens or ones preserved in alcohol or some other fixative material. In the century and a half of modern orchid family taxonomy, literally thousands of plants were collected from New World tropical countries and shipped to greenhouses and taxonomists in Belgium, England, Germany, France, and the United States (Fig. 1). Little was known of habitat and cultural needs, and although many plants survived, surely thousands more were ripped from their habitats and died in transit or in establishments due to improper transporting and ignorance of their cultural requirements.

In the 1960's orchid conservationists in the United States and tropical countries triggered an international ecological awakening which resulted in the 1973 United States Federal Endangered Species Act which was followed by an international treaty designed to

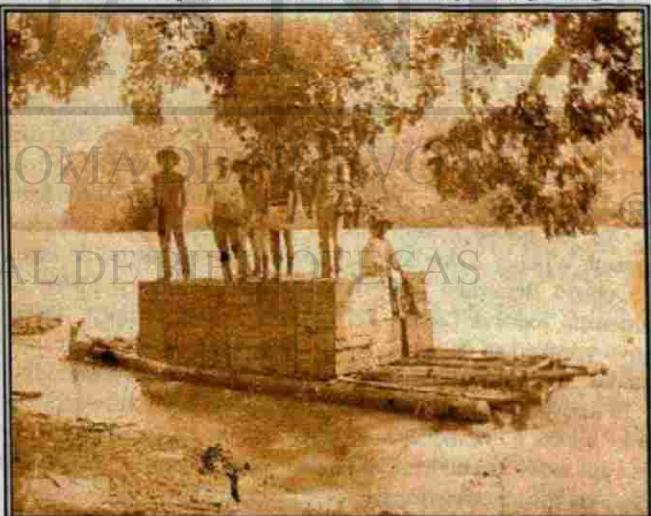


Fig. 1. A raft loaded with the boxes of orchids of a collector. Magdalena River, Colombia. ca. 1880-90. photo: John Lager

RESUMEN:

En general, las orquídeas han sido identificadas principalmente por sus flores, y—en el caso de *Stanhopea*—las especies son identificadas solo por diferencias en las estructuras florales. Por primera vez el análisis de una porción significativa de un género revela que el promedio de las áreas celulares epidérmicas del haz y el envés se correlaciona estadísticamente con especies reconocidas específicamente permitiendo la confirmación positiva o casi positiva de la identidad de una especie en la ausencia de flores. Adicionalmente, las especies enlistadas en un orden decreciente de acuerdo a las áreas celulares epidérmicas del haz y del envés presentan una jerarquía de formas florales de primitiva-a-avanzada la cual se correlaciona mas allá con tres grupos geográficos generales reflejando la radiación evolutiva del género: haz (ca. $5623\mu^2$ to $2673\mu^2$) y envés (ca. $3766\mu^2$ - $2020\mu^2$) las áreas de células epidérmicas presentan una jerarquía de formas florales de primitivas a avanzadas que aun mas se correlacionan con tres grupos geográficos generales de Sur América (H: $5623\mu^2$ - $4215\mu^2$; E: $3766\mu^2$ - $2790\mu^2$), América Central (H: $4173\mu^2$ - $3605\mu^2$; E: $2747\mu^2$ - $2648\mu^2$), y México (H: $3585\mu^2$ - $2673\mu^2$; E: $2608\mu^2$ - $2020\mu^2$), reflejando la radiación evolutiva del género. Un método de impronta foliar no-invasivo, ecológico es combinado con este uso novedoso del análisis estadístico para la identificación de orquídeas. Esta tesis también establece que en *Stanhopea*, las células epidérmicas grandes de la hoja representan la condición evolutiva primitiva en Sudamérica ecuatorial, las cuales varían en una manera ordenada hasta llegar a un menor tamaño en miembros mas evolutivamente avanzados en México. Un novedoso uso de análisis estadístico para la confirmación de identificación de plantas de orquídeas cuando las flores no están presentes se asocia con un método ecológico y no destructivo de impresión de la hoja. Adicionalmente, los resultados preliminares en otras especies indican la aplicabilidad de estos hallazgos a otros géneros y familias de plantas.

1. INTRODUCCION

Para investigar y conocer la flora de una región el método botánico clásico que se sigue teóricamente consiste en recolectar y prensar muestras de herbario de todas las plantas de la región, describirlas, y valorar la abundancia y diversidad de cada especie. Para que una nueva especie sea descrita válidamente la taxonomía clásica insiste en la necesidad de seleccionar y describir un ejemplar "Tipo" tomado de una población de la especie, archivándola en forma seca y prensada en un herbario reconocido y publicando la información en alguna revista de prestigio. De acuerdo con el significado histórico establecido por Linneo sobre las estructuras florales, muchas orquídeas han sido descritas solamente a partir de estas estructuras, descartando totalmente al resto de la planta sin darle algún significado taxonómico y, de hecho, la mayoría de los profesionales generalmente identifican sus ejemplares después de que éstos han sido prensados y secados (Jones y Luchsinger, 1979).

Así, la mayoría de las nuevas especies de orquídeas han sido descritas por botánicos extranjeros que residen en localidades remotas del área nativa de la planta a partir de ejemplares florales prensados o preservados en alcohol o algún otro material fijador. Hace siglo y medio que la taxonomía moderna de la familia de las orquídeas, ha visto literalmente miles de plantas que han sido recolectadas de los países tropicales del Nuevo Mundo y embarcadas a invernaderos y taxónomos de Bélgica, Inglaterra, Alemania, Francia y los Estados Unidos (Fig. 1). Muy poco se conocía de las necesidades de cultivo y hábitat y aunque muchas plantas sobrevivieron, seguramente miles mas fueron arrancadas de sus hábitats y murieron en tránsito o en establecimientos debido a un transporte impropio y a la ignorancia de sus requerimientos de cultivo.

En la década de los sesentas los conservacionistas de los Estados Unidos y de los países tropicales despertaron la sensibilidad ecológica a nivel internacional, lo cual resultó en el Decreto de Especies Amenazadas de los Estados Unidos en 1973, la cual fue seguida por un tratado internacional diseñado para

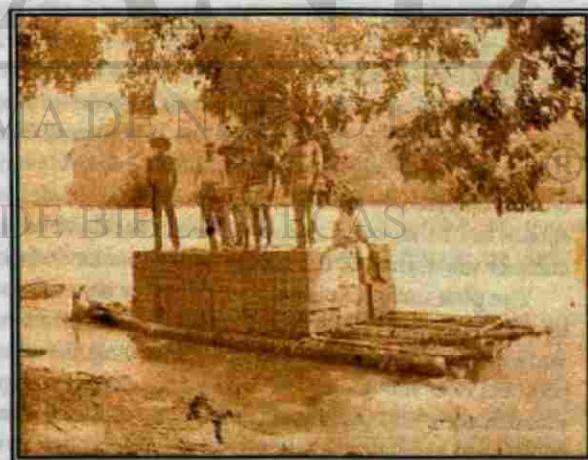


Fig. 1. Una balsa con las cajas de orquídeas de un colector. Río Magdalena, Colombia. ca. 1880-90 foto: John Lager

del Nuevo Mundo y embarcadas a invernaderos y taxónomos de Bélgica, Inglaterra, Alemania, Francia y los Estados Unidos (Fig. 1). Muy poco se conocía de las necesidades de cultivo y hábitat y aunque muchas plantas sobrevivieron, seguramente miles mas fueron arrancadas de sus hábitats y murieron en tránsito o en establecimientos debido a un transporte impropio y a la ignorancia de sus requerimientos de cultivo.

En la década de los sesentas los conservacionistas de los Estados Unidos y de los países tropicales despertaron la sensibilidad ecológica a nivel internacional, lo cual resultó en el Decreto de Especies Amenazadas de los Estados Unidos en 1973, la cual fue seguida por un tratado internacional diseñado para

conserve endangered species. However, despite entreaties from knowledgeable archivists, the act and subsequent international treaty put the entire orchid family on an "endangered" list prohibiting the movement or export of any orchid from its native habitat. The result of this "simple solution" was that as wholesale logging operations or land clearing due to human population pressures continued, plants could not be moved, and thousands more died. In recent years, although the international laws and regulations have been modified slightly, local laws and regulations against the collection and removal of orchids have proliferated and problems remain for the collection and movement of orchid plants.

The present situation is multifaceted. Orchid conservation requires species identification, the techniques of which must not conflict with existing laws and regulations. Also, identifications based only on floral characteristics require finding these relatively scarce plants when in flower, with taxonomic decisions based only on the flower inadequate in that the flower is only an organ of the plant, when a *population of plants*, actually constitutes a species. Finally, merely *describing* a species remains little more than the subjective opinion of what the particular observer brings in the way of knowledge to the taxonomic arena with their validity depending on the eye of the observer, the individual's ability in expressing concepts, and even the individual's personal botanical prestige.

2. JUSTIFICATION

This investigation radically departs from subjective, descriptive, flower-oriented taxonomy by focusing on measuring and statistically analyzing vegetative material. Data from species confirmed by flowering are subjected to an analysis of variance to establish the ranges species differ from one another. Known specimens are statistically compared with unknowns. Given statistically-based vegetative differences between species and a corresponding data base of a sufficient number of the confirmed species of a genus, an unknown sample may be compared with samples from specimens already described and the species identity of the unknown predicted without the taxonomist having to observe the plant when it is in flower.

As this investigation departs from the traditionally descriptive approach to plant identifications in favor of statistically derived conclusions, the historical botanical literature is overwhelmingly silent. To Linnaeus, a botanist was simply a person "qui nominibus noscit nominare," who can give the right names. The more species he knew, the greater he was as a botanist (Linnaeus, 1735, 1737). This protocol takes the viewpoint that descriptive work in science should be validated with the impersonality and impartiality of statistical methodology insofar as is possible, while realizing that neither descriptive nor objective science alone will provide the best answer in all cases.

The statistically derived data of this vegetative study has been gauged against species which have been defined descriptively by their flowers. That parallels exist between these independent, statistically-derived conclusions and the observations of descriptively oriented taxonomists is a tribute to the evolutionary criteria laboriously arrived at by generations of descriptively oriented workers. Therefore, this protocol should not be regarded as a replacement for floral analyses, but as an additional, statistically-based tool to enhance the ability of the taxonomist to make decisions concerning species and species relationships.

The plan includes obtaining vegetative data without damaging the plant or requiring any part of it to be removed from the habitat. This avoids conflict with national and international laws and treaties and allows data to be obtained while permitting the plant to proliferate in its natural habitat. While this protocol does not address the collecting, drying, and pressing of plant material required for formal species identification and publication according to the botanical code, it does present data which may provide significant vegetative evidence for the differentiation of new species from already-established ones.

conservar a las especies amenazadas o en peligro de extinción. Sin embargo, a pesar de las advertencias de los orquideólogos conocedores, el decreto y los tratados internacionales subsiguientes pusieron a toda la familia de las orquídeas en una lista de especies amenazadas, prohibiendo así el movimiento y la exportación de cualquier orquídea de su hábitat natural. El resultado de esta "solución simple" fue que a medida que las operaciones de tala de la tierra continuaron debido a las presiones de la población humana, muchas plantas no pudieron ser rescatadas y miles otras murieron. En años recientes, aunque las leyes y regulaciones internacionales han sido ligeramente modificadas, las leyes y reglamentos locales en contra de la recolección y saqueo de orquídeas han proliferado y los problemas continúan para la recolección y transporte de plantas de orquídeas.

La situación presente es multifacética. La conservación de las orquídeas requiere de la definición e identificación de especies cuyas técnicas no deben estar en conflicto con las leyes y regulaciones actuales. Además, la identificación basada en las características florales requiere tener que encontrar a estas plantas cuando estén en floración, lo cual es poco frecuente, con decisiones taxonómicas basadas solamente en la flor, siendo que ésta no es más que un órgano de la planta, cuando una *población de plantas* es lo que realmente constituye una especie. Finalmente, describir meramente una especie sigue siendo poco más que una opinión subjetiva de lo que el observador en particular trae consigo en el camino al conocimiento a la arena taxonómica con su valididad dependiente en el ojo del observador, la potencia del individual para expresar conceptos, y, claro, el prestigio botánico personal del individual.

2 JUSTIFICACION

Con la finalidad de dirigir constructivamente los problemas de identificación de especies, esta investigación se basa enfáticamente en la medición y el análisis estadístico de material vegetativo. Los datos obtenidos de especies confirmadas por floración fueron sometidas a un análisis de varianza para establecer rangos en que las especies difieren unas de otras. Especies conocidas son comparadas con especies desconocidas. Dadas las diferencias estadísticamente significativas entre especies, y una base de datos con un número suficiente de especies confirmadas de un género dado, se pueden hacer predicciones de identificación de ejemplares desconocidos en lugar de que el taxónomo tenga que observar a la planta durante su extremadamente breve período de floración.

Debido a que esta investigación se aparta de los métodos tradicionales y descriptivos de identificación de plantas a favor de conclusiones derivadas estadísticamente, la literatura es sorprendentemente ausente. Las clásicas descripciones botánicas son opiniones subjetivas las cuales dependen del ojo del observador, de las habilidades individuales para expresar conceptos, y aún en el prestigio personal para su validez. Linneo pensaba que un botánico era simplemente una persona "qui nominibus noscit nominare" que puede proveer los nombres apropiados. A medida que conocía mas especies mejor era como botánico (Linneo 1735, 1737). Este protocolo toma el punto de vista de que el trabajo de la Ciencia no debe ser puramente un asunto de opinión descriptiva. Este protocolo toma el punto de vista de que el trabajo descriptivo en ciencia debe ser validado con la impersonalidad e imparcialidad del método científico en la medida en que sea posible, teniendo en cuenta que ni la ciencia descriptiva ni la objetiva por sí solas proveerán las mejores respuestas en todos los casos.

Los datos derivados estadísticamente de este estudio vegetativo han sido comparados y probados contra especies que han sido tradicionalmente definidas descriptivamente por sus flores. El que exista un paralelismo entre estas conclusiones independientes y estadísticamente derivadas con las observaciones de taxónomos formados descriptivamente es un tributo al criterio evolutivo al que laboriosamente han llegado generaciones de investigadores orientados descriptivamente. Este protocolo no debe ser visto como un reemplazo de los análisis florales sino como una herramienta adicional basada en la estadística para que el taxónomo pueda tomar decisiones considerando aspectos tanto florales como vegetativos.

El plan incluye obtener datos de las partes vegetativas sin tener que dañar a la planta ni requerir que alguna parte de ella sea sacada de su hábitat. Esto evita conflictos con las leyes y tratados nacionales e internacionales, y permite la obtención de datos y que la planta prolifere en su hábitat natural. Mientras que este protocolo no requiere de la recolección, disecado y prensado del material botánico requerido para una identificación de especie de tipo formal y su publicación, esta investigación presenta datos que pueden proveer evidencia vegetativa importante en la identificación de nuevas especies a partir de aquellas ya establecidas.

In sum, while addressing specific taxonomic problems associated with species identification and conservation, simplicity and economy are also stressed.

3. ANTECEDENTS

3.1. IDENTIFICATION AND DEFINITION OF SPECIES

In a study where a major concern is the identification of plants at the species level, a brief review of the concept of "species" is useful to an understanding of the work of the study, problems encountered, and their effect on eventual conclusions. Three major species concepts have received much attention in recent years: the biological, the ecological, and the evolutionary.

Dobzhansky (1935) defines the biological species concept as a group of individuals fully fertile *inter se*, but barred from interbreeding with other similar groups by its physiological properties, and Mayr (1942) sees it as a group of actually or potentially interbreeding populations reproductively isolated from other such groups. No allopatric species (occupying areas separated by time and place; speciation in geographical isolation) can be involved because they normally do not have the opportunity to meet similar species. The ecological concept is that a species is a lineage (or a closely related set of lineages) that occupies an adaptive zone minimally different from any other lineage in its range and which evolves separately from all other lineages outside its range (Van Valen, 1976). Smith (1977) observes that the Dobzhansky and Mayr biological concepts limit the definition to only bisexual organisms, and also limit the biological species concept to sympatric species (that occupy the same area at same time). The evolutionary concept of Wiley (1978) limits the species concept to "a single ancestral-descendent lineage that maintains its identity from other lineages and has its own evolutionary tendencies and historical fate," which, in the opinion of Dressler (1993), "seems unassimilable as a concept, but contributes little in the way of concrete criteria for delimiting species." In principle, however, the evolutionary concept gives rise to the branching patterns of cladistics as species mutate and veer away from the ancestral-descendent line.

Of the three concepts, a modification of the classic biological species concept which includes asexual reproduction is common in botany, although many historic orchid species descriptions appear to rely heavily on simple morphology. A morphological species may look different from its congeners, but, as Futuyma (1998) notes, "some taxonomists use the biological concept to define their taxonomic species, but rely on morphological differences to define species, without explicitly considering whether or not the morphological differences provide evidence for reproductive isolation."

Fowlie (1970) sums up the biological species concept simply as "a naturally occurring population of interbreeding organisms isolated in nature by one or more mechanisms." This definition fits the basic members of this study (*Govenia*, *Spiranthes*, and *Stanhopea*) as well as a casual sampling from the genus *Anthurium*. Ferry (1985, unpublished) noted the possibility of cleistogamous reproduction in an investigation of *Spiranthes parkii* Correll, but identification aspects of this study are not diminished by this variance in reproductive strategy. Indeed, Darwin (1859) in the first chapter of his now-classic work states clearly:

"Some naturalists have maintained that all variations are connected with the act of sexual reproduction; but this is certainly an error; for I have given in another work a long list of 'sporting plants' as they are called by gardeners; —that is, of plants which have suddenly produced a single bud with a new and sometimes widely different character from that of other buds on the same plant."

Identification problems with study members have not resulted from the species definitions as outlined, but rather from departures from these definitions by historical and contemporary botanists and others who have contributed to the literature. Most have contributed in highly constructive ways. Others, sadly, have been purveyors of misinformation, much of it based on a lack of scholarship, but some of it with roots in the desire for purely personal commercial reasons. Arditi (1992) succinctly summed up much of the background for identification problems encountered in the course of this study:

Finalmente, además de dirigirse a problemas taxonómicos asociados con la preservación de la especie se insiste en la simplicidad y la economía del método.

3. ANTECEDENTES

3.1. IDENTIFICACION Y DEFINICION DE ESPECIES

En un estudio donde el mayor interés es la identificación de plantas a nivel de especie, una breve descripción del concepto de "especie" es útil para un entendimiento del trabajo (problemas enfrentados y su efecto sobre las conclusiones). En los años recientes, tres conceptos principales de ordenar una especie han recibido mayor atención: biológico, ecológico, y evolutivo.

Dobzhansky (1935) define el concepto biológico de especie como un grupo de individuos plenamente fértiles *inter se*, pero impedidos de cruzarse con grupos similares debido a sus propiedades fisiológicas, y Mayr (1942) lo define como un grupo de poblaciones potencialmente capaces de hibridizarse y desde el punto de vista de reproducción, aislados de otros grupos similares. Ninguna de las especies alopácticas (ocupan áreas separadas por tiempo y lugar; especificación en aislamiento geográfico) pueden ser involucradas porque ellas normalmente no tienen la oportunidad de encontrarse con especies similares. El concepto ecológico considera que una especie es una descendencia (o un grupo de descendientes cercanamente relacionados) que ocupa una zona adaptable mínimamente diferente de cualquier otro linaje en su rango y el cual evoluciona separadamente de todos los otros linajes fuera de su rango (Van Valen, 1976). Smith (1977) observó que los conceptos biológicos de Dobzhansky y Mayr limitan la definición a organismos bisexuales,

y también limitan el concepto de especie biológica a especies simpácticas (que ocupan la misma área al mismo tiempo). El concepto evolutivo de Wiley (1978) limita el término de especie a "un linaje único de descendencia ancestral que mantiene su identidad diferente de otros linajes y tiene sus propias tendencias evolutivas y destino histórico," el cual, en la opinión de Dressler (1993), "como concepto parece inexpugnable, pero contribuye poco en la forma de criterio concreto para delimitar especies." Sin embargo, el concepto evolutivo en principio da lugar a los modelos de ramificación cladística conforme las especies mutan y se alejan de la línea de descendencia ancestral.

De los tres conceptos, una modificación del concepto clásico de especie biológica que incluye reproducción asexual es común en botánica, aunque muchas descripciones históricas de especies de orquídeas parecen confiar básicamente en simple morfología. Una especie morfológica puede parecer diferente de sus congéneres, pero, según las notas de Futuyma (1998), "algunos taxónomos usan el concepto biológico para definir sus especies taxonómicas, pero se basan en diferencias morfológicas para definir especies, sin considerar explícitamente si las diferencias morfológicas proporcionan evidencias para un aislamiento reproductivo o no."

Fowle (1970) resumió el concepto de especie biológica simplemente como "una población encontrada naturalmente, con organismos capaces de entrecruzarse, aislada en la naturaleza por uno o mas mecanismos." Esta definición se ajusta a los miembros básicos de este estudio. (*Govenia*, *Spiranthes*, y *Stanhopea*) así como a un muestreo casual del género *Anthurium*. Ferry (1985, inédito) observó la posibilidad de reproducción cleistogámica en una investigación de *Spiranthes parkii* Correll, pero los aspectos de identificación de este estudio no se disminuyen por ésta variación en estrategia reproductiva. De hecho, Darwin (1859) en el primer capítulo de su ahora clásico trabajo establece claramente:

"Algunos naturalistas han sostenido que todas las variaciones están conectadas con el acto de la reproducción sexual; pero esto es ciertamente un error, porque yo he dado en otro trabajo una larga lista de 'plantas con variación espontánea' tal como son llamadas por los jardineros, —eso es, plantas de las cuales repentinamente han producido un solo brote con un carácter nuevo y algunas veces completamente diferente de aquellos otros brotes en la misma planta."

Los problemas de identificación con miembros de este estudio no han resultado de las definiciones de especie como se ha descrito, sino más bien de desviaciones de esas definiciones por parte de botánicos históricos y contemporáneos y otros quienes han contribuido a la literatura. La mayoría ha contribuido en formas altamente constructivas. Otros, tristemente, han sido proveedores de información errónea basada en la falta de conocimiento, pero una parte originada en razones comerciales puramente personales. Arditti (1992) resumió brevemente la mayoría de los antecedentes de los problemas de identificación encontrados en el curso de este estudio:

"Only the most astute systematists can hope to bring order into the Orchidaceae, and, indeed, several excellent taxonomists have done just that over the past 150 years. Unfortunately, however, persons with limited or no qualifications have also dabbled in orchid classification. This and legitimate differences of opinion among qualified taxonomists have made orchid systematics a baffling subject for amateurs, commercial growers, and even some scientists."

Finally, the coevolution of flowers and insects is recognized by taxonomic authorities and biology text writers alike (Margulies and Swartz, 1988; BSCS, 1987; Campbell, 1990). Thus, in any discussion of angiosperm taxonomy, reference to pollinating vectors is in order. However, despite the great taxonomic significance of the flower in species identification, the flower is but a reproductive organ of the plant. A population of plants constitutes a species, not merely the flower of a plant. Therefore, this study investigates characteristics of a plant part: the leaf—the evolutionary ancestor of the flower—for ways to economically and reasonably differentiate one plant species from another means that are by objective, statistically validated, not merely arrived at by a description of part or another of the plant.

3.2. SELECTION OF THE GENUS STANHOPEA

Precise knowledge of the characteristics of the species permits the option of applying those faculties of recognition to the design of rapid and efficacious methods of significant characteristics. The identification of a new plant species, like that of most life forms, depends greatly on an individual delineating those characteristics which differentiate it from already-known forms. In addition, coupling an unidentified species with an already-established one entails correlating certain specific characteristics with ones typical of the already-established form. For many of the flowering plants, particularly members of the orchid family, species-identification rests on describing differing floral characteristics. It has been observed that the taxonomy of *Stanhopea* has been based only on floral characters, with only a note about vegetative structures (Arnold 1928; Dodson and Frymire 1961; Dodson 1962, 1963, 1975a, 1975b). In the case of *Stanhopea*, Cury et al. (1988) aver that the taxonomy rests exclusively on the morphology of the flower changes which have apparently been influenced by the pollinators. This system of classification of the genus certainly has merit, but problems arise when the boundary lines of floral characters between close-species are relatively indistinct or when no flowers are present. Therefore, a system capable of reasonably and objectively correlating an unidentified sample with an already-described species by the use of other-than-floral characteristics without resorting to floral taxonomy would provide an identification tool useful at any time and any place without regard to flowering period restrictions.

The genus *Stanhopea* was selected for this study due to certain attributes which make it a more rigorous test vehicle than might be encountered via other orchid genera. First, flowers of this genus are fugacious, usually not lasting longer than two or three days, and vegetatively, species of this genus display so few gross morphological differences that much of the literature only describes this aspect as "typical for the genus." Thus, if identifications are to be made using present methods, they must thus be done when the plant is flowering in its habitat or the plant must be removed to a location more convenient to the botanist (usually a greenhouse) for observation when it does flower. Second, because the genus *Stanhopea* is longitudinally widespread throughout the neotropical and tropical latitudes of the Western hemisphere, it was hypothesized that an other-than-flower identification system might provide clues concerning intra-species relationships and the evolutionary radiation pattern of the genus. In addition, an identification protocol that does no damage to plants in the field, requires no material to be taken from the habitat, is inherently economical and simple to do, and is statistically based rather than subjectively, would be acceptable at any government level.

It may superficially appear that it should be relatively simple task to collect a plant division, care for it in a greenhouse, and then identify it when it flowers. However, aside from the legal and regulatory problems attendant with the collection of plant material, the new habitat may not be conducive to its natural flowering habit due to light, humidity, temperature, and other combinations of variables. Richard Felger (pers. comm. 1997), who found *S. maculata* in 1953 at

"Solo el mas astuto de los taxónomos puede tener la esperanza de poner orden en la familia Orchidaceae, y en verdad, algunos excelentes taxónomos han hecho solo eso en los pasados 150 años. Sin embargo, desafortunadamente, personas con limitada capacidad o sin ella se han entrometido también en la clasificación de las orquídeas. Esto y legítimas diferencias de opinión han hecho de la sistemática de las orquídeas un tema de confusión para los aficionados, productores comerciales y aún a algunos científicos."

Finalmente, la coevolución de flores e insectos es reconocida por autoridades taxonómicas y escritores de textos de biología (Margulis y Swartz, 1988; BSCS, 1987; Campbell, 1990). Sin embargo, a pesar de la gran importancia taxonómica de la flor en identificación de especies, la flor es solo un órgano reproductivo de la planta. La planta constituye la especie; no solamente la flor. Por consiguiente, en este estudio se investigan características de una parte de la planta: la hoja—el análogo evolutivo de la flor—mediante formas de diferenciar a bajo costo y razonablemente una especie de planta por otros medios objetivos, válidos estadísticamente, no solo por la descripción subjetiva de una parte u otra de la planta.

3.2. SELECCION DEL GENERO STANHOPEA

El conocimiento preciso de las características de las especies permite la opción de aplicar aquellas facultades de reconocimiento para el diseño de métodos de identificación rápidos y eficaces, disponibles la mayor parte del tiempo. La identificación de una nueva especie de planta, así como de la mayoría de las formas de vida depende grandemente de la delineación individual de ciertas características, las cuales las diferencian de las formas ya conocidas. Para muchas de las plantas fanerógamas, particularmente miembros de la familia de las orquídeas, la identificación se basa en describir las diferencias florales. Se ha observado que la taxonomía de *Stanhopea* ha sido fundada solamente en características florales, con sólo una nota sobre las estructuras vegetales (Arnold 1928, Dodson and Trymire 1961; Dodson 1962, 1963, 1975a, 1975b). En el caso de *Stanhopea*, Curry et al (1988) afirman que la taxonomía se basa exclusivamente en los cambios de la morfología de la flor, los cuales aparentemente han sido influenciados por los polinizadores. Este sistema de clasificación del género ciertamente tiene su mérito, pero los problemas permanecen cuando las líneas fronterizas de las características florales de especies intimamente relacionadas son relativamente indistintas. Además, la identificación floral de estas especies en el campo se hace todavía más difícil debido a que la mayor parte del año no están en floración. Por lo tanto, un sistema capaz de equiparar razonable y objetivamente una muestra no identificada con una especie ya descrita mediante el uso de otras características diferentes a las florales una herramienta de identificación útil a cualquier tiempo y lugar sin estar sujetitados a las restricciones de los períodos de floración.

El género *Stanhopea* fue seleccionado para esta investigación debido a ciertos atributos que la hacen un vehículo de prueba riguroso que difícilmente pueda encontrarse en otros géneros de orquídeas. Primero, las flores de este género son fugaces, no duran más de 2 a 3 días y la taxonomía de este género ha estado basada principalmente en algunas pocas características florales. Segundo, debido a que el género *Stanhopea* está ampliamente distribuido longitudinalmente a través de las áreas tropicales y neotropicales del Hemisferio Occidental, se ha hipotetizado que un sistema de identificación diferente al de identificación por la flor debe proveer pistas concernientes a las relaciones intraespecíficas y a los patrones de radiación evolutiva de las mismas. Tercero, un protocolo de identificación que no dañe a la planta en el campo, que no requiera que el material sea sacado de su hábitat, que sea inherentemente económico y fácil de hacer y que esté apoyado en inferencias estadísticas y no subjetivamente debería ser aceptado por cualquier nivel de gobierno.

Si se va a hacer una identificación, entonces ésta debe realizarse cuando la planta esté floreciendo en el hábitat o la planta debe ser removida y transportada a un lugar más conveniente para el botánico (usualmente un invernadero) para realizar las observaciones cuando la planta florece. Una dificultad con la identificación de ejemplares en invernaderos es que éste nuevo hábitat puede que no induzca la floración natural en la planta debido a la humedad, temperatura y alguna otra combinación de variables. Richard Felger (comunicación personal, 1997) quien encontró a *S. maculosa* en 1953 en

its northernmost known site in Mexico, has noted a continued inability to flower it in southern Arizona. Kennedy (1974) says he had grown the same clonal material for 21 years prior to its presenting him with a flower in 1974. However, what Kennedy does *not* say is that an equipment failure had resulted in his greenhouse temperatures dipping dangerously close to freezing levels a few weeks before flowering. Fortunately this author was an excellent photographer, and the color photograph of *S. maculosa* he took in 1974 remains the only good color representation of this species in 1998; 45 years after the clonal material was found by Felger in northern Mexico (Fig. 2). The *S. maculosa* data of this study are from leafprints of that original clonal material, mailed to Ferry by Mark Dimmitt of Phoenix, Arizona.

3.3. HISTORIC PERSPECTIVES OF STANHOPEA

The genus *Stanhopea* was named in honor of Sir Philip Henry, the 4th Earl of Stanhope (1791-1855), president of the London Medico-Botanical Society from 1829-1837. According to Hawkes (1961, 1965) *Stanhopea* is a genus of "approximately 8 to 25 or more species." In a later publication, Hamer (1974) estimates this as a genus of "about 20 species, but these estimates were obviously very conservative, and since that date, several additional species have been described. In a more recent publication, Arditti (1992) estimates "approximately 50 species", and Dressler (1993) gives 55 as the number of species for this genus while Bechtel, et al. (1992) restate the estimate of "about 25 species." This study tentatively coincides with Dressler and recognizes 55 species, four natural hybrids, and several man-made hybrids.

Orchid fanciers have attempted relatively few hybrids with members of this genus. In a family primarily known for its flowers with horticultural marketability (the genus *Vanilla*, the orchid of commerce, being an exception) *Stanhopea* has been largely unused due to the relatively short life of its flowers. Thus the genus has been neglected by the commercial floral trade and relatively ignored by the amateur hybridists who tend to follow the demands of that enterprise. Curtis (1910) cites *Stanhopea* flowers as large and very attractive, mentioning that "they are short-lived and cannot be used in floral decorations, hence cannot be considered first-class." This last author mentions *S. eburnea*, ivory white; *S. insignis*, yellow and purple; *S. Lowii* (sic), yellow and white; *S. tigrina* (the best), red, yellow and white, very brilliant; and *S. wardii* golden yellow and purple as the best plants to cultivate. Thus, although the range of this genus encompasses the major portion of new World occupied by orchids, plants of this genus have thus been relegated to the domain of serious orchid aficionados and the occasional study by professional botanists who are orchid family specialists.

Trying to clarify taxonomic relationships, Cooper (1931) noted, "it is seldom that really accurate data can be obtained as to the precise habitat of orchids, and *Stanhopeas*, particularly the section which includes *guttulata*, *oculata*, *peruviana*, *wardii*, *insignis*, etc., are very confusing." He observes that color is hardly a determinate character and that sizes may often be affected by differences in locality. He concludes that "the flimsy nature of the sepals and petals and the fleshy wax-like consistency of the labellums make comparison by dried flowers difficult, and that, unfortunately, the different species are seldom seen in cultivation." More than half a century later, the situation has not materially changed.

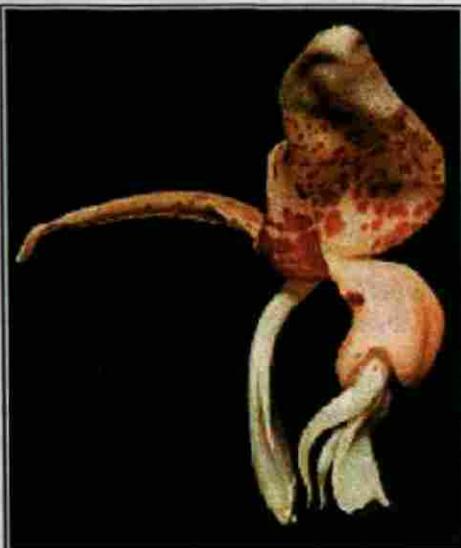


Fig. 2. *S. maculosa* photo: G. Kennedy
Orchid Digest 38 (3): 89, 95 (1974)

su zona extrema norteña de México, notó una incapacidad continua de la planta a florecer en el sur de Arizona. Kennedy (1974) reportó que él había cultivado el mismo material clonal por 21 años antes de que se presentara la primera floración en 1974. Sin embargo, lo que éste autor no reportó es que hubo una falla en su equipo en el invernadero resultando que la temperatura haya disminuido peligrosamente hasta cerca de los niveles de congelación unas semanas antes a la floración. Afortunadamente, éste autor era un excelente fotógrafo, y la fotografía a color de *S. maculosa* que tomó en el año 1974 permanece aún como el único registro de esta especie en 1998, 45 años después de que el material clonal fue encontrado en el extremo norte de México (Fig. 2). Los datos de *S. maculosa* de este estudio están hechos de impresiones de hoja tomadas del material clonal original enviados a Ferry por Mark Dimmit de Phoenix, Arizona.

3.3. PERSPECTIVAS HISTÓRICAS DE STANHOPEA

El género *Stanhopea* fue nombrado en honor de Sir Philip Henry, el cuarto conde de Stanhope (1791-1855), presidente de la Sociedad Médico-Botánica de Londres de 1829 a 1837. De acuerdo a Hawkes (1965)

Stanhopea es un género de "aproximadamente 8 a 25 o más especies." En una publicación posterior, Hamer (1974) estima que este es un género de "cerca de 20 especies," pero estas estimaciones fueron obviamente muy conservadoras, y desde esa fecha, se han sido descritas algunas especies adicionales. En una publicación más reciente, Arditti (1992) estimó "aproximadamente 50 especies," y Dressler (1993) comentó 55 como el número de especies para este género, mientras que Bechtel, et al. (1992) mantuvieron la estimación de "cerca de 25 especies." Este estudio tentativamente coincide con Dressler y reconoce 55 especies, 4 híbridos naturales y algunos híbridos inducidos por el hombre.

Los admiradores de las orquídeas han intentado relativamente pocos híbridos con miembros de este género. En una familia primordialmente conocida por sus flores con mercado hortícola (con excepción del género *Vanilla*, la orquídea del comercio) el género *Stanhopea* ha sido relegado por mucho tiempo debido a la vida relativamente corta de sus flores. De este modo el género ha sido despreciado por la industria floral comercial y relativamente ignorado por los genetistas aficionados, quienes tienden a seguir las demandas de ese mercado. Curtis (1910) describe las flores de *Stanhopea* como grandes y muy atractivas, pero menciona "las flores son de corta vida y no pueden ser usadas en decoraciones florales, por esto no pueden ser consideradas como primera clase." Como las mejores plantas del género para cultivar él menciona *S. eburnea*, blanco marfil; *S. insignis*, amarillo y púrpura; *S. lowii* (sic), amarillo y blanco; *S. tigrina* (la mejor), rojo, amarillo y blanco, muy brillante; y *S. wardii* amarillo dorado y púrpura. De este modo, aunque la distribución de este género abarca la mayor parte del Nuevo Mundo ocupado por orquídeas, las plantas de este género han sido así relegadas al dominio de los aficionados serios de orquídeas y al estudio ocasional por parte de botánicos profesionales especializados en la familia.

Tratando de clarificar las relaciones taxonómicas, Cooper (1931) notó, "raramente se pueden obtener datos muy exactos acerca del hábitat preciso de las orquídeas, y del género *Stanhopea*, particularmente la secciónes (sic) que incluye *guttulata*, *oculata*, *peruviana*, *wardii*, *insignis*, etc., es muy confusa." El observa que el color es escasamente un carácter determinante y que el tamaño puede ser afectado frecuentemente por diferencias de localidad. Cooper concluye que "la naturaleza débil de los sépalos y pétalos y la consistencia suculenta de apariencia cerosa de los labelos hace difícil la comparación por medio de flores secas, y que, desgraciadamente, las diferentes especies raramente se ven en cultivo." Mas de medio siglo después, la situación no ha cambiado materialmente.



Fig. 2. *S. maculosa* foto: G. Kennedy
Orchid Digest 38 (3): 89, 95 (1974)

3.4. BOTANICAL CHARACTERISTICS

3.4.1. GENERAL

Writing on the evolution of the Orchidaceae, Rolfe (1910b) observes subtribe Stanhopeiae is similar to Cyrtopodiæ. He sees the subtribe as forming a very natural group, and describes it as follows:

"The plants are epiphytes, with ovoid, often large pseudobulbs, terminating in one or few, usually large, plicate or prominently ribbed leaves. The scapes are leafless, pendulous, or sometimes erect, often with rather large flowers, and the lip fleshy, sometimes very complex in structure, but without a spur. The pollinarium generally has a well-developed slender stipe. The group is exclusively American, ranging from Mexico to Peru, and South Brazil, and as here defined contains about 17 genera and over 130 known species. The line of demarcation between Stanhopeiae and Cyrtopodiæ is not easy to define, but is best drawn so as to include *Lacistema*, *Lyconorium*, and *Gongora* in the former. *Cirrhaea*, placed by Bentham in Notylieae, is also more nearly allied to *Gongora*, while *Sternia* and *Schlimmia* are out of place among the Maxillarieæ."

Rolfe then writes of *Stanhopea* as follows:

"*Stanhopea* is a remarkable genus, containing upwards of 40 species, and ranging from Mexico to Brazil. They are common in gardens—indeed most of them have been described from garden materials—and they would be more popular but that the flowers are rather fugacious. The flowers are produced in short pendulous racemes, and have large membranous sepals and petals, white or yellow in colour, often spotted with reddish purple, and a very complex fleshy lip, the base being variously saccate, the front lobe often articulate, and the side lobes represented by a pair of curved fleshy horns, while the column is very long and gracefully curved."

In the early 20th century, *Stanhopea guttulata* and *oculata* were recognized as distinct species. *S. guttulata* has been reduced to being a synonym of *oculata*, but the dilemma of the botanist in recognizing which is a valid species, and which species name is correct, remains not greatly different from earlier years, and is aptly illustrated in comparisons of *S. guttulata* and *oculata* by Cooper (1931), who attempts to write critically concerning both *S. guttulata* and *oculata*. He cites the then-currently-accepted reasons for these to be two different species due to "considerable differences in the shape of the hypochiles and the characters of the spots." However, he concedes they belong to the same group, are similarly colored, that *S. guttulata* has the same habit as *oculata*, and the flowers are of approximate size. He states that *S. guttulata* is said to come from Peru and *oculata* from Brazil. Actually, *S. oculata* is known mainly from Panama and the countries northward and is only sparsely represented in the northern coast of South America and into Ecuador, but for botanists working with dried flowers, insufficient geographical data (at times deliberately given incorrectly), and many strange new species, taxonomic mistakes were certain to happen.

3.4.2. STRUCTURES

Root

In many terrestrial orchids, the roots form storage organs or tuberoids (note: a tuber, by definition must be a stem). In some the whole root is fleshy (e.g. *Spiranthinæ*) while in others (*Cleistes* and some species of *Tropidia*) some root segments are thick and others thinner. In epiphytic orchids, the roots are covered with velamen (older literature: *velamen radicum*). The velamen is morphologically homologous with the epidermis but may consist of as many as 24 cell layers. The velamen cells are dead at maturity and bordered within by the exodermis, a layer with long cells also dead at maturity, generally with thickened walls and shorter, living, passage cells that permit water and nutrients from the velamen to enter the root cortex.

3.4. CARACTERISTICAS BOTANICAS

3.4.1. GENERAL

Escribiendo sobre la evolución del Orchidaceae, Rolfe (1910b) observó que la subtribu Stanhopeiae es similar a Cyrtopodieae y él observó que esta subtribu forma un grupo muy natural, y lo describió como:

"Las plantas son epífitas, con pseudobulbos ovoides, frecuentemente grandes, terminando en una o pocas hojas, normalmente grandes, plicadas o prominentemente con nervaduras. Las inflorescencias están sin hojas, colgantes, o algunas veces erectas, a menudo con flores bastante grandes, y el labelo carnoso, a veces muy complejo en estructura, pero sin una espuela. El polinárium generalmente tiene un estipe delgado bien-desarrollado. El grupo es exclusivamente americano, encontrándose desde México hasta Perú y el sur de Brasil, y como se ha definido aquí, contiene cerca de 17 géneros y más de 130 especies conocidas. La línea de demarcación entre Stanhopeiae y Cyrtopodieae no es fácil de definir, pero queda mejor delimitada al incluir *Lacistema*, *Lyconorium*, y *Gongora* en el anterior. *Cirrhaea*, puesta por Bentham en Nostylieae, está también más estrechamente unido a *Gongora*, mientras *Sternia* y *Schlimgenia* están fuera de lugar entre Maxillarieae."

Entonces Rolfe describió *Stanhopea* como sigue:

"*Stanhopea* es un género notable, que contiene más de 40 especies, y se encuentra desde México hasta Brasil. Es común en jardines—de hecho la mayoría de ellas se ha descrito de materiales de jardín—y serían más populares si sus flores no fueran bastante fugaces. Las flores se producen en racimos colgantes cortos, y tienen sépalos y pétalos membranosos y grandes, de color blanco o amarillo, a menudo manchado con púrpura rojizo, y un labelo carnoso muy complejo, siendo la base diversamente en forma de saco, el lóbulo frontal a menudo articulado, y los lóbulos laterales representados por un par de cuernos carnosos encorvados, mientras la columna es muy larga y elegantemente encorvada."

A principios del Siglo XX, *Stanhopea guttulata* y *oculata* fueron reconocidas como especies distintas. *S. guttulata* ha sido reducida a un sinónimo de *oculata*, pero el dilema del botánico de reconocer cual es válida, y cual nombre de la especie es el correcto, no ha cambiado mucho desde entonces, y se ilustra acertadamente en las comparaciones de *S. guttulata* y *oculata* de Cooper (1931), quién intenta escribir objetivamente involucrando ambas en el mismo artículo.

Cooper (1931) cita que las razones aceptadas en aquellos tiempos para diferenciar estas dos, como especies diferentes fueron "las considerables diferencias en la forma de los hipocóilos y las características de las manchas." Sin embargo, él admite que ambas pertenecen al mismo grupo, están coloreadas similarmente, que *S. guttulata* tiene el mismo hábito de crecimiento de *S. oculata*, y que las flores son aproximadamente del mismo tamaño. El declara que *S. guttulata* se considera originaria de Perú y *S. oculata* de Brasil. Realmente, *S. oculata* es conocida principalmente en Panamá y los países del norte de América del Sur y sólo está representada escasamente a lo largo de la costa del norte y Ecuador, pero para los botánicos que trabajan con flores secas, datos geográficos insuficientes (proporcionadas a veces deliberadamente incorrectos), y muchas especies nuevas, los errores taxonómicos se hicieron probables.

3.4.2. ESTRUCTURAS

Raíz

En muchas de las orquídeas terrestres, las raíces forman órganos o tubérculos (un tubérculo, por definición debe de ser un tallo). En algunas, la raíz corteza es carnosa (e.g. Spiranthinae) mientras que en especies del género *Cleistes* y algunas especies de *Tropidia* algunos segmentos de raíz son gruesos y en otros más delgados. En orquídeas epífitas, las raíces están cubiertas con velamen (literatura antigua: *velamen radicum*). El velamen es morfológicamente homólogo a la epidermis, pero en cambio puede consistir hasta de 24 capas celulares. Las células del velamen mueren al estar maduras, y están embebidas por la exodermis, una capa con células largas que también mueren al madurar, generalmente con paredes gruesas, y células vivas que permiten un paso más rápido de agua y nutrientes provenientes del velamen que entran a la corteza de la raíz.

Thus the velamen is a spongy, whitish sheath around the root, and the cell walls usually have fibrous thickenings. Normally seen as white structures, it is sometimes surprising to the neophyte orchidist to observe this white root structure turn a vibrant green when watered. In an actively growing epiphyte root, the tip is green while the chloroplasts are masked by the velamen. When wet, the green coloring comes through showing the ability of the epiphytic root to perform photosynthesis.

In some orchids, spongy, fibrous bodies (tilosomes) are adjacent to the passage cells. Pridgen et al. (1983) recognizes seven types of tilosomes. Various functions have been proposed for tilosomes; plugs to prevent drying, barriers to pathogens, or having some possible function in the condensation of water vapor, but no firm decisions have been reached. Tilosomes occur especially in New World orchids and appear to have evolved independently in different groups. Arditti (1992) presented data about the velamen layers of seven species of *Stanhopea* (Table 1.).

Table 1. Data of root structure of 7 species of *Stanhopea* (Arditti 1992).

Species	Velamen Layers
<i>S. agfacka</i>	3 or 4
<i>S. eburnea</i>	11 or 12
<i>S. embreei</i>	6
<i>S. insignis</i>	16
<i>S. martiana</i>	9 or 10
<i>S. tigrina</i>	12
<i>S. wardii</i>	8, 6, or 7

Stem and leaf

The rhizome, and pseudobulb are included within stem terminology. The stem structures may include raphide bundles, crystals, cuticle, cortex, endodermis, epidermis, fiber, fiber bundles, hypodermis, pith or medulla, mucilage, parenchyma, phloem, sieve tubes, starch, tannin, spiral trichids, "woody parenchyma" (collenchyma), vascular bundles, and xylem. Chlorenchyma, just below the epidermis, contains vascular bundles arranged in a circle. Other vascular bundles are found in the ground tissue in the center of the stalk. Sclerenchymatous cells with heavily lignified walls form a "cap" which overlays the phloem.

The petiole and blade are included within leaf terminology. Arditti (1992) divides orchid leaves into two general categories:

Thin leaves: *Cymbidium*, *Cypripedium*, *Gongora*, some *Oncidium* and *Dendrobium* species, *Lycaste*, *Calanthe*, *Sobralia*, *Stanhopea*, and *Paphiopedilum*, but *Paphiopedilum* leaves are not as thin as the plicate foliage of *Stanhopea* or *Lycaste*.

Thick and fleshy leaves. Examples: *Cartleya*, *Encyclia*, *Maxillaria*, *Rhynchosyris*, terete *Vanda*, several *Oncidium* and *Dendrobium* species, and *Laelia*.

All thin-leaf orchids fix carbon via the C-3 (Calvin-Benson) pathway Wong and Hew (1973) and Arditti (1979). However, no work has been encountered specifically with *Stanhopea* leaves. In the C-3 sequence, ribulose-biphosphate (RUBP) is the carbon acceptor and the first stable product is 3-phosphoglycerate. Structurally, thicker leaves tend to have larger cells with thicker walls and more palisade cell layers in their mesophylls. Knowing that *Stanhopea* plants, fix CO₂ at night when jungle humidity and CO₂ levels are normally high, it might be thought productive to supply additional CO₂ to greenhouse *Stanhopeas* at night. *Cymbidium* seedlings have been known to respond to night CO₂ enrichment (Borg, 1965; Wright, 1967), although the results of others (Tsuchiya, 1935; Miwa, 1937; Anonymous, 1941, y 1965; Davidso, 1967; Arditti, 1979; and Quis, 1980) have been found by Avadhani et al. (1982) as "for the most part variable (p. 191)," and it appears that little to be gained to attempt to accelerate vegetative growth in thin leafed plants considering

Así, el velamen es una vaina blanquecina y esponjosa alrededor de la raíz, y las paredes de las células generalmente tienen engrosamientos fibrosos. Aunque normalmente se ven como estructuras blancas, algunas veces el orquidiólogo neófito queda sorprendido al observar esta estructura de raíz cambiar de color blanco a un verde brillante cuando se riega. En una raíz epífctica en crecimiento activo, la punta es verde mientras que los cloroplastos son enmascarados por el velamen. El color verde es visible cuando la raíz epífctica se humedece, lo cual demuestra su habilidad para ejecutar fotosíntesis.

En algunas orquídeas, los cuerpos esponjosos y fibrosos (tilosomas) están adyacentes a las células de pasaje. Pridgen et al. (1983) reconocieron siete tipos de tilosomas. Se han propuesto varias funciones para los tilosomas: tapones que previenen deshidración, barreras contra patógenos, o alguna función en la condensación de vapor de agua, pero no se han establecido decisiones firmes. Los tilosomas se presentan especialmente en orquídeas del Nuevo Mundo, las cuales se piensa que han evolucionado independientemente en diferentes grupos. Arditti (1992) presentó datos sobre las capas de velamen de siete especies de *Stanhopea* (Cuadro 1).

Cuadro 1. Datos de estructura de la raíz en 7 especies de *Stanhopea* (Arditti 1992).

Species	Capas de Velamen
<i>S. anfracta</i>	3 o 4
<i>S. ecornuta</i>	11 o 12
<i>S. embreei</i>	6
<i>S. insignis</i>	16
<i>S. martiana</i>	9 o 10
<i>S. tigrina</i>	12
<i>S. wardii</i>	8, 6, o 7

Tallos y hojas

Se incluye en esta terminología al rizoma y al pseudobulbo para los tallos. Las estructuras generales del tallo pueden incluir bultos de ráfidas, cristales, cutícula, corteza, endodermis, epidermis, fibras, hipodermis, médula, mucílago, parénquima, floema, tubos cribados, almidón, tanino, traqueidas espirales, "parénquima leñoso" (colénoquima), haces vasculares, y xilema. El clorenquima, justo bajo la epidermis, contiene haces vasculares colocados en círculo. Otros haces vasculares se encuentran en el tejido basal al centro del tallo. Las células esclerenquimatosas con paredes fuertemente lignificadas forman una capucha que cubre el floema.

Para las hojas se incluye en este término el pecíolo y la hoja. Arditti (1992) dividió las hojas de las orquídeas en dos categorías generales:

Hojas delgadas: *Cymbidium*, *Cypripedium*, *Gongora*, algunas especies de *Oncidium* y *Dendrobium*, *Lycaste*, *Calanthe*, *Sobralia*, *Stanhopea*, y *Paphiopedilum*, pero en esta última las hojas no son tan delgadas como el follaje plicado de *Stanhopea* o *Lycaste*.

Hojas gruesas y carnosas: *Cattleya*, *Encyclia*, *Maxillaria*, *Rhyncostylis*, *Vanda* delgada, varias especies de *Oncidium* y *Dendrobium*, y *Laelia*.

Todas las orquídeas de hojas delgadas fijan carbono vía la ruta C-3 (Calvin-Benson) de acuerdo con Wong y Hew (1973) y Arditti (1979). En esta secuencia el aceptor de carbono es ribulosa-bifosfato (RUBP) y el primer producto estable es el 3-fosfoglicerato. Estructuralmente, las hojas gruesas tienden a tener células más grandes con paredes más gruesas y más capas de células en palizada en sus mesófilos. Sabiendo que las plantas de *Stanhopea* fijan CO₂ de noche, cuando la humedad de la seiva y los niveles de CO₂ son altos, podría ser productivo suprir CO₂ adicional en la noche. Se ha sabido que plantas de semillero de *Cymbidium* responden a este enriquecimiento de CO₂ nocturno (Borg, 1965; Wright, 1967), aunque los resultados de otros (Tsuchiya, 1935; Miwa, 1937; Anonymous, 1941, y 1965; Davidson, 1967; Arditti, 1979; y Quis, 1980) han sido confirmados por Avadhani et al. (1982) como "en su mayor parte variables (p. 191)," y se aprecie que poco se puede ganar intentando acelerar el crecimiento vegetal en plantas de hojas delgadas considerando

the economic cost that this requires.

Leaf structures may include cuticles, epidermal cells, stomata (with or without subsidiary cells), a multilayered palisade parenchyma elongated anticlinally, containing numerous chloroplasts, spongy mesophyll below and not as thick as palisade layer. Cells tend to be round; both palisade and spongy mesophyll tending to be photosynthetic. Trichomes may be present on either or both adaxial and abaxial leaf surfaces (probable function to secrete mucilage). Also present are air spaces, some with a hypodermis below the epidermis (the number of layers can vary within a genus), and plastids. These may contain large amounts of a fibrous possibly proteinaceous substance, spherical vesicles that stain lightly, and an electron dense material located in reticulate and nonreticulate areas, as well as latticed crystalline inclusions, oil drops, starch, and plastoglobuli. Mitochondria are abundant in the cells at maturity.

Good quality leafprints may be made of the leaf cells of *Stanhopea* plants due to their relatively large size, but other plant leaves (e.g. *Anthurium* spp. and some orchid species) are vested with a waxy cuticle which, combined with pollutants, can cause cell borders to be difficult to differentiate under the microscope. Most of the waxy cuticle is a heterogeneous mixture of components collectively called cutin and the remainder consists of overlaying waxes and pectin polysaccharides attached to the cell walls. Cutin is a heterogeneous polymer that consists largely of various combinations of members in two groups of fatty acids, a group with 16 carbons and one with 18 (Kolattukudy, 1980a, 1980b; Holloway, 1980), with the cuticle (cutin layer) often thicker on the upper surface of the leaf (Sinclair, 1990). Most of these fatty acids have two or more hydroxyl groups, similar to ricinoleic acid, and the polymeric nature of cutin arises from ester bonds uniting hydroxyl and carboxyl groups in various fatty acids. Compounds are also present in cutin are small amounts of phenolic compounds, that bind the fatty acids to pectins of the epidermal cell walls by ester linkages (Salisbury and Ross, 1992).

Stanhopea leaves are relatively thin, plicate and have distinct petioles. From the abscission point, where the petiole joins the pseudobulb, to the tip of the blade may measure in excess of 80 cm (2 feet 8 inches), with the blade width over 18 cm (7 inches) in a well-developed specimen. Horich (1974) reports *S. warscewicziana* with the largest sized leaves of the genus, reaching lengths of 75 cm and widths of 20 cm. He notes *S. ecornuta* is "usually distinguished by extraordinarily broad, tough, 5-7 veined leaves."

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Flower

Current taxonomy places *Stanhopea* as a genus of Tribe Maxillarieae, Subtribe Stanhopeinae (Dressler, 1993). Members are epiphytic pseudobulbous herbs, with broad membranous leaves, radical sheathing, usually with pendulous scapes bearing large spotted fragrant flowers. The genus is specifically characterized by the three-part division of the labellum into hypo-, meso-, and epichile. The hypochile is the medial cavity, the mesochile the middle portion from which the horns proceed, and the epichile is the distal or front moveable lobe. The pendulous flowers have spreading or reflexed perianths. The flowers are generally fugacious. Arditti (1992) offers only 3 days for them, and they are often fragrant, sometimes heavily so. They are generally thought to function as trap flowers offering little or nothing of value to the insect pollinator, although workers have established that bees gnaw at portions of the labellum, and gather fragrance-bearing material (Rolle, 1891-1894, in Linden et al. in *Lindenia* vol. III; Williams, N. and Whitten, 1982b, 1983).

el costo económico que se requiere.

Las estructuras generales de la hoja pueden incluir cutículas, células epidérmicas, estomas (con o sin células subsidiarias), un parénquima en palizada multicapas (alargadas antecinalmente y con numerosos cloroplastos), mesófilo esponjoso debajo de y no tan grueso como la capa palizada. Las células tienden a ser redondas; tanto la palizada como el mesófilo esponjoso tienden a ser fotosintéticos. Pueden presentarse tricomas en una o ambas superficies del haz y en vez de la hoja (su probable función es secretar mucílago). Presenta también espacios aéreos, algunas con una hipodermis bajo la epidermis (el número de capas puede variar dentro del género), y plástidas. Estas pueden contener grandes cantidades de una substancia fibrosa, posiblemente proteinácea, vesículas esféricas que se tifan ligeramente, y un material denso a los electrones colocado en áreas reticulares y no reticulares, así como inclusiones cristalinas eurójo, gotas de grasa, almidón, y plastoglóbulos. Mitochondrias son abundantes en las células maduras.

Se pueden obtener improntas foliares de buena calidad de las células de las hojas de plantas de *Stanhopea* debido a su tamaño relativamente grande, pero las hojas de otras plantas (e.g. *Anthurium spp.* y algunas especies de orquídeas) están cubiertas con una cutícula cerosa la cual, combinada con contaminantes, puede causar que los bordes celulares sean difíciles de diferenciar bajo el microscopio. En mayoría, la cutícula cerosa es una mezcla heterogénea de compuestos llamados colectivamente cutina y el resto consiste de capas de ceras y polisacáridos de pectina adheridos a las paredes celulares. La cutina es un polímero heterogéneo que consiste principalmente de varias combinaciones de miembros de dos grupos de ácidos grasos, un grupo con 16 carbonos y uno con 18 (Kolattukudy, 1980a, 1980b; Holloway, 1980), con la cutícula (capa de cutina) frecuentemente más gruesa en la superficie superior de la hoja (Sinclair, 1990). La mayoría de estos ácidos grasos tienen dos o más grupos hidroxilos, similares al ácido ricinolético y la naturaleza polimérica de la cutina la cual proviene de uniques éster que ligan grupos hidroxilos y carboxilos en varios ácidos grasos. También están presentes en la cutina pequeñas cantidades de compuestos fenólicos, que ligan los ácidos grasos a pectinas de las paredes de las células epidérmicas por medio de uniones éster (Salisbury y Ross, 1992).

Las hojas de *Stanhopea* son relativamente delgadas, plizadas, y tienen pecíolos distintivos. Desde el punto de abisión, donde el pecíolo se une al pseudobulbo, hasta la punta de la hoja se pueden medir más de 80 cm (2' 8"), con anchura de la hoja hasta más de 18 cm (7") en un ejemplar bien desarrollado. Horich (1974) reportó que *S. warscewicziana* tiene las hojas más grandes del género, con longitudes hasta de 75 cm y anchuras de 20 cm. También notó en sus exploraciones en Costa Rica que *S. ecornuta* generalmente se distingue por hojas extraordinariamente anchas y macizas, con 5-7 venas.

DIRECCIÓN GENERAL DE BIBLIOTECAS

Flor

La taxonomía cortiente coloca *Stanhopea* dentro un género de la Tribu Maxillarieae, Subtribu Stanhopeinae (Dressler, 1993). Sus miembros son hierbas con pseudobulbos epífitos y hojas membranosas anchas, forro de cubierta radical, generalmente con escamas pendulosas que portan flores largas fragantes y manchadas. El género se caracteriza específicamente por la división del labelo en tres partes hipo-, meso-, y epíquilo. El hipoquilo es la cavidad basal, el mesoquilo el medio desde donde proceden los cuernos, y el epíquilo es el distal o lóbulo móvil del frente. Las flores pendulosas tienen periantios esparcidos o reflejos. Las flores generalmente son fugaces. Arditti (1992) indica que solo duran 3 días, y que frecuentemente tienen fragancia, a veces muy fuerte. Generalmente se piensa que ellas funcionan como flores de trampa ofreciendo poco o nada de valor al insecto polinizador, aunque los autores han establecido que las abejas roen porciones del labelo, y cogen material con fragancia (Rölfe, 1891-1894, en Linden et al. en *Lindenia* III; Williams, N. and Whitten, 1982b, 1983).

In greenhouse cultured plants, the inflorescence usually burrows through the bottom or side of the container and hangs pendulously, usually bearing two or more flowers which, although they subtend laterally, hold the column and labellum in a downward position with the sepals and petals reflexed backward. A few species (*S. ecornuta* and *S. martiana*) tend to flower at the surface of the plant instead of perforating the root cluster and displaying pendulously.

Van der Pilj and Dodson (1966) refer to *S. annulata*, *ecornuta*, and *pulla*, as three primitive members, characterized by small, partly closed flowers. In the majority of *Stanhopea* flowers, the bee-pollinator enters the flower, scratches at the base of the lip, and then backs out. Dodson reports the bees enter and leave the flower from the side in primitive members. In many cases the bee backs out, with the projections on each side of the apex of the lip keeping it in the center of the lip and positioning the insect correctly for touching the column which places the pollinarium on his back. They also observed that in all species of *Stanhopea*, the pollinarium must be removed for the stigma to become receptive.

The insect pollinator usually enters the flower through the side (Fig. 3), at the right or left, in the region of the mesochile-hypochile, below the ovary. The ovary is not shown in Figure 3, but is above the hypochile, petals, and sepals. After scratching at the inside base of the hypochile, the bee loses its footing, slides downward, and the mesochile horns guide it into contact with and past the spur of the anther cap on the inside bottom end of the column. A spur on the anther cap catches on the aft rim of the insect's thorax, breaking the antheridium free and bringing the sticky surface of the pollinia foot in contact with the dorsal surface of the insect's thorax, attaching the pollinia to the insect. The insect is then guided by horns of the channel of the epichile and exits the flower. Shortly after attachment of the pollinia the anther cap falls away, leaving the pollen masses exposed, held aloft by the stipes.

The pollen within the anther cap must have been detached from the flower before pollination can take place. With the anther cap removed, the antheridium spur is absent, leaving the column's stigmatic cavity open. The pollen masses attached dorsally on the bee (from another flower), elevated by the stipes, are now in position to make contact with the stigmatic surface of the column which is located a little above the location of the anther cap and pollen packet, and remains inaccessible unless they have been removed (Fig. 4).

As well as being referred to as "trap flowers," the advanced species have been called a "drop flower" or "fall-through" flower (Dressler, 1968). Dodson and Frymire (1961) described the *Stanhopea* trap-flower strategy of pollination of *S. jenishiana* (reported originally as *S. bucephalus*) by the male bee, *Eulaema bombooides*.

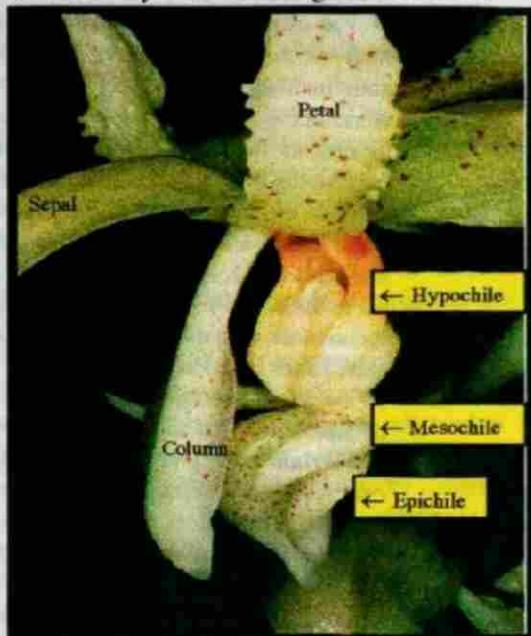


Fig. 3. Interior of labellum showing dorsal exterior of column and cap with pollen.



Fig. 4. Column and labellum (quartering posterior aspect)



En plantas cultivadas en invernadero, la inflorescencia generalmente brota por el fondo o por un lado del recipiente y cuelga pendularmente, en general portando dos o más flores, las que, aunque cuelguen lateralmente de la inflorescencia, mantendrán la columna y el labelo en una posición hacia abajo y con los sépalos y pétalos reflejados hacia atrás, estrechamente en algunos casos. Sin embargo, se conocen algunos casos en *Stanhopea* (*S. ecornuta* y *S. martiana*) en los cuales tienden a aparecer en la superficie de la planta, en lugar de perforar el haz de raíces hacia abajo.

Van der Pilj y Dodson (1966) refieren *S. annulata*, *ecornuta*, y *pulla*, como tres miembros primitivos, caracterizados por flores pequeñas y cerradas en parte. En la mayor parte de las flores de *Stanhopea*, la abeja entra a la flor, rasca la base del labio, y se regresa. Dodson reporta que las abejas entran y salen por un lado en flores primitivas. En muchos casos la abeja sale, con las proyecciones laterales del ápice del labio manteniéndola en el centro del labio, posicionando el insecto correctamente para tocar la columna, lo cual coloca el polen en su espalda. Ellos también observaron que en todas las especies de *Stanhopea*, el polinario debe removese del estigma para pasar a ser receptivo.

El insecto polinizador generalmente entra en la flor por un lado (Fig. 3), sea a la derecha o izquierda, en la región del mesoquilo-hipoquilo, abajo del ovario, el que no se muestra en la Figura 3, pero esta arriba del hipoquilo, los pétalos, y los sépalos. Despues de rascar en la

base interna del hipoquilo, la abeja pierde pisada y resbala hacia abajo, y los cuernos del mesoquilo lo guian hacia el contacto con y mas allá del espolón de la caperuza de la antera. El espolón toca sobre el extremo final del tórax del insecto, libera el anteridio y lleva la superficie pegajosa del pie de la polinia al contacto con la superficie dorsal del tórax del insecto, fijando la polinia al mismo. El insecto es luego guiado por los cuernos del mesoquilo atraves del epíquilo, y sale de la flor. Poco despues de la fijación de la polinia, la caperuza de la antera se desprende, dejando las masas de polen expuestas, sostenidas por los estipes.

El polen dentro de la caperuza de la antera, debe desprenderse de la flor de *Stanhopea* antes de que la polinización suceda. Con la caperuza de la antera removida, el espolón del anteridio está ausente y deja la cavidad estigmática abierta. Las masas de polen de otra

flor pegadas dorsalmente sobre la abeja, elevadas por las estipes, se encuentran ahora en posición de hacer contacto con la superficie estigmática de la columna colocada a la derecha y poco mas abajo que el espolón (Fig. 4).

Además de referirse a ellas como "flores-trampa," las especies avanzadas han sido llamadas "flores de caída" ("drop flower, fall-through") (Dressler, 1968). Dodson y Frymire (1961) describieron la estrategia de polinización de la flor-trampa de *Stanhopea jenishiana* (reportada originalmente como *S. bucephalus*) por la abeja macho *Eulaema bombooides*.

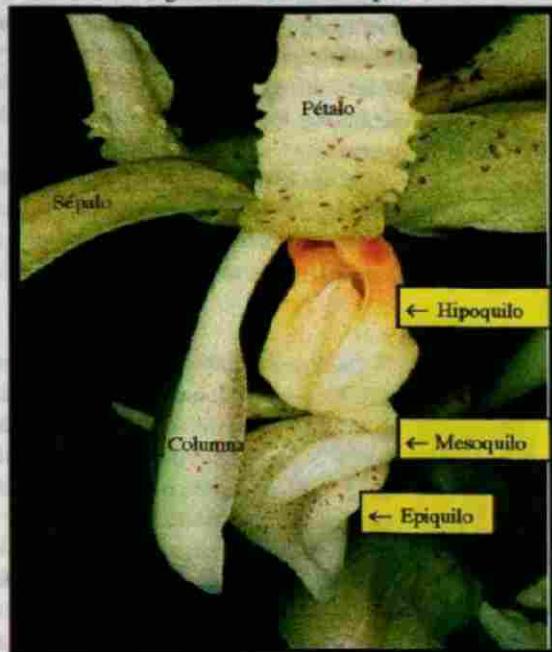


Fig. 3. Interior del labelo enseñando el dorso exterior de la columna con la capa con el polen.

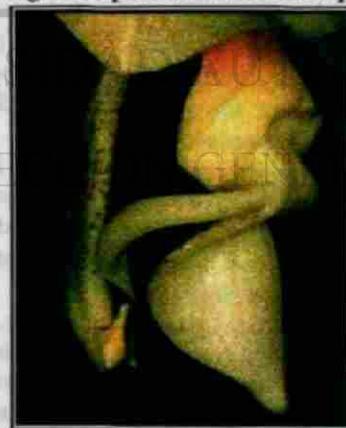


Fig. 4. Columna y labelo
(aspecto cuarto posterior)

Dodson (1968) also declares that different species of advanced members of this genus attract large bees of the genus *Eulaema* as well as smaller Euglossas, with pollinator size and ethological isolating mechanisms playing important roles. Typically, the flower may attract both small and large bees, but the smaller bee may fall through the flower without contacting the viscidium. In all cases, the pollinator appears to be a male bee gathering fragrance.

Heinrich (1979) identified male euglossine bees (*Eulaema*, *Euglossa*, and *Euplusia*) scraping orchid flowers with their tarsal brushes and then depositing the floral scent material into their inflated hind tibia. Although unsubstantiated, this tibial floral fragrance may act as an attractant to females.

Fruit

The three carpels of the orchid ovary are surrounded by fleshy receptacular tissues. The fruit does not split between the carpels, but usually does so down their midlines (Fig. 5). In most orchids the midvein of the carpel separates from each half-carpel so that the fruit splits into three wide valves and three narrow ones, with the edges of the wide ones connected by transverse fibers through which the micro-seeds sift. Ferry (1995, unpublished) has observed specimens of *Spiranthes* and *Govenia* species with thin-walled papery dry seed capsules held approximately upright, while the *Stanhopea* plants hold their heavier, more corpulent ones pendants. This is in agreement with the observations of Beer (1863) and Malgruth (1901) who record that terrestrial orchids usually have seed capsules composed of thin-walled papery fruits that are somewhat dry and held erect or nearly so, while those of epiphytic orchids hold their seed capsules pendants and have capsule walls that are much thicker and more fleshy.

Halle (1977) illustrates the fruit structure for many orchid species. Dressler (1993) continues that "there are several features in the fruit that may be of value in classification (p. 48)," but does not elaborate beyond noting that the structure of orchid fruits has been neglected by most botanists. Arditti (1992) cites tricarpellate ovaries with axial placentation in the *Apostasioideae*, *Selenepedilum*, and *Phragmipedium*, all of which are relatively primitive, while in advanced orchid taxa the ovary is monocarpellate and trilocular with parietal placentation.

Epiphytes bearing seed capsules are generally found well above ground level. This facilitates wider spreading of the dust-like seed as it is shed. In southwestern (Ataco) Colombia, during the summer of 1977, members of *Catasetum* were observed growing in the low light levels of the jungle. These plants bore only male flowers and attracted male euglossine bees early in the morning. Male flowers lose their fragrance later in the morning, but the females—high in the jungle overstory—were now fragrant. Male bees, still with pollen attached to head or thorax, would fly upward and scratch within the flowers. Studying these bees flying downward, it could now be observed with the binoculars that the pollen fixed to them by the male flowers in the lower elevation, low-light levels had been taken by the later-fragrant female flowers produced only in the high level, high light areas of the jungle. Plants in lower, low-light areas bore no seed capsule remains, but a few old seed pod remains could be seen on plants high in the trees.

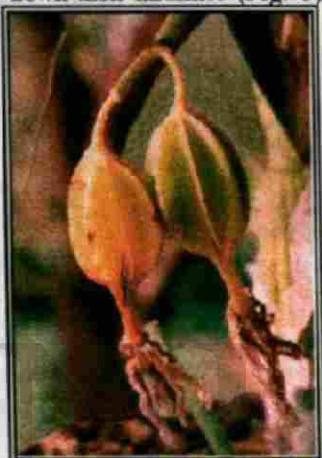


Fig. 5. Orchid fruit.

Dodson (1968) declaró también que diferentes especies avanzadas del género atraen abejas grandes del género *Eulaema* tanto como a las pequeñas euglossas, reconociendo que el tamaño del polinizador juega es importante entre los mecanismos de talla de polinizador y de aislamiento etológico. Típicamente la flor puede atraer ambas abejas, pequeñas y grandes, pero aquellas pueden caer a través de la flor sin contactar el viscidio. En todos los casos, el polinizador parece ser una abeja macho que recoge fragancia.

Heinrich (1979) identificó machos de abejas euglossinas (*Eulaema*, *Euglossa*, y *Euplusia*) raspando flores de orquídea con sus peines tarsales y luego depositando el material floral oloroso en sus infladas tibias posteriores. Aunque no comprobado, esta fragancia floral en la tibia puede funcionar como un atrayente a las hembras.

Fruta

El ovario de las orquídeas está integrado por tres carpelos, rodeados de tejidos receptaculares carnosos. La fruta no se divide entre los carpelos sino que generalmente lo hace bajo sus líneas medias (Fig. 5). En la mayoría de las orquídeas la vena central del carpelo se separa de cada mitad del carpelo de modo que la fruta presenta tres valvas anchas y tres angostas, con sus bordes anchos conectados por fibras transversales a través de las cuales las micro-semillas salen espaciadas. Ferry (1995, no publicado) ha observado plantas de especies de *Spiranthes* y *Govenia* con cápsulas de semillas secas envueltas por una fina pared de material parecido a papel dispuestas aproximadamente hacia arriba, mientras que las ejemplares de *Stanhopea* más corpulentas las contienen más pesadas y colgantes. Esto coincide con las observaciones de Beer (1863) y Malgruth (1901) quienes reportaron que las orquídeas terrestres generalmente contienen cápsulas de semillas compuestas de frutas envueltas en fino material parecido a papel que de alguna manera se secan y se mantienen erectas o casi erectas, mientras que las de las orquídeas epífitas mantienen sus cápsulas de semillas colgantes y tienen paredes que son mucho más gruesas y carnosas.

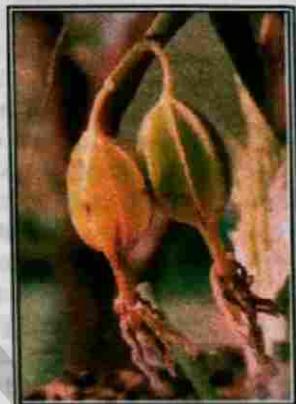


Fig. 5. Frutas de una orquídea.

Halle (1977) ilustró la estructura de las frutas de muchas especies de orquídeas. Dressler (1993) estableció que "hay algunas características del fruto que pueden ser de valor para su clasificación", señalando que la estructura de los frutos de las orquídeas ha sido ignorada por la mayoría de los botánicos. Arditti (1992) citó ovarios tricarpelados con placentación axial en la subfamilia Apostasioideae, y en los géneros *Selenepedilum* y *Phragmipedium*, las cuales son relativamente primitivas, mientras que en los grupos taxonómicos avanzados el ovario es monocarpelado y trilobular con placentación parietal.

Las epífitas que producen cápsulas de semillas se encuentran generalmente muy por encima del nivel del suelo. Esto facilita una mayor dispersión de las semillas pulverulentas a medida que son liberadas. En el Suroeste de Colombia (Ataco), durante el verano de 1977, se observaron miembros de *Catasetum* creciendo en niveles de la selva con baja iluminación. Estas plantas sólo originaron flores macho y atrajeron abejas macho temprano por la mañana. Estas plantas perdieron su fragancia más tarde a medio día, pero las flores hembra, en el dosel o partes más altas de la selva, eran ahora fragantes. Las abejas macho, aún con el polen adosado a su tórax o cabeza, se volarían hacia arriba y se introdujeron en las flores. Estudiando estas abejas machos en vuelo hacia abajo, se pudo ahora observar con los binoculares que el polen fijado sobre ellos por las flores macho en las elevaciones más bajas, con niveles bajos de luz, había sido tomado por las flores hembra que son fragantes más tarde producidas sólo en los niveles altos, de áreas más iluminadas de la selva.

Seed

Beer (1863) surveyed and described several types of orchid seeds, giving some idea of their diversity, but Dressler (1993) states that seed structure, like fruit structure, has been much neglected. Rauh et al. (1975) appears to be the first to use the scanning electron microscope to work with orchid seeds, followed by Barthlott (1976) who surveyed a larger selection. Barthlott is of the opinion that seed structure will be particularly useful at the subtribal and tribal levels. This early work has been expanded upon by Barthlott and Ziegler (1981), and twelve SEM photographs may be seen in Dressler's 1993 work. Ziegler supplied Dressler with a list of seed types which are listed as well.

From the Ziegler list in Dressler (1993), "type 12a" *Epidendrum secundum* is easily among the largest of orchid seeds. It is composed of a balloon-like thread to 6.0mm long and is medially inflated. It is about 300-400 μ wide with the cells of the medial section isodiametric.

Seeds of C83 *Stanhopea cf. amoena* are figured in this section (Figs. 6 & 7). Seeds of other genera, kindly supplied by Hicks of Socorro, New Mexico of the Orchid Seedbank Project, have also been photographed. Orchid seeds are dust-like; most are microscopic in size. The embryo is loosely enclosed by a transparent seed coat which is reinforced by its cell walls. Microscopically, seeds of *Stanhopea* species typically look like a small transparent bag holding the spherical or egg-shaped embryo; the bag elongating and narrowing to a small opening. *Stanhopea* seed type is described by Ziegler (in Dressler, 1993) as follows:

"White or brownish balloon seeds more than 500 μ in diameter, both the basal and apical sectors may project as tiny stalklets, the testa cells in the balloon-like medial sector are all of the same size and isodiametric-polygonal, but the terminal cells are more or less strongly elongate; the testa cells are not or are incompletely collapsed, so that the outer periclinal wall stretches over the cell lumen; the anticlinal walls are reticulate; a smooth marginal ridge is present, as are cell border ridges."

Species survival strategies, labeled "r" and "k" are outlined in ecology texts (Smith, 1977; Miller, 1979). The r strategists are classically short-lived, have high reproductive rates, and produce a lot of eggs or young, of which only a fraction ever survive. The r strategists are known as opportunists. R strategists exploit relatively uncompetitive situations, are tough and adaptable, have the means for wide dispersal, and are good colonizers. With respect to seed production and seed distribution patterns, orchids certainly qualify as r strategists. Established epiphytic orchid plants, however, tend to exhibit at least a few aspects of the k strategists in that they have no defined life span and may become a large mass of growths of the same clone that inhabit a particular tree or other niche for many years. Kennedy (1975), writing of *S. maculosa*, cites a giant clump, fully 3 feet in diameter that has grown for many years on an old magnolia tree in the courtyard of the Hotel Progresso in Uruapan, Michoacán, Mexico.

Several Arctic species of orchids appear to aptly fit the r strategy. Luer (1975) has

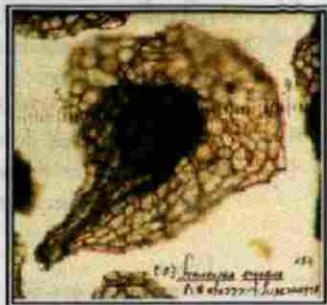


Fig. 6. Orchid seed. x80
C83 *Stanhopea cf. amoena*



Fig. 7. Seed of C83 *Stanhopea cf. amoena* x32

Semilla

Beer (1863) inspeccionó y describió algunos tipos de semillas de orquídea, dando a conocer ciertos aspectos relacionados con su diversidad. Posteriormente, Dressler (1993) estableció que la estructura de la semilla, al igual que la del fruto, han sido ignoradas. Rauh et al. (1975) parece haber sido el primer taxónomo en usar el microscopio electrónico de barrido para trabajar con semillas de orquídea, seguido por Barthlott (1976) quien examinó una gran selección, y es de la opinión que la estructura de la semilla es particularmente útil a nivel de tribu y subtribu. Este trabajo fue ampliado por Barthlott y Ziegler (1981); además, pueden verse doce fotomicrografías de SEM en Dressler (1993), el que ha proporcionado una lista de semillas. De la lista de Ziegler en Dressler (1993), el "tipo 12a" *Epidendrum secundum* se la clasifica entre las semillas más grandes de orquídeas. Está compuesta de una trama parecida a globos de hasta 6mm de largo. Tiene cerca de 300 a 400 μ de ancho, con las células de la sección medial isodiamétricas.

Las semillas C83 *Stanhopea cf. amoena* se muestran en esta sección (Figs. 6 y 7). Las semillas de otros géneros, suministradas por Hicks de Socorro, Nuevo México a través del proyecto Banco de Semillas de Orquídeas, han sido fotografiadas. Las semillas de orquídea son semejantes al polvo, la mayoría de tamaño microscópico. El embrión está sueltamente envuelto por una cubierta transparente de la semilla reforzada por sus paredes celulares. Microscópicamente, las semillas de *Stanhopea* típicas parecen sacos transparentes que contienen embriones esféricos o de forma de ovoide. Este saco se alarga y se estrecha hasta un pequeño orificio. El tipo de semilla de *Stanhopea* está descrito por Ziegler, citado por Dressler (1993) de la siguiente manera:

"Semillas globosas blancas o pardas de más de 500 μ de diámetro, las zonas basales y apicales se pueden proyectar como finos pedúnculos, las células de la testa en la zona media son de un mismo tamaño y poligonales isodiamétricas, pero las células terminales son más o menos alargadas; las células de la testa no son o están incompletamente colapsadas, de modo que la pared pericinal más externa presiona sobre el lumen de la célula; las paredes anticinales son reticulares; una pequeña protuberancia marginal está presente así como crestas en el borde de las células."

Las estrategias de sobrevivencia de las especies llamadas "r" y "k" se describen en los textos de ecología (Smith, 1977; Miller, 1979). Los estrategias r son clásicamente de corta duración, tienen altas tasas reproductivas y producen gran cantidad de huevos o juveniles, de los cuales sólo una fracción sobrevive. Los estrategias r se conocen como oportunistas, explotan situaciones de baja competencia, son adaptables, tienen los medios que les permiten para una gran dispersión y son buenos colonizadores. Con respecto a la producción de semillas y su patrón de distribución, las orquídeas ciertamente califican como estrategias tipo r. Sin embargo, las plantas de orquídeas epífitas establecidas tienden a exhibir al menos algunos aspectos de los estrategias k en los que ellas no tienen un tiempo de vida definido, y pueden llegar a formar grandes masas de crecimiento del mismo clon que habita un árbol particular u otro nicho por muchos años. Kennedy (1975), estudió sobre *S. maculosa*, y citó una agrupación gigante de 3 pies (1m) de diámetro que ha crecido por muchos años sobre un viejo árbol de *Magnolia* en el Hotel Progreso de Uruapan, Michoacán, México.

Algunas especies árticas de orquídeas parecen adaptarse a la estrategia r. Luer (1975) ha

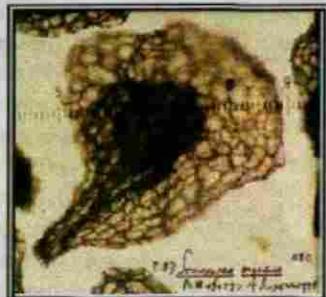


Fig. 6. Semilla de orquídea x80
C83 *Stanhopea cf. amoena*



Fig. 7. Semillas de C83 *Stanhopea cf. amoena* x32

recorded several terrestrial orchids from Arctic regions and other habitats similarly harsh. A perusal of their ranges indicates their seeds are carried by the prevailing winds and endure sub-freezing temperatures for long periods of time. The plants are known to survive temperatures well below freezing. The discovery of some samples of *Amerorchis rotundifolia* in early September, 1960 in northern Alaska typifies their adaptability. Two small flowers remained. The rest had set seed and there were previously-dehisced seed capsules. The barren tundra around the military radar site at Tin City, Alaska, overlooked Cape Prince of Wales, Little Diomede (US), and Big Diomede and Siberia (USSR). The Arctic Circle is a few degrees farther north; Nome 135 miles southeast (Figs. 8 & 9). That orchids survive, flower, and set seed where spring comes late and winter arrives early, so far north no trees grow, where temperatures fall to -50°F. (-46°C.) during the long night of winter speaks eloquently about the survivability of orchids and orchid seeds.

Other orchids have been observed by Ferry in northern Georgia where winter snow depths of four inches (10cm) are not unusual. These include *Cypripedium acaule* var. *pubescens* (the state flower of the northern state of Minnesota), *Galopsis spectabilis*, *Goodyera pubescens*, *Platanthera clavellata*, *Tipularia discolor*, *Spiranthes vernalis*, *S. lacera* var. *gracilis*, and others. Beyond a doubt, the "dust-like" microscopic seeds of both terrestrial and epiphytic orchids are durable and easily spread by the wind and perhaps on the feet and feet, fur and feathers of animals.

3.5. ECOLOGICAL DISTRIBUTION

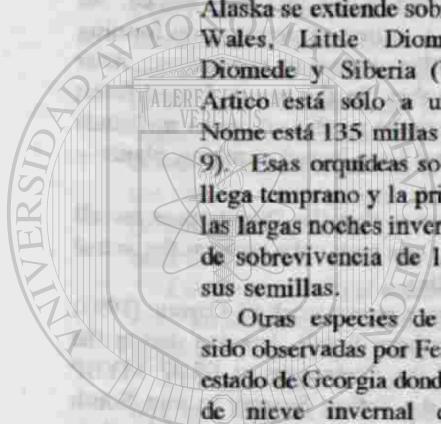
The genus *Stanhopea* is known from only the Western Hemisphere, with representatives from northern Mexico (Kennedy 1974) throughout Central America and in South America in Bolivia, Brazil, Colombia, Ecuador, The Guianas, Peru, and Venezuela; from latitude North 29° to not quite South 29° in southern Brazil (Lindley, 1830-40, 1876; Cogniaux and Goossens, 1899, 1900, 1902, 1902a, 1903, 1904, 1906a, 1906b; Sander and Sander, 1927; Missouri Botanical Garden, 1946, 1980; Williams, L. O., 1951; Ames and Correll, 1952, 1953; Schweinfurth, 1958, 1959, 1960, 1961, 1970; de Oca, 1963; Dodson and Gillespie, 1967; Hamer, 1974, 1982, 1983a, 1983b; Withner, 1974; Dodson, 1975b; Dodson and Dodson, 1980a, 1980b, 1980c, 1980d, 1980e, 1982; Vasquez and Dodson, 1982; McVaugh, 1985; Arosema et al., 1988; Chávez and García, 1988; Atwood, 1989; Mora and Atwood, 1992).



Fig. 8. Siberia (USSR), Tin City, and Nome, Alaska
Habitat of *A. rotundifolia* (Banks) Hultén.



Fig. 9. Geographic distribution of *A. rotundifolia*.



registrado algunas especies terrestres de orquídea en las regiones árticas y otras regiones

similarmente hostiles. Las observaciones indican que sus semillas son llevadas por los vientos prevalecientes y toleran temperaturas cercanas a la congelación durante largos períodos de tiempo. Las plantas son capaces de tolerar y sobrevivir temperaturas muy por debajo del punto de congelación.

El descubrimiento de algunos ejemplares de *Amerorchis rotundifolia* en septiembre de 1960 al norte de Alaska tipifica su adaptabilidad. Dos pequeñas flores se mantuvieron abiertas. El resto había formado semillas y se observaron cápsulas anteriores abiertas. La tundra estéril alrededor del radar militar en Tin City, Alaska se extiende sobre el Cabo Príncipe de Wales, Little Diomede (USA) y Big Diomede y Siberia (USSR). El Círculo

Ártico está sólo a unos grados al norte. Nome está 135 millas al sureste (Figs. 8 &

9). Esas orquídeas sobreviven, florecen y depositan semillas en lugares donde el invierno llega temprano y la primavera llega tarde; al norte, con temperaturas de -46°C. (-50°F.) durante las largas noches invernales, ningún árbol crece, lo cual pone en evidencia de la gran capacidad de supervivencia de las orquídeas y sus semillas.

Otras especies de orquídeas han sido observadas por Ferry al norte del estado de Georgia donde profundidades de nieve invernal de 10cm son comunes. Estas incluyen a *Cypripedium acaule* var. *pubescens* (la flor del estado del norte de Minnesota, EUA), *Galearis spectabilis*, *Goodyera pubescens*, *Platanthera clavellata*, *Tipularia discolor*, *Spiranthes vernalis*, *S. lacera* var. *gracilis*, entre otras. Sin

duda alguna, las semillas microscópicas pulverulentas de orquídeas terrestres y epífitas son duraderas y se esparcen fácilmente por el viento y tal vez en las patas, plumas, y pelos de animales.

3.5. DISTRIBUCION ECOLOGICA

El género *Stanhopea* es conocido solamente en el hemisferio occidental, con representantes encontrados desde el norte de México (Kennedy 1974) a través de América Central y en América del Sur, Bolivia, Brasil, Colombia, Ecuador, Las Guayanas, Perú y Venezuela, de la latitud 29° norte hasta poco antes de la latitud 29° sur, de Brasil (Lindley, 1830-40, 1876; Cogniaux and Goossens, 1899, 1900, 1902, 1902a, 1903, 1904, 1906a, 1906b; Sander and Sander, 1927; Missouri Botanical Garden, 1946, 1980; Williams, L. O., 1951; Ames and Correll, 1952, 1953; Schweinfurth, 1958, 1959, 1960, 1961, 1970; de Oca, 1963; Dodson and Gillespie, 1967; Hamer, 1974, 1982, 1983a, 1983b; Withner, 1974; Dodson, 1975b; Dodson and Dodson, 1980a, 1980b, 1980c, 1980d, 1980e, 1982; Vasquez and Dodson, 1982; McVaugh, 1985; Arosema et al., 1988; Chávez and García, 1988; Atwood, 1989; Mora and Atwood, 1992).



Fig. 8. Siberia (USSR), Tin City y Nome, Alaska. Habitat de *A. rotundifolia* (Banks) Hultén.

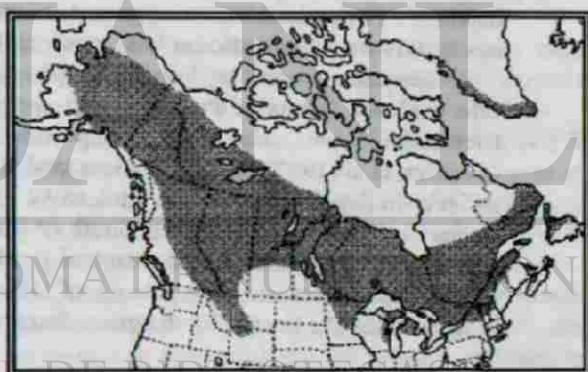


Fig. 9. Distribución geográfica de *A. rotundifolia*

An article by Harvey (1903) details a typical orchid collecting journey beginning in the Cordoba area of Veracruz, traveling from there by train to Orizaba, and after meeting with friends, to the town of Paso del Macho. The collecting trip was made in February, and an abundance of orchid plants were collected. The genus *Stanhopea* was represented among orchids collected (*S. oculata* and *S. tigrina*) as were members of the genera *Chysis*, *Dendrobium*, *Encyclia*, *Epidendrum*, *Odontoglossum*, *Oncidium*, *Laelia*, *Lycaste*, *Schomburgkia*, *Sobralia*, *Trichopilia*, and others. The article is significant not only for its historical value regarding orchid collecting of that day, but gives a good survey of orchid species that may be encountered in the Monterrey, Mexico area.

Hermesssen (1916), wrote on the ecology of orchids, but more particularly his observations leaned toward orchids in Mexico as follows: " *Stanhopea* species are nowhere encountered but on big rough barked trees in dense shady humid forest..." However, one is left to wonder which species of trees are hosts to members of this genus. He says he has collected *Stanhopea* species on the Isthmus of Tehuantepec at 300 feet (100m) above sea level; in the state of Veracruz between Cordoba and Orizaba at from 2,000 to 5,000 feet (ca. 700-1700m); and in the Sierra Madre, on the Pacific Coast, in the state of Chiapas, at 2,000 feet. He notes that in these widely separated localities, the surrounding conditions were identical, and in the last case named, the station was most plainly defined and limited by a visible (italics his) line of demarcation forming the crest of a ridge, on the other side of which was a totally different class of vegetation. After describing the two ecological zones in some detail, he observes that "in the mossy humid forest exposed to frequent rains, aqueous mists, and prevalent winds from the north-east, was a multitude of *Stanhopeas* amidst a becoming setting of bromelias, ferns, and large-leaved climbing plants – the whole forming a botanical paradise."

Lankester (1918) writing on the orchids of Costa Rica observes that the "*Stanhopeas* are all budding." His undated letter was printed in June, but as a result, one may only guess at the actual month this was taking place at Las Concavas, Cartago, Costa Rica.

Observations *in situ* by Fowlie (1967) coupled with the more recent work of Ossian (1993) offer evidence that primitive *Stanhopea* species existed in northern South America during the Cretaceous Period. The Asteroid impact at Chicxulub ended the Cretaceous at 65.07 MYBP (Swisher, et al. 1992) and a contiguous land mass did not close the Tethys Seaway to join South and present-day Central America until ±59.2 MYBP or later. Also, all species identified by their flowers as "primitive" come from South or lower Central America. Therefore a synthesis of the conclusions of the botanists, the work of Fowlie, the geophysical work of Swisher et al., and the orchid-oriented tectonic plate research of Ossian (1993) infers a South-to-North species radiation pattern during the Eocene for the genus *Stanhopea*.

3.6. SOCIOECONOMIC AND CULTURAL ASPECTS

The socioeconomic aspect of *Stanhopea* orchids is effectively nonexistent. Although Lawler (1984) reports the pseudobulbs of *S. tigrina* have been used for making tortillas by Indians in southern Mexico, cultivation of the species as a food plant is unknown, and the fugacious nature and

pendulous flowering habit of *Stanhopea* eliminates it as a plant of any economical or floral value. Although the genus is widespread, archivists in all countries regard its species as botanical curiosities of little commercial value.

3.7. CULTIVATION AND MANAGEMENT ASPECTS OF THE GENUS STANHOPEA

Burberry (1895) suggested March (in England) as a good time for "rebasketing" specimens of *Stanhopea*. In a later writing (1898), he notes that Stanhopeas should be grown in baskets without crockery shards of any kind at the bottom in order that the flower spikes may have a clear road, and recommends a potting media of two parts peat and one part sphagnum moss. Morgan (1909) suggested that as they pass out of flower the plants should be examined and (re)potted or top-dressed with more of the same material originally used. He cited a "stove" temperature (a

Harvey (1903) detalla una típica jornada de colecta de orquídeas empezando en el área de Córdoba, en Veracruz, viajando de allí por tren a Orizaba, y después de encontrarse con amigos, al pueblo de Paso del Macho. El viaje de colecta se realizó en febrero, y se colectó de manera abundante plantas de orquídea. El género *Stanhopea* estuvo presente entre orquídeas colectadas (*S. oculata* y *S. tigrina*) tales como miembros de los géneros *Chysis*, *Dendrobium*, *Encyclia*, *Epidendrum*, *Odontoglossum*, *Oncidium*, *Laelia*, *Lycaste*, *Schomburgkia*, *Sobralia*, *Trichopilia*, y otros. El artículo es significativo no sólo por su valor histórico con respecto a la colecta de orquídeas de ese día, sino representa una buena perspectiva de las especies de orquídeas que pueden encontrarse todavía en la área de Monterrey, México.

Hermessea (1916), escribió sobre la ecología de las orquídeas, pero particularmente sus observaciones se inclinan hacia las orquídeas en México como sigue: "Las especies de *Stanhopea* no se encuentran en ninguna parte excepto en árboles grandes de corteza áspera en bosques húmedos de sombra densa..." Sin embargo, uno permanece con la interrogante de cuales especies de árboles son los hospederos de los miembros de este género. El dice que ha colectado especies de *Stanhopea* en el Istmo de Tehuantepec a 100m (300 pies) sobre el nivel del mar, en el estado de Veracruz entre Córdoba y Orizaba desde 700-1700m (ca. 2,000 - 5,000 pies) de altura; y en la Sierra Madre, en la Costa del Pacífico, en el estado de Chiapas, a 700m (ca. 2,000 pies) de altura. El señala que en esas localidades ampliamente separadas, las condiciones circundantes eran idénticas, y en el último caso nombrado, la estación estaba definida más claramente y limitada por una línica visible (cursivas de él) de demarcación que forma la cresta de una montaña, en el otro lado de la cual, había una clase de vegetación totalmente diferente. Después de describir las dos zonas ecológicas con un poco de detalle, él observa que "en el bosque húmedo, musgoso, expuesto a lluvias frecuentes, lloviznas, y los vientos predominantes del noreste, había una multitud de *Stanhopeas* entre un adecuado ambiente de bromelias, helechos, y plantas trepadoras de hojas grandes—el conjunto formando un paraíso botánico."

Lankester (1918) al escribir sobre las orquídeas de Costa Rica observó que las "Stanhopeas están todas en floración." Su carta sin fecha fue publicada en junio, pero con el resultado que uno sólo puede adivinar el mes real en que esto tuvo lugar en Las Cónicas, Cartago, Costa Rica.

Observaciones *in situ* por Fowlie (1967) junto con el trabajo más reciente de Ossian (1994) ofrecen evidencia de lo especies primitivo que resultaba las de *Stanhopea* existían en el norte de América del Sur durante el Periodo Cretácico. El impacto del asteroide de Chixculub terminó el Cretácico a 65.07 millones de años antes del presente (maadp) y una masa contigua de tierra no cortó el Mar de Tethys con una masa continua de tierra que conectó las tierras de América Central y del Sur hasta ±59.2 maadp o más tarde (Swisher, et al., 1992). También, todas las especies identificadas por sus flores como "primitivas" vienen del Sur o de la parte baja de América Central. Así, una síntesis de las conclusiones de los botánicos, el trabajo de Fowlie (1967), el trabajo geofísico de Swisher et. al. (1992), y el trabajo de Ossian (1993) sobre las orquídeas basado en las placas tectónicas infieren un patrón de radicación de sur-a-norte durante el Eoceno para el género *Stanhopea*.

3.6. ASPECTO SOCIOECONOMICO Y CULTURAL

El aspecto socioeconómico sobre orquídeas de *Stanhopea* efectivamente no existe. Aunque Lawler (1984) reportó que los indios han usado los pseudobulbos de *S. tigrina* en el sur de México para hacer tortillas, el cultivo de la especie como una planta comestible no se conoce, y el hábito fugaz y flor pendulosa de *Stanhopea* la elimina de ser una planta con valor económico o florístico. Aunque el género es de amplia distribución, orquidófilos en todos los países consideran sus especies como curiosidades botánicas de poco valor comercial.

3.7. CULTIVO Y ASPECTOS DE MANEJO DEL GENERO STANHOPEA

Burberry (1895) sugirió el mes de marzo (en Inglaterra) como un buen tiempo para "replantar" los ejemplares de *Stanhopea*. En un escrito posterior (1898), el mismo autor anota que en sus cestos, las *Stanhopeas* deben crecer al fondo, sin trozos de barro de cualquier tipo para que las espigas puedan tener su camino libre, y recomienda un medio de cultivo de dos partes; una parte de turba y una parte de musgo. Morgan (1909) sugirió que una vez terminada la floración las plantas deben examinarse y (re)plantarse o cubrirse con un nuevo medio de cultivo. Él citó una "temperatura de

warm greenhouse) during the growing season, with a cooler one once the growths are made up. He noted that they should be given an abundance of water during the growing season, keeping the leaves sprinkled (rinsed) well as members are particularly subject to red spider. Morgan suggested growing these plants in a compost of osmunda fiber, leaves, and a little moss; giving enough room in the baskets to allow for at least two growing seasons, and at rest, just enough water to keep the pseudobulbs plump. Although not mentioned by these authorities, clinical work has shown that successful propagation of *Stanhopea* backbulbs is similar to that for *Cymbidiums*. The method consists of placing the backbulb in (or merely laying it on top of) a bed of sphagnum moss and keeping the moss moist, but not alternately wet and dry. The new shoot sprouts first, followed by root growth.

Rolfe (1911) visited Florence, Italy where the summer climate is hot, dry, and rainless. He observed several *Stanhopea* plants "suspended on wires against a south wall, under a camphor tree (*Cinnamomum camphora*), which provides the necessary shade." He states that "under these conditions they thrive and flower profusely, watering as often as necessary being practically the only treatment they receive." He observed about thirty plants, including *Stanhopea wardii*, *S. oculata*, *S. graveolens*, *S. tigrina*, *S. eburnea*, *S. martiana*, *S. ruckeri*, and others. Rolfe's comments, while relative to southern Italy, provide a useful cultural insight for cultivation of members of this genus in the hot, dry regions of southern Texas and northern Mexico.

Wilson (1928), reviewing *Stanhopea* culture from suggestions in Lindley's 1838-40 *Sertum Orchidaceum*, goes into detail concerning the use (in 1838) of extensive crockery in the potting of *Stanhopea* species, a procedure currently suggested as not only not useful, but—more than likely—harmful to the bud scapes of these penduliform flowering species. Perhaps the best information in the article is the culture given a small damaged plant. The plant was dried off, then potted and given bottom heat. No elaboration was offered regarding its watering schedule, but obviously it was, as is now fairly standard for backbulb propagation, probably a schedule of humidity-only until roots emerged, then sparingly until good root (and later, leaf) development was underway. The article notes that the damaged plant was recovered in a house kept "very hot." By present-day standards this is in the 21-38°C. (70-90°F.) range, but for normal back bulb propagation, a regimen of high humidity and about 27°C. (80°F.) usually suffices.

Myron Kimminach (1957, reprinted 1978) of the Botanical Garden of the University of California (Berkeley), in an extensive article about culturing *Stanhopea* members and allies, goes into great detail about problems encountered (such as pollinators and pests) with *Stanhopea* inflorescences as a result of the use of slatted baskets, pots (modified and otherwise), and osmunda fiber as a potting media. Throughout the article, it never seems to occur to Kimminach to discard all three as counterproductive to good *Stanhopea* culture. Kimminach notes that the serious pests of *Stanhopea* plants in the Berkeley greenhouse appear to be red spider, mealy bugs, and the two-spotted mite, although he does mention that the habit of growing in pots placed on benches provides a good hiding place for slugs which tend to feast on roots and bud tips. Kimminach's solution to the slug problem is to use applications of metaldehyde. For the red spider and mites he advocates malathion with an alternate spray of aramite. He advocates countering the mealy bug problem by removing the papery sheathing around pseudobulbs, which takes away a hiding place for the mealy bugs and provides a neat appearance for the plant as well. The other problem noted by Kimminach is that fungi tend to form on the osmunda fibers in the dark reaches of the pot.

horno" (un invernadero cálido) durante la estación de crecimiento, con una mas fresca, una vez que el crecimiento ha terminado. El hace notar que las plantas deben tener abundante agua durante la etapa de crecimiento; y las hojas deberían de rociarse bien, ya que los miembros de este grupo son particularmente susceptibles al ataque de la araña roja. El sugiere su producción en un abono de fibra de osmunda, hojas, y un poco de musgo, dando suficiente espacio en los cestos para permitir por lo menos dos estaciones de crecimiento, y en la etapa de reposo, sólo aplicar suficiente agua para mantener los pseudobulbos turgentes. Aunque no se menciona por estas autoridades, el trabajo clínico ha mostrado que la propagación exitosa de pseudobulbos viejos de *Stanhopea* es similar a la de *Cymbidium*; poniendo el pseudobulbo viejo en (o meramente poniéndolo encima de) una cama de musgo (*sphagnum moss*) y manteniendo el musgo húmedo, pero no alternadamente húmedo y seco. El nuevo retoño crece primero, seguido por crecimiento de la raíz.

• Rolfe (1911) visitó Florencia, Italia donde el clima de verano es caliente, seco, y sin lluvias. El observó varias plantas de *Stanhopea* "suspendidas en alambres contra la pared sur, bajo un árbol de alcatifor (*Cinnamomum camphora*) que proporciona la sombra necesaria." El declara que "bajo éstas condiciones ellas crecen y florecen prósperamente, regando tan frecuentemente como sea necesario, es prácticamente el único tratamiento que ellas reciben." El observó cerca de treinta plantas, incluyendo *Stanhopea wardii*, *S. oculata*, *S. graveolens*, *S. tigrina*, *S. eburnea*, *S. mariana*, *S. ruckeri*, y otras. Los comentarios de Rolfe, aun cuando están hechos sobre el sur de Italia, proporcionan una visión útil para el cultivo de los miembros de este género en regiones similares (calientes y secas) del sur de Texas y norte de México.

Wilson (1928), al revisar las sugerencias de Lindley de *Sertum Orchidaceum* de 1838-40 sobre el cultivo de *Stanhopea*, entró en detalle acerca del uso (en 1838) de trozos de barro en el medio de cultivo de las especies de *Stanhopea*, un procedimiento actualmente sugerido no sólo como inútil, sino—masque todo—dañino para a los brotes de estas especies de floración penduliforme. Quizás la mejor información en el artículo es el cultivo dado a una pequeña planta dañada. La planta estaba prácticamente seca, entonces se replantó y se le aplicó calor a la base. El calendario de riegos no se modificó, pero obviamente fue, como es ahora bastante normal para la propagación de bulbo viejo (sin hojas), probablemente un calendario de aplicación de humedad solamente hasta que las raíces emergieran, entonces riegos moderados hasta que permitieran un buen desarrollo radicular (y después foliar). El artículo menciona que la planta dañada se recuperó manteniéndola en un ambiente de alta temperatura. En las normas actuales esto está en el rango de los 21-38°C. (70-90°F.) pero para la propagación normal de bulbo viejo, normalmente es suficiente un régimen de alta humedad y aproximadamente 27°C. (80°F.).

Myron Kimmach (1957, reimpresso en 1978) del Jardín Botánico de la Universidad de California (Berkeley), en un artículo extenso sobre el cultivo de los miembros de *Stanhopea* y sus afines, se refiere en gran detalle a los problemas encontrados (tales como polinizadores y plagas) con las inflorescencias de *Stanhopea* como resultado del uso de cestos con trozos de barro o cerámica (modificadas y de otras maneras), y fibra de osmunda como medio de cultivo. A lo largo del artículo, parece que Kimmach nunca contempla la posibilidad de desechar todos los tres métodos como contraproducentes al cultivo correcto de *Stanhopea*. Kimmach señala que las plagas importantes de plantas de *Stanhopea* en el invernadero de Berkeley parecen ser la araña roja, el piojo harinoso, y el ácaro de dos manchas, aunque menciona que la práctica de cultivar en macetas puestas sobre bancos proporciona un buen lugar donde ocultarse para los caracoles los cuales se dan un festín en las raíces y brotes nuevos. La solución de Kimmach al problema de los caracoles es usar aplicaciones de metaldehido. Para la araña roja y los ácaros es partidario del uso de Malathion® con una aplicación alterna de Aramite®. Él es partidario de combatir el problema del piojo harinoso quitando la membrana exterior alrededor de los pseudobulbos, lo cual elimina un lugar donde se pueden ocultar y también mantiene una apariencia limpia para la planta. El otro problema mencionado por Kimmach es que en los rincones oscuros de la maceta tienden a formarse hongos en las fibras de osmunda.

It would appear that problems encountered in the Kimmnach method of culture could be countered by the use of an entirely different method. In this work, better success has been had by lining a wire basket with sphagnum moss and bedding the *Stanhopea* plant in a mix of one part each of *Sphagnum* moss and Douglas Fir bark, two parts chopped tree fern fibers, and dressing off the top with a thin layer of sphagnum moss (Fig. 10). The sparse use of a well-diluted fungicide (Physan-20 or Consan) appears to stop any fungus growth, and the use of a hanging basket eliminates slugs as a problem. Red spider, mealy bugs, and the two-spotted mite have not been a problem. The main consideration when plants are "basketized" in this manner is to guard against excessive drying of the media because it drains promptly when watered. As plant growth progresses, the combination of bark, tree-fern, and sphagnum moss continues to provide nutrition to the plant roots. Fertilizing should be done using very dilute concentrations. It is safer to err on the weak side of fertilizing than to burn roots and foliage with a concentration that is too strong. For vegetative growth, a weak 30-10-10 solution has worked well, easing over to 20-20-20 as the season for bud initiation and inflorescence formation approaches. Obviously, the use of hanging baskets for *Stanhopea* plants is quite different than the classic habit of pots-on-benches, but it has proven to be more pest-free, more attractive, and certainly a more "natural" way to grow these orchids.

Rhodehamel (1994) suggests 185 days as the optimum time for green-capsule-culture harvesting for *S. wardii*, a good beginning point for the harvesting of any *Stanhopea* species or intrageneric hybrids providing the propagator wishes to pursue green-capsule culture instead of propagating with mature dry seed.

In this work, the abbreviations for growing conditions are listed as C-Cool, I-Intermediate, and W or H-Warm. Hawkes (1965) used these abbreviations to refer to average night temperatures during the cool months, as used in this work, these symbols refer to average night temperatures for growing conditions. The genus *Stanhopea* is generally assumed to be "tropical," and therefore desirous of warm (and even hot) growing conditions, but given the elevations from which some members hail, intermediate conditions are preferable, and some may even require rather drastic chilling in order to initiate flowering. As used in this work, "cool" (C) indicates 7-10°C. (45-50°F.), "intermediate" (I) indicates 13-18°C. (55-65°F.), and warm or hot (W or H) indicates 18-21°C. (65-70°F.).

3.8. PRESENT SITUATION

Arditti (1977) cites Poddubnaya-Arnoldi (1964) as noting that membranes of suspensor cells of *Stanhopea* (and other orchid genera) give an intense histochemical reaction for the production of vitamin C, but that the content in ovules varies with the species and time following pollination. Beyond these efforts the phytochemical research literature is sparse regarding this genus.



Fig. 10. C06 *S. oculata*
"basket culture"

PL#290496-5
29 August, 1996

Parecería que los problemas encontrados en el método de cultivo de Kimmnach podrían resolverse con el uso de un método completamente diferente. En éste trabajo, se ha tenido un mejor éxito cubriendo un cesto de alambre con musgo de *Sphagnum* y colocando una planta de *Stanhopea* en una mezcla de una parte de cada uno de musgo sphagnum y corteza de Abeto Douglas, dos partes de trozos de fibras de helecho arborescente, y cubriendo la superficie con una capa delgada de musgo sphagnum (Fig. 10). El uso esparcido de un fungicida bien diluido (Physan-20 o Consan) parece detener cualquier crecimiento del hongo, y el uso de un cesto colgante elimina el problema de los caracoles. La araña roja, el piojo harinoso, y el ácaro de dos manchas no han sido un problema. La principal consideración cuando las plantas se ponen en cestos de esta manera es cuidar sobre todo el secado excesivo de los medios de cultivo porque cuando se riega, el agua y drena rápidamente. Cuando el crecimiento de la planta progresá, la combinación de corteza, helecho de árbol, y el musgo de sphagnum continúa proporcionando nutrición a las raíces de la planta. La fertilización deberá hacerse usando concentraciones muy diluidas. Es más seguro equivocarse con una fertilización débil que quemar raíces y follaje con una concentración demasiado alta. Para crecimiento vegetativo, una solución diluida de fertilizante 30-10-10 ha funcionado bien, cambiando gradualmente a 20-20-20 tan pronto como se aproxima la estación para la iniciación de brotes y formación de inflorescencias. Obviamente, el uso de cestos colgantes para las plantas de *Stanhopea* es bastante diferente del clásico hábito de macetas sobre bancos, pero ha demostrado ser más libre de plagas, más atractivo, y ciertamente una manera más "natural" de cultivar estas orquídeas.

Rhodehamel (1994) sugiere que el tiempo óptimo para la cosecha del "cultivo de cápsula verde" es de 185 días para *S. wardii*, y éste probablemente es un buen punto de partida para la cosecha de cualquier especie de *Stanhopea* o híbridos intragenéricos que proporciona al propagador deseos de proseguir tal tipo de cultivo en vez de propagación con semillas maduras y secas.

En este trabajo, las abreviaciones para las condiciones de cultivo se mencionan como C-Fresco, I-Intermedio, y (H) Cálido. Hawkes (1965) usó estas abreviaturas para referirse al promedio de las temperaturas nocturnas durante los meses frescos. Generalmente se asume que el género *Stanhopea* es "tropical," y por consiguiente necesita condiciones de crecimiento cálidas (e incluso calientes), pero dadas las elevaciones de las que algunos miembros vienen, son preferibles las condiciones intermedias, y algunos miembros pueden requerir heladas bastante drásticas para comenzar la floración. Prácticamente, varios orquidófilos indican: "fresco" (C) indica 7-10°C. (45-50°F.), "intermedio" (I) indica 13-18°C. (55-65°F.), y "cálido o caliente" (W o H) indica 18-21°C. (65-70°F.).

3.8. SITUACION PRESENTE

Arditti (1977) cita a Poddubnaya-Arnoldi (1964) señalando que las membranas de las células suspensoras de *Stanhopea* (y otros géneros de orquídeas) dan una intensa reacción histoquímica para la producción de la vitamina C, pero que el contenido en los óvulos varía con la especie y el tiempo después de la polinización. Mas allá de estos esfuerzos la literatura de investigación fitoquímica referente a este género es escasa.



Fig. 10. C06 *S. oculata* PI#290496-5
"cultivo en canasta" 29 agosto, 1996

The genus is currently receiving little attention from taxonomists. In recent years, the photographic file of the American Orchid Society has increasingly followed the fashion of publicizing new orchid hybrids, but has no botanically useful photographs of members of this genus. Several very good floral photographs were supplied in past years by Kennedy with his various works in the *Orchid Digest*, but the better part of many of the works have no botanically useful illustrations of most members of this genus or are so scattered as to result in no definitive single-place collection available for use of the floral taxonomist. While specific members have been treated in various works, information concerning detailed and complete geographical and elevation range data are non-existent for most of the genus. One may suspect *Stanhopea* species to comprise part of the flora of Argentina, Bolivia, Chile, Paraguay, and Peru, but the botanical literature is sparse with respect to this genus in these countries.

Most orchid species are seldom abundant in any locality. A few plants may be encountered relatively close together, but finding one plant is no guarantee another will be seen within another one or two or even ten kilometers of jungle growth. In addition, in many cases historical data concerning elevations, host plants, and even countries of origin is highly questionable. Orchid species cited in the literature were a very competitive, highly profitable commercial product for foreign commercial firms which obtained plants by employing on-site collectors. It was a common practice among collectors to mislead competitors by, for example, collecting a plant in Peru and stating its location as Mexico. In addition, many species were described from little more than a dried flower collected from an unknown or questionable location. Given the competitive nature of commercial firms, pressures on botanists to describe and publish regarding these new rare species, and communications lags, taxonomic mistakes were a certainty. Many examples could be provided from the orchid literature, but a few serve to illustrate the situation.

Arnold (1928) reports *S. quadricornis* from Central America but no specific country is specified. Williams (1951) locates it as "Mexico (state unknown) and Guatemala." Ames and Correll (1952) note that *S. quadricornis* is distinguished from other Guatemalan specimens by a short pair of crimson horns projecting from the base of the lip just under the column and state they saw no specimens and derived their notes from the description and plate in *Bot. Reg.* 24: t. 5. 1838. Dodson (1963) observes all sources list its location, in English, only as "the Spanish Main" (the high seas route of Spain to the New World) which can be anywhere in Central or northern South America. Additionally, Dodson observed a type specimen from the British Museum and was inclined to believe it was a natural hybrid between *S. wardii* and *S. grandiflora*. Ignoring Dodson's work, Hawkes (1965), reported it from Mexico and Colombia and was accepted blindly by many orchidists. Jenny (1993a) wrote an extensive article on the Stanhopeas of Colombia but does not mention *S. quadricornis*. However, months later Jenny (1993b) published a list of "valid Stanhopeas" listing it without citing a country of origin. ®

Arnold (1928) recorded *S. bucephalus* from Peru and Ecuador and although the long-known name of *S. bucephalus* would be the name for the Colombia and Ecuador species, unfortunately Lindley had chosen as the type a specimen of *Stanhopea oculata* collected by Galeotti near Orizaba in Mexico, erroneously attributed to Ruiz and Pavón, Peruvian collectors, as having been collected in Peru. It was part of the Lambert Herbarium, now housed at the British Museum, is clearly labeled "Maxillaria de Mexico," and has been traced to Galeotti who collected in Mexico at about the same time Ruiz and Pavón worked in Peru. Lindley had attempted to correct the error in the *Botanical Register* (subt. 44) in 1843, and placed a Hartweg specimen, along with the illustration from the *Botanical Register* (t. 24) in 1845, in his herbarium as the type of *Stanhopea bucephalus*, but according to the rules of the ICBN, the name *S. bucephalus* is invalid. Thus Dodson (1975) assigned the next available name taking priority and the plant now bears the name *S. jenishiana*.

Writing of *S. hernandezii* (known at that time as *S. devoniensis*), Arnold (1928) states that "where it was first discovered and by whom is not clearly known, but it has been recorded from Mexico."

El género recibe actualmente poca atención por parte de los taxónomos. En años recientes el archivo fotográfico de la Sociedad Americana de Orquídeas ha seguido cada vez más la moda de publicar nuevos híbridos de orquídeas. Algunas fotografías florales muy buenas fueron proporcionadas en años pasados por Kennedy con sus diversos trabajos en el *Orchid Digest*, pero la mayor parte de los trabajos no poseen ilustraciones botánicamente útiles de la mayoría de los miembros de este género o están tan dispersas que dan por resultado en la carencia de una colección establecida en un lugar definido disponible para el uso de los taxónomos florales. Mientras que algunas especies han sido tratadas en varios trabajos, no existen datos concordantes a información geográfica detallada y completa o rangos de elevación para la mayoría del género. Uno puede sospechar que *Stanhopea* comprende parte de la flora de Argentina, Bolivia, Chile, Paraguay y Perú, pero la literatura botánica es escasa con respecto a este género en estos países.

La mayoría de especies de orquídeas raramente son abundantes en cualquier localidad. Un buen número de plantas pueden encontrarse relativamente cerca una a la otra, pero el encontrar una planta no establece ninguna garantía de que otra se encontrará entre el siguiente kilómetro o dos o diez kilómetros de selva. En muchos casos la información histórica sobre elevaciones, plantas en las cuales crecen, y hasta países de origen son altamente cuestionados. Las especies de orquídeas citadas en la literatura fueron un producto comercial, reddituable, y muy competitivo para firmas comerciales las cuales obtuvieron plantas contratando colectores locales. Una práctica común entre colectores era desviar a sus competidores, por ejemplo al colectar una planta en Perú y reportar su localidad en México. Adicionalmente, muchas especies fueron descritas por un poco más que una flor seca colectada por un desconocido de localidades cuestionables. Dada la naturaleza competitiva de las empresas comerciales, y las presiones sobre los botánicos para describir y publicar en estas nuevas extrañas especies, y fallas en la comunicación, llevaron a errores taxonómicos. Muchos ejemplos pueden ser provistos de la literatura de orquídeas, pero unos pocos sirven para ilustrar la situación presente.

Arnold (1928) reportó *S. quadricornis* de Centro América, pero no especifica ningún país. Williams (1951) la localizó en "México (estado desconocido) y Guatemala." Ames y Correll (1952) notaron que *S. quadricornis* se distingue de otras especies Guatimaltecas solo por un corto par de cuernos colorados que se proyectan desde la base del labio justo debajo de la columna, y declaran que no vieron ejemplares y derivaron sus notas de la descripción y lámina en *Bot. Reg.* 24: t. 5. 1838. Dodson (1963) observó que todas las fuentes de información listan su localidad, en inglés, sólo como "the Spanish Main" (la ruta de la alta mar de España al Nuevo Mundo), la cual puede estar en cualquier lugar de Centro América y del norte de Sur América. Adicionalmente, Dodson observó un tipo de ejemplar proveniente del Museo Británico y se inclinó a creer que era un híbrido natural entre *S. wardii* y *S. grandiflora*. Ignorando el trabajo de Dodson, Hawkes (1965), la reportó de ambos México y Colombia, y fue ciegamente aceptado por muchos orquidistas. Jenny escribió un extenso artículo en las Stanhopeas de Colombia pero no menciona *S. quadricornis*. Sin embargo, meses después, Jenny publicó una lista de "Stanhopeas válidas," sin mencionar país de origen.

Arnold documentó *S. bucephalus* de Perú y Ecuador, y aunque el nombre largamente conocido sería el nombre dado a las especies de Colombia y Ecuador, desafortunadamente Lindley había escogido como tipo un ejemplar de *S. oculata* colectado por Galeotti cerca de Orizaba en México, erróneamente atribuida a Ruiz y Pavón, colectores Peruanos, como si hubiera sido colectada en Perú. Esta fue parte del Herbario de Lambert, ahora alojado en el Museo Británico, está claramente marcada como "Maxillaria de México," y ha sido trazada a Galeotti, quien colectó en México casi al mismo tiempo que Ruiz y Pavón trabajaron en Perú. Lindley intentó a corregir el error en el *Botanical Register* (sub t. 44) en 1843, y puso un ejemplar de Hartweg, junto con la ilustración del *Botanical Register* (t. 24) en 1845, en su herbario como el modelo de *Stanhopea bucephalus*, pero de acuerdo a las reglas de el ICBN, el nombre *S. bucephalus* es inválido. De esta manera, Dodson (1975) asignó el siguiente nombre que toma prioridad y ahora el nombre de la planta es *S. jenishiana*.

Escribiendo sobre *S. hernandezii* (conocida en ese tiempo como *S. devoniensis*), Arnold (1928) estableció que "dónde primero fue descubierta y por quien no es claramente conocido, pero ha estado registrada de México."

S. oculata spp. *ornatissima* (Lem.) Dodson 1972 was established at subspecies rank by Dodson because of a different scent and therefore presumably a different pollinator. Although the pollinator remains unknown Jenny (1993a) publishes as follows: "This variety seems to be endemic to Colombia. The specimen which Dodson used for this reclassification came from the Cordillera Occidental, the altitude and the exact location are not known." As Jenny's work was written in German and translated by another individual for publication in the *Orchid Digest*, it is not clear whether he regards this at subspecies or varietal rank.

S. wardii (Fig. 11) is one of the oldest in the literature and one of the most popular species of this genus. However, misinformation concerning its habitat and confusing it with *S. graveolens* (Fig. 12), a species of Guatemala and Mexico, has caused historical and present-day perplexity. Writers unquestioningly accepting what was written and—worse—repeating it, have added to the problem by cloaking the historical misinformation with their voices of "authority." In addition, the problem has been compounded by hobbyists, commercial vendors and even persons in positions at botanical gardens who have proliferated plants misidentified as to both habitat in nature and incorrect species names! Stated simply, *S. wardii* occurs in nature from

Colombia, Venezuela, Panama and Costa Rica. In nature, it does not occur in Mexico, Guatemala, Belize, Honduras, or El Salvador! It may have invaded southern Nicaragua, but on-site explorations by Hamer, long a resident of Nicaragua and a dependable individual concerning orchid species locations, coupled with critical taxonomy leave such claims highly questionable.

In nature, *S. graveolens* is found in Mexico as far as south as Honduras, but its range does not overlap that of *S. wardii*. It has been confused with *S. wardii* by being hastily "identified" by floral color and a similar fragrance, neither of which taken separately or

merely together qualify as secure taxonomic criteria on which to base a species confirmation.



Fig. 12. *S. graveolens* photo: G. Kennedy

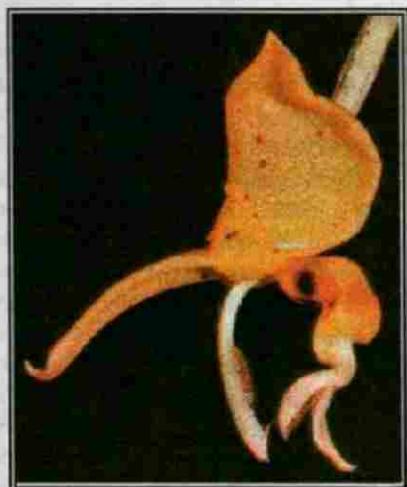


Fig. 11. *S. wardii* photo: G. Kennedy

Many orchid species are extremely closely associated with the substrate, humidity, and other ecological considerations of their locality in nature, but the reputation of orchids as rare and valuable plants persists to the present day. One result is that individuals who would normally ignore a *Cypripedium*, *Govenia*, or *Malaxis* as "just another wildflower" attempt to collect, transplant, and grow it just because it is an orchid. Failing to provide the proper ecological conditions, the plant dies and the myth is enhanced that part of the reason orchids are valuable is that they are hard to grow. Succinctly, historical habitat information regarding orchids is highly questionable and in order to preserve locations from being destroyed by hobbyists or commercially minded individuals, what detailed habitat information that becomes available is closely guarded by specialists and government agencies charged with preservation of not only orchids, but cacti, pitcher plants, and various other medicinal or hallucinogenic properties.

S. oculata ssp. *ornatissima* (Lem.) Dodson 1972 fué establecida como subespecie por Dodson debido a una fragancia diferente y por lo tanto supuestamente un diferente polinizador. Aunque el polinizador todavía es desconocido Jenny (1993a) publicó lo siguiente: "Esta variedad parece ser endémica de Colombia. El ejemplar que Dodson usó para su reclasificación proviene de la Cordillera Occidental, la altitud y la exacta localización se desconocen." Como el trabajo de Jenny fue en alemán y traducido por otro individuo para publicación en el *Orchid Digest*, no está claro si la considera subespecie o variedad.

S. wardii (Fig. 11) es una de las mas antiguas en la literatura y una de las especies mas populares de este género. Sin embargo, información errónea sobre su hábitat y confundiéndola con *S. graveolens* (Fig. 12), especie de Guatemala y México, ha causado una histórica y reciente perplejidad. Los escritores que aceptan sin cuestionar lo que fué escrito y—peor—repiéndolo, han añadido al problema cubriendo la información histórica errónea con sus voces de "autoridad". Además, el problema ha sido complicado por aficionados, comerciantes y hasta personas en posiciones en jardines botánicos quienes reproducirón plantas identificadas erróneamente de acuerdo a ambos hábitat natural y nombres incorrectos de especies! Declarado simplemente, *S. wardii* naturalmente ocurre desde Colombia, Venezuela, Panamá y Costa Rica. Naturalmente, no ocurre en México, Guatemala, Belice, Honduras, o El Salvador! Pudo haber invadido el sur de Nicaragua, pero exploraciones por Hamer, un residente de Nicaragua por muchos años y un individuo confiable en lo que concierne a localidades de especies de orquídeas, acoplado con taxonomía crítica deja tal declaración altamente cuestionable.

Naturalmente, *S. graveolens* se encuentra en México hasta el sur de Honduras, pero su alcance no coincide en parte con *S. wardii*. Ha sido confundida con *S. wardii* siendo rápidamente "identificada" por color floral y fragancia similar, ninguna de las cuales tomadas separadamente o juntas califican como criterios taxonómicos seguros en los cuales basar la confirmación de una especie.

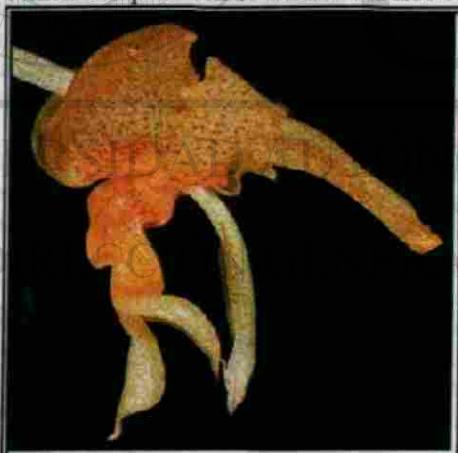


Fig. 12. *S. graveolens* foto: G. Kennedy
de cultivar. Sucintamente, la información histórica del hábitat es altamente cuestionable y para preservar localidades de ser destruidas por aficionados o personas interesadas en su comercio, la información detallada del hábitat que ha sido disponible es cuidadosamente protegida por especialistas y agencias gubernamentales encargadas en la preservación no sólo de orquídeas, si no de cactus, plantas de cántaro, y otras con propiedades medicinales o alucinógenas.



Fig. 11. *S. wardii* foto: G. Kennedy

Muchas especies de orquídeas se encuentran extremadamente juntas asociadas con el sustrato, humedad, y otras consideraciones ecológicas de la localidad natural, pero la reputación de que las orquídeas son raras y valiosas persiste hasta hoy en día. Un resultado es que individuos quienes normalmente ignorarian *Cypripedium*, *Govenia*, o *Malaxis* como "solo otra flor silvestre" intentan colectar, trasplantar, y criarlas sólo porque son orquídeas. Fracasando al proveer las debidas condiciones ecológicas, la planta muere y el mito es realzado que parte de la razón porque las orquídeas son valiosas es que son difíciles de cultivar.

Algunas de las razones de expensas.
2. Los que son realmente geográficamente en las zonas de crecimiento de las flores, dentro del nivel de costa

Due to plant size and the fugacious nature of the flowers, few Stanhopeas are collected, cultivated, hybridized, or commercially propagated, and given a relatively low market demand, few species are imported by commercial firms for the US market. Also, what species actually become commercially available to archivists may or may not be identified as to country of origin. It is relatively common to see a brochure offering the same species for sale under the correct name and as another species under a name relegated to being only a botanical synonym of that same species. Although an occasional judged-and-awarded clone is propagated and seedlings offered for sale, incorrect species identifications are known here as well. In one case a plant of *S. reichenbachiana* was judged, identified and awarded as *S. candida*. This gross misidentification was later incorrectly changed and the plant recorded as *S. grandiflora* in the official awards registry of the American Orchid Society (Fig. 13).

Finally, a determination of the number and classification of western hemisphere orchids is far from complete. Vast areas of Central and South America remain unexplored. Even in Mexico data are scant about actual ranges and elevations of members the orchid family. The most extensive herbarium collection in Mexico is the one formed by Ing. Eric Hagsater and members of the Mexican Orchid Society in the Mexico City area, but the orchid family is sparsely represented in the herbaria of universities in northern Mexico. Soto Arenas (1993) offers 1,300 as a number for the currently known species of orchids in Mexico, but in the herbarium of The Universidad Autónoma de Nuevo León the orchid family is represented by only twelve local terrestrial specimens, the herbarium of the Universidad Autónoma de Antonio Narro displays a similar number. The herbarium at the Facultad de Ciencias Biológicas-Agropecuarias near Fortín, Veracruz has only two *Stanhopea* species on five sheets, and these are all of flowers only; no vegetative material was collected. Orchids are abundant in the southern areas of Mexico, but they are not rare in the northern state of Nuevo Leon. In two volumes devoted primarily to the native orchids of the Continental United States and Canada, Luer (1973, 1975) mentions 32 orchid species in the state of Nuevo Leon, and a single afternoon's exploration near Monterrey in the Sierra Madre a few kilometers West of Horsetail Falls revealed plants of *Govenia superba* and *utriculata*, *Malaxis corymbosa* (Fig. 12), *M. ehrenbergii*, and at least three unidentified species of *Spiranthes*.



Fig. 14. *Malaxis corymbosa*
C38 NL, México 23 July 1998

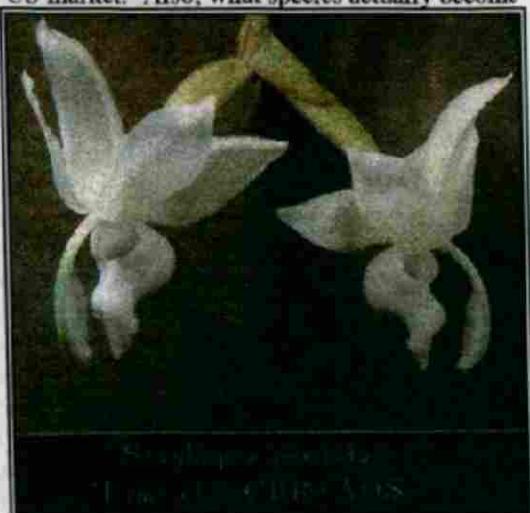


Fig. 13. *S. reichenbachiana* 'Limnick'
photo: Internet 1998

4. OBJECTIVES AND HYPOTHESES:

4.1. OBJECTIVES

1. To determine differences in the epidermal structures of the leaves of different species of the genus *Stanhopea* at the species level.
2. To evaluate the geographic changes of habitat on the epidermal leaf structures at the species level.

Debido al tamaño de la planta y la volátil naturaleza de las flores, pocas *Stanhopeas* son colecciónadas, cultivadas, hibridizadas, o comercialmente propagadas, y dada la baja demanda en el mercado, pocas especies son importadas por empresas comerciales para el mercado estadounidense. También, las especies que se hacen comercialmente disponibles a los orquidistas pueden o no estar identificadas por su país de origen. Es relativamente común ver un folleto ofreciendo las mismas especies en venta bajo el nombre correcto y como otras especies bajo un nombre relegado al ser sólo un sinónimo botánico. Aunque ocasionalmente un clon evaluado y premiado es propagado y se ofrecen plantones en venta, las especies están identificadas erróneamente. En un caso, una planta de *S. reichenbachiana* fue evaluada, identificada, y premiada como *S. candida*. Esta identificación errónea fue después incorrectamente cambiada y la planta registrada como *S. grandiflora* en el registro de premios oficiales de la Sociedad de Orquídeas de América (Fig. 13).

Finalmente, una determinación del número y clasificación de orquídeas del hemisferio occidental está lejos de estar completa. Vastas áreas de Centro y Sud América permanecen inexploradas. Aún en México los datos acerca de los rangos

actuales y elevaciones de los miembros de la familia de las orquídeas son escasos. La mayor colección de herbario en México es la formada por el Ingeniero Eric Hagsater y miembros de la Sociedad Mexicana de Orquídeas en la Ciudad de México. Soto Arenas (1993) propuso 1300 como el número de especies de orquídeas conocidas actualmente en México, pero en el herbario de la Universidad Autónoma de Nuevo León la familia de las orquídeas está representado solo por 12 ejemplares terrestres locales, y el herbario de la Universidad Autónoma Antonio Narro de Saltillo, Coahuila muestra un número similar. El herbario en la Facultad de Ciencias Biológicas-Agropecuarias cerca de Fortín, Veracruz contiene solo dos especies de *Stanhopea* en cinco muestras, y todas son sólo de flores: el material vegetativo no fué colectado. Sin embargo las orquídeas no son raras en los estados del norte de México. En dos volúmenes dedicados primariamente a las orquídeas nativas de los Estados Unidos Continentales y Canadá, Luer (1973, 1975) mencionó 32 especies de orquídeas en el estado de Nuevo León, y una exploración de una sola tarde cerca de Monterrey en la Sierra Madre a pocos kilómetros al oeste de la cascada "Cola de Caballo" reveló plantas de *Govenia superba* y *G. utriculariata*, *Malaxis corymbosa* (Fig. 14), *M. ehrenbergii*, y al



Fig. 14. *Malaxis corymbosa*
C38 NL, México 23 julio 1998

menos 3 especies no identificadas de *Spiranthes*.

4. OBJETIVOS E HIPOTESIS

4.1. OBJETIVOS

1. Determinar diferencias en las estructuras epidérmicas de la hoja de diferentes especies del género *Stanhopea* al nivel de especie.
2. Evaluar los cambios geográficos en las estructuras epidérmicas de las hojas sobre el nivel de una especie.



Fig. 13. *S. reichenbachiana* 'Limick'
foto: Internet 1998

3. To determine whether floral structures exhibited by each species change as a function of the geographic distribution and epidermal leaf characteristics.
4. To demonstrate whether variations exhibited by floral structures of a species as a function of its geographical distribution is accompanied by vegetative structural variations.
5. To apply the results of this investigation to the genus *Stanhopea* and other orchid genera.
6. To use the epidermal characters (including those of the stomata) in species identification.

4.2. HYPOTHESES

1. Differences in epidermal leaf structures of different species of the genus *Stanhopea* are statistically sufficient to define its species.
2. A species exhibiting the same floral structures over a wide geographical distribution shows the same epidermal leaf cell characters over that range.
3. Research conclusions applicable to this genus are applicable to other genera.

5. METHODS

5.1. DISTRIBUTION OF THE GENUS

The study included 61 specimens of the genus *Stanhopea*. Six species from three other genera (*Govenia*, *Malaxis*, and *Spiranthes*) were also investigated. The *Stanhopea* group was represented by 33 species (60% of the genus), 4 man-made hybrids, and two unknowns; one from Huatusco, Mexico; the other of unknown origin. Correlating leafprint data with that from plants confirmed by flowering, identification predictions were made for six *Stanhopea* specimens received as unknowns (C03, 26, 33, 53, 77, and 83). Samples C93 and C98 (same species) are discussed as unknowns. Six members of three other genera (*Govenia*, *Malaxis*, and *Spiranthes*) were also investigated. The same methodology was applied to C37, a member of genus *Govenia*, but unknown as to species.

Vegetative material was obtained personally, provided by individuals, or obtained from commercial sources (Table 2). Although some species names are listed more than once in this table, no species or hybrid material represents the same clonal material.

Table 2. Vegetative material used in this study with the origin of each plant

C#	Specimen	Origin	C#	Specimen	Origin	C#	Specimen	Origin
01	<i>S. saccata</i>	Unknown	24	<i>S. jenischiana</i>	Colombia	52	<i>S. connata</i>	Unknown
02	<i>S. saccata</i>	Guatemala	25	<i>S. grandiflora</i>	Brazil	53	<i>S. hernandezii</i>	Mexico
03	<i>S. insignis</i>	Colombia	26	<i>S. nigra</i>	Unknown	54	<i>S. madourensis</i>	Colombia
04	<i>S. hernandezii</i>	Mexico	27	<i>S. candida</i>	Colombia	55	<i>S. longipes</i>	Colombia
05	<i>S. ocellata</i>	Panama	28	<i>S. connata</i>	Colombia	56	<i>S. Chocolate Chip</i>	Hybrid
06	<i>S. ocellata</i>	Mexico	29	<i>S. haselowiana</i>	Peru	57	<i>S. lietzei</i>	Unknown
07	<i>S. nigra</i>	Mexico	30	<i>S. impressa</i>	Colombia	58	<i>S. panamensis</i>	Panama
08	<i>S. graveolens</i>	Mexico	31	<i>S. playuceras</i>	Colombia	59	<i>S. tigrina</i>	Mexico
09	<i>S. graveolens</i>	Mexico	32	<i>S. posadae</i>	Colombia	60	<i>S. Love Potion</i>	Hybrid
10	<i>S. marianna</i>	Mexico	33	<i>S. nigra</i>	Guatemala	61	<i>S. Assidensis</i>	Hybrid
11	<i>S. intermedius</i>	Mexico	35	<i>G. auriulatum</i>	Mex; NL	62	<i>S. wardii</i>	Unknown
12	<i>S. wardii</i>	Guatemala	36	<i>Spiranthes sp ign</i>	Mex; NL	63	<i>S. Penelope</i>	Hybrid
13	<i>S. wardii</i>	Colombia	37	<i>G. superba</i>	Mex; NL	64	<i>S. graveolens</i>	Unknown
14	<i>S. wardii</i>	Unknown	38	<i>M. corymbosa</i>	Mex; NL	65	<i>S. eburnea</i>	Unknown
15	<i>S. nigrovioletacea</i>	Mexico	39	<i>Spiranthes sp ign</i>	Mex; NL	67	<i>S. grandiflora</i>	Unknown
16	<i>S. insignis</i>	Colombia	45	<i>S. saccata</i>	Mexico	69	<i>S. radios</i>	Mexico
17	<i>S. costaricensis</i>	Costa Rica	46	<i>S. reichenbachiana</i>	Colombia	77	<i>S. ocellata</i>	Mex; Mich
18	<i>S. pozoi</i>	Colombia	47	<i>S. embreei</i>	Ecuador	83	<i>S. amoena</i>	Unknown
19	<i>S. shuttleworthii</i>	Colombia	48	<i>S. inodora</i>	Unknown	86	<i>G. superba</i>	Mex; NL
20	<i>S. tricornis</i>	Colombia	49	<i>S. hernandezii</i>	Unknown	88	<i>S. maculosa</i>	Mex; Son
21	<i>S. reichenbachiana</i>	Colombia	50	<i>S. pulla</i>	Panama	93	<i>S. sp ign Huatusco</i>	Mex; Ver
22	<i>S. eburnea</i>	Brazil	51	<i>S. intermedia</i>	Mexico	94	<i>S. nigra '331 ER'</i>	Mex; Ver
23	<i>S. cornuta</i>	Guatemala				98	<i>S. sp ign Huatusco II</i>	Mex; Ver

3. Determinar las estructuras florales que exhibe cada especie en función del distribución geográfico y caracteres epidérmicos.
4. Demostrar si las variaciones exhibidas en la estructura floral de cada especie son acompañadas por variaciones estructurales vegetativas en función de su distribución geográfica.
5. Postular una posible aplicación de los resultados de este investigación sobre el género *Stanhopea* a otros géneros de orquídeas.
6. Uso de las características epidérmicas (inclusive de las estomáticas) en apoyo a la identificación de especies.

4.2. HIPOTESIS

1. Diferencias en las estructuras epidérmicas de la hoja de diferentes especies del género *Stanhopea* son estadísticamente suficientes para definir sus especies.
2. Una especie que exhibe las mismas estructuras florales sobre un amplio rango geográfico muestra los mismos caracteres epidérmicos de la hoja sobre ese rango.
3. Conclusiones de investigación aplicables a este género son aplicables a otros géneros.

5. METODOS

5.1. DISTRIBUCION DEL GENERO

El estudio comprende 61 ejemplares del género *Stanhopea*. Seis especies de otros tres géneros (*Govenia*, *Malaxis*, and *Spiranthes*) fueron también investigados. El grupo *Stanhopea* estuvo representado por 33 especies (60% del género), 4 híbridos inducidos por el hombre, y dos ejemplares desconocidos; uno procedente de Huatusco, México; el otro de origen desconocido. Correlacionar los datos de las importas con los de plantas confirmadas por floración, permitió predicciones de seis ejemplares de *Stanhopea* recibidos como desconocidos (C03, 26, 33, 53, 77, y 83). Los ejemplares C93 y C98 se discutieron como desconocidos. Seis miembros de otros tres géneros (*Govenia*, *Malaxis*, and *Spiranthes*) también se investigaron. La misma metodología se aplicó a C37, un miembro del género *Govenia*, de especie desconocida.

El material vegetal ha sido obtenido personalmente, provisto por individuos, u obtenido de fuentes comerciales (Cuadro 2). A pesar de que algunas especies se mencionan más de una vez en este cuadro, ningún material, especie o híbrido representa el mismo material clonal.

Cuadro 2. Material vegetativo usado en este estudio con el origen de cada planta.

CF	Especimen	Origen	CF	Especimen	Origen	CF	Especimen	Origen
01	<i>S saccata</i>	Desconocido	24	<i>S jenischiana</i>	Colombia	52	<i>S connata</i>	Desconocido
02	<i>S saccata</i>	Guatemala	25	<i>S grandiflora</i>	Brasil	53	<i>S sp ign.</i>	México
03	<i>S sp ign.</i>	Colombia	26	<i>S sp ign.</i>	Desconocido	54	<i>S mudicariana</i>	Colombia
04	<i>S hernandezii</i>	México	27	<i>S candida</i>	Colombia	55	<i>S longipes</i>	Colombia
05	<i>S oculata</i>	Panamá	28	<i>S connata</i>	Colombia	56	<i>S Chocolate Choco</i>	Híbrido
06	<i>S oculata</i>	México	29	<i>S haseltoniana</i>	Perú	57	<i>S lietzei</i>	Desconocido
07	<i>S agrina</i>	México	30	<i>S impressa</i>	Colombia	58	<i>S panamensis</i>	Panamá
08	<i>S graveolens</i>	México	31	<i>S platyceras</i>	Colombia	59	<i>S Agrina</i>	México
09	<i>S graveolens</i>	México	32	<i>S porrectae</i>	Colombia	60	<i>S Love Potion</i>	Híbrido
10	<i>S martiana</i>	México	33	<i>S sp ign.</i>	Guatemala	61	<i>S Assideensis</i>	Híbrido
11	<i>S intermedia</i>	México	35	<i>G utriculata</i>	Méx; NL	62	<i>S wardii</i>	Desconocido
12	<i>S wardii</i>	Guatemala	36	<i>Spiranthes sp ign.</i>	Méx; NL	63	<i>S Pelecype</i>	Híbrido
13	<i>S wardii</i>	Colombia	37	<i>G sp ign.</i>	Méx; NL	64	<i>S graveolens</i>	Desconoc.
14	<i>S wardii</i>	Desconocido	38	<i>M corymbosa</i>	Méx; NL	66	<i>S eburnea</i>	Desconoc.
15	<i>S nigrovioletacea</i>	México	39	<i>Spiranthes sp ign.</i>	Méx; NL	67	<i>S grandiflora</i>	Desconoc.
16	<i>S insignis</i>	Colombia	45	<i>S saccata</i>	México	69	<i>S sp ign.</i>	México
17	<i>S costaricensis</i>	Costa Rica	46	<i>S reichenbachiana</i>	Colombia	71	<i>S sp ign.</i>	Méx; Mich
18	<i>S pogoi</i>	Colombia	47	<i>S embreei</i>	Ecuador	83	<i>S sp ign.</i>	Desconoc.
19	<i>S shuttleworthii</i>	Colombia	48	<i>S inodora</i>	Desconocido	86	<i>S superba</i>	Méx; NL
20	<i>S micans</i>	Colombia	49	<i>S hernandezii</i>	Desconocido	88	<i>S maculosa</i>	Méx; Son
21	<i>S reichenbachiana</i>	Colombia	50	<i>S pulla</i>	Panamá	93	<i>S sp ign Huatusco</i>	Méx; Ver
22	<i>S eburnea</i>	Brasil	51	<i>S intermedium</i>	México	94	<i>S tigrina '331 ER'</i>	Méx; Ver
23	<i>S eburnea</i>	Guatemala				96	<i>S sp ign Huatusco II</i>	Méx; Ver

Specimen C03 was personally obtained in Colombia in 1975. Others were provided for this study by dependable individuals (C04, 05, 07, 08, C13, 15, 20, 21, 27, 45, 46, 47, 50, 51, 53, 54, 55, 58, 69, 88). The origin of commercially obtained material (C06, 09, 10, 11, 16, 17, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33) is noted where it could be determined with absolute certainty. Other plants provided through commercial sources were identified when they flowered but as the exact country of origin could not be learned with certainty, they were recorded as unknown. The leafprints of C77 *S. oculata* are from a specimen collected in Chiapas, Mexico, but no other habitat information is available. Leafprints of specimens 35, 36, 37, 38, 39, 86, 93, 94, and 98 were obtained personally in situ.

Stanhopea specimens were utilized as they became available regardless of the source. Data obtained from unknown species were statistically checked against similar data obtained from species confirmed by flowering. Subsequent flowering by the unknown validated the statistically-derived prediction. As mean epidermal leaf cell areas vary within a certain range within each species, the more samples of each species that become available, the more dependable becomes the identification confirmation of unknowns within a given statistical range. Also, as a statistically derived hierarchy depends on a significant sample of a complete genus, as many species of the genus were tested as was possible.

Historically, specific ecological information such as elevation, substrate, and flowering period is seldom given in the literature. Nevertheless, review of more than 215 references discloses 2500m as the maximum elevation reported for any *Stanhopea* (Dodson and Dodson, 1980), with most reports from sea level to 1000m, and indicating these plants preferring a temperature range between 16 and 35°C. (60-95°F.). For purposes of this study, it has been sufficient to establish the locality of most species to within a particular country.

5.2. PREPARATION OF BOTANICAL MATERIAL AND USE OF CLEANING AGENTS

The method used to obtain leafprints produces the best results if the leaf is clean. Whether under greenhouse or field conditions most impurities may be eliminated by washing both leaf surfaces with water, gently wiping it with a teflon kitchen sponge, and allowing it to air-dry for a few minutes. If the plant has been exposed to an inordinate amount of dust or residue, it may be useful to employ a very mild detergent, followed by rinsing and allowing the leaf to dry.

As analyses of epidermal cells are done using photomicrographs taken at 80 \times , removal of a glossy cuticle may be necessary to allow cells to become clearly seen. A specimen of *Anthurium* was washed with white vinegar, bleach, "wax remover," acetone, xylol, and ammonia, but all were ineffective. However, ordinary gasoline offered satisfactory results.

5.3. FIELD AND GREENHOUSE PHASE

The following method was used to obtain leafprints of *Stanhopea* plants. Clean white Styrofoam "popcorn" is dissolved in xylol until the liquid is about the consistency of warm syrup. This solution is applied to a clean leaf surface over an area of $\pm 2 \times 5$ cm. It will generally dry in two or three minutes. A short strip of clear transparent tape is then applied evenly and firmly over the film, but not with enough pressure to damage the leaf. Leafprints thus taken of cell surfaces are non-invasive and do not damage the leaf. The tape is peeled from the leaf and gently pressed onto a glass slide. Under field conditions, where washing may be impractical, the leaf may be cleaned by applying the xylol solution, allowing it to dry, and then removing the film (along with any artifacts) by use of the transparent tape as described before. The xylol solution is then reapplied for the leafprint to be retained. If it is desired to retain the slide permanently, a thin glass coverslip may be applied with its longitudinal edges taped. This not only ensures that the leaf print is held flat, but affords some protection to the transparent tape itself.

The slide should be marked as to which leaf surface, adaxial or abaxial, was printed.

El ejemplar C03 fue obtenido personalmente en Colombia en 1975. Otros fueron provistos para este estudio por individuos confiables (C04, 05, 07, 08, C13, 15, 20, 21, 27, 45, 46, 47, 50, 51, 53, 54, 55, 58, 69, 88). El origen de material obtenido comercialmente (C06, 09, 10, 11, 16, 17, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33) se señaló cuando se pudo determinar con certeza absoluta. Otras plantas obtenidas de fuentes comerciales fueron identificadas cuando florecieron, pero el país exacto de origen no pudo ser identificado con seguridad y están señalados como desconocidos. Las improntas de la hoja de C77 *S. oculata* son de un ejemplar registrado en Chiapas, México, pero no se dispone de otra información de su hábitat. Las improntas de las hojas de los ejemplares 35, 36, 37, 38, 39, 86, 93, 94, y 98 fueron obtenidas *in situ*.

Los ejemplares de *Stanhopea* disponibles se utilizaron sin importar su procedencia. La información obtenida de ejemplares (desconocidos) fue estadísticamente revisada en comparación con información similar obtenida de especies confirmadas por floración. La floración subsecuente del deacnulado verificó la predicción de especie derivada estadísticamente. Como el promedio de las células epidérmicas varía dentro de cierto límite en cada especie, entre más ejemplos de cada especie se hacen disponibles, más confiable se hace la confirmación de especies desconocidas dentro de un rango estadístico. También, derivar una jerarquía estadística depende de una muestra significativa de un género completo, se sometieron a prueba tantas especies como fue posible.

Históricamente, la literatura rara vez incluye información ecológica específica como elevación, sustrato, y periodo de floración. Sin embargo, la revisión de más de 215 referencias muestra 2500m como la elevación máxima reportada para cualquier *Stanhopea* (Dodson y Dodson, 1980), con la mayoría de los reportes desde el nivel de mar hasta 1000m e indicando que estas plantas prefieren temperaturas entre 16-35° C. (60-95° F.). Para propósitos de este estudio, ha sido suficiente el establecer la localidad de la mayoría de las especies dentro de un país en particular.

5.2. PREPARACION DE MATERIAL BIOLOGICO Y USO DE AGENTES DE LIMPIEZA

El método usado para obtener improntas foliares producen mejores resultados si la hoja está limpia. Ya sea en invernadero o bajo condiciones de campo la mayor parte de las impurezas se pueden eliminar lavando ambas superficies foliares con agua, tallándolas con una esponja "teflón" de cocina y dejando secar al aire por unos minutos. Si la planta ha sido expuesta a una cantidad extraordinaria de polvo o residuos, puede ser útil aplicar cualquier detergente suave.

Al analizar las células epidérmicas usando fotomicrografías tomadas a 80x es posible que sea necesario eliminar una cutícula lustrosa para observar claramente las células. La superficie foliar de un *Anthurium* fué lavado con vinagre blanco, cloro "removedor de cera", acetona, xilol y amoniaco, pero todos fueron ineficaces. Sin embargo, la gasolina ordinaria ofreció resultados satisfactorios. ®

DIRECCIÓN GENERAL DE BIBLIOTECAS

5.3. FASE DE CAMPO E INVERNADERO

El siguiente método se utilizó para obtener improntas foliares de plantas de *Stanhopea*. Se disuelve un poco de unicel o "nieve seca" en xilol hasta que el líquido obtenga la consistencia de un jarabe ligero. Esta solución se aplica a una superficie foliar limpia sobre un área de ±2 x 5cm. Generalmente se secará en dos o tres minutos. Una tira de cinta adhesiva transparente "clara" se aplica uniforme y firmemente sobre la película, pero sin demasiada presión para no dañar la hoja. Las tomas de improntas foliares de la superficie celular no son perjudiciales para la planta. La cinta adhesiva se desprende de la hoja y suavemente adherida a un portaobjetos. En condiciones de campo, donde el lavado puede ser impráctico, se puede limpiar la hoja aplicando la solución de xilol, permitiéndole secarse, y entonces eliminar la película (incluida cualquier impureza) con el uso de la cinta adhesiva como se describió anteriormente. Se repite entonces la aplicación de xilol para obtener la huella foliar definitiva. Si se desea un montaje permanente, se puede aplicar un cubreobjetos con sus extremos adheridos con cinta adhesiva. Esto no solamente permite que la huella permanezca plana, sino que ofrece protección a la cinta transparente. En el montaje deberá identificarse qué superficie fué tomada (haz o envés).

Using a felt writer or other marking pen, a small "H" or an "E" (haz: Spanish for adaxial, or envéz for the abaxial or underside of the leaf) is normally marked. The letter is followed by six digits to indicate the date, always in the order as day-month-year (e.g. H020496/7 = Haz; 02 April, 1996; /7 the seventh specimen done on that date). This writing should be small and done on the glass surface where it can be removed when the slide's permanent label is placed. In the field, the strip of transparent tape or slide, if prepared *in situ*, is now placed in a slide box or small envelope, and a small plant tag gently tied to the plant with the same set of numbers (H&E020496/7) penciled on both sides or imprinted with a stylus. It is imperative that the location be clearly stated on either the envelope or a card within the envelope for relocating the plant at a later date.

5.4. LABORATORY PHASE

5.4.1. ORGANELLE MEASUREMENTS

The microscope slide was photographed at X80 magnification using a Microscopics compound microscope with a trinocular head on which was mounted an Nikon HFM photo system. An indexing lens should be inserted in the field lens assembly of the photosystem to print index mark on each photomicrograph and enable accurate measurements to be taken directly from the print. A Reichert-Jung micrometer slide of 2mm divided into units of 0.01mm was used to establish the lens correction factor for the magnification of each objective lens. Photomicrographs thus taken displayed the indexing scale, enabling the investigator to measure the area of each of the cells. Twenty five cells were selected randomly from at least two separate photomicrographs.



Fig. 16. Abaxial cells and stomata.

approximation closest to the correct cell area. Adaxial and abaxial epidermal cells are measured the same way (Fig. 15.). Stomata guard and subsidiary cells were measured similarly. Of the four stomata complexes displayed in the abaxial cell group (Fig. 16), the uppermost one is extracted, enlarged, and figured to show typical dimensions for the pair of guard cells and a representative subsidiary cell (Fig. 17).

Black and white or color film, may be used and it may be processed privately or commercially. Kodak Tungsten film (EI 160) was used for color transparencies. The photographic film used was Kodak Gold 100, from which oversized prints were made. The photomicrographs produced yield a working area of 90 x 140mm. Measurements were taken from each photograph of adaxial, abaxial, guard (both as a unit) and subsidiary cells, using calipers to obtain lengths and widths. The number of trichomes (adaxially and abaxially) on each photomicrograph was noted on the specimen data sheet, as was the number of stomata.



Fig. 15. Epidermal cell vectors.



Fig. 17. Stomata complex.

Con un marcador, normalmente se identifica con una "H" o una "E" (haz: adaxial en inglés y envéz: abaxial en inglés) después de la letra se utilizan seis dígitos para indicar la fecha, *siempre* en el orden de día, mes, y año (ejemplo: H020496/7 = haz; 02 de abril, 1996; /7 el séptimo ejemplar hecho en esa fecha). Esta identificación deberá ser pequeña y sobre la superficie del vidrio, donde pueda ser eliminada cuando se coloque la etiqueta permanente del montaje. En el campo, si la cinta transparente adhesiva o el montaje es preparado *in situ*, se coloca en una caja para portaobjetos o en un sobre pequeño. La planta se identifica con una etiqueta en la cual se incluyen los mismos datos del montaje (H&E020296/7), impresos por ambos lados, con lápiz o marcador. Es imperativo que la localidad sea mencionada claramente en el sobre o en una tarjeta dentro del sobre, con el fin de localizar la planta en fecha posterior.

5.4. FASE DE LABORATORIO

5.4.1. MEDIDAS DE LOS ORGANELOS

La impronta fué fotografiada a una amplificación de 80X, usando un microscopio compuesto Microscopics con una cabeza trinocular sobre la cual fué montado un sistema de fotografía Nikon HFM. Se deberá insertar una regilla micrométrica en el objetivo del sistema de fotografía para imprimir en cada fotografía dicha graduación y obtener medidas precisas directamente de la fotografía. Un micrómetro Reichert-Jung de 2mm dividido en unidades de 0.01mm se usó para establecer el factor de corrección para la amplificación de cada lente objetivo. Por lo tanto cada fotomicrografía mostrará dicha escala graduada, permitiendo al investigador medir el área de cada una de las células. Se seleccionaron veinticinco células al azar de al menos dos microfotografías independientes.

Las medidas del largo y ancho de las células individuales se anotan en la columna correspondiente de la hojas de cálculo. No toda las células epidérmicas son rectangulares, de esta forma las medidas del largo y ancho son tomadas individualmente para dar una mas cercana aproximación al área correcta de la célula. Las células epidérmicas del haz y el envéz se miden en la misma forma (Fig. 15). Las células guardia y las subsidiarias del complejo estomático se miden

similarmente. De los tres complejos estomáticos mostrados en el grupo de las células del envéz (Fig. 16), el superior se ha extraído y aumentado para mostrar las dimensiones típicas del par de células guardia y una célula subsidiaria (Fig. 17).

Las fotos pueden tomarse en película blanco y negro o de color, procesada privada o comercialmente. Se seleccionó la película Kodak Tungsten (El 160) para transparencias en color. Se usó película fotográfica Kodak Gold 100, de la cual se hicieron impresiones amplificadas comercialmente. Las fotomicrografías muestran un área de trabajo de 90 x 140mm. De cada foto se obtuvieron medidas del haz, envéz, guardia (ambas como una unidad) y células subsidiarias, usando un compás de precisión para medir la longitud y anchura. El número de tricomas (haz y envéz) en cada fotomicrografía se anota en la hoja de datos del ejemplar así como el número de estomas.

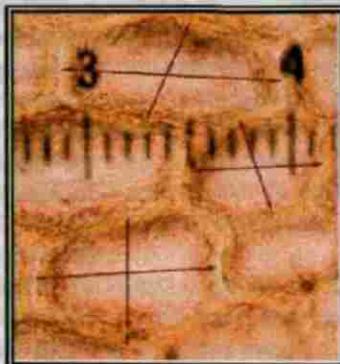


Fig. 15. Vectores de medidas de las células epidérmicas.



Fig. 16. Células del envéz.



Fig. 17. Complejo estomático

5.4.2. MEASUREMENT PROCEDURE

The viewed magnification is 100X [a 10X field lens, multiplied by the 10X eyepieces]. The photographed magnification is 80X (a 10X field lens multiplied by an 8X photo eyepiece). Calibration of the ocular micrometer or indexing lens utilizes a glass stage micrometer slide with 2mm divided into 200 increments. To compute the size of photographed objects in millimeters, the establishment of a magnification correction factor is necessary. Adjusting the stage micrometer glass slide with the indexing slide installed matched 0.7mm (700 μ) of the micrometer glass slide with 6.5 index increments (6.5i) of the indexing slide. Dividing 0.7mm of the measured slide by the matching number of increments (6.5i) of the indexing slide established this magnification correction factor at 0.1076923 ($0.7 \div 6.5$). However, 1mm = 1,000 microns (μ). Therefore $0.7\text{mm} = 700$ microns (μ), and each index unit (1.0i) which shows on the photograph equals 107.6923μ . Thus the area of a cell with a length of 0.62i and a width of 0.4i as measured from the photograph, can be calculated as follows:

$$(0.62i \times 107.6923) (0.4i \times 107.6923) = (66.77\mu) (43.076\mu) = 2876.214\mu^2 \quad (2876.21\mu^2).$$

Using the result of $2876.214\mu^2$ as an example, if a random sample of a given number of cells yields that quantity as a mean cell area, the number of cells in a square millimeter may be calculated as follows:

$$1\text{mm} = 1000\mu, \text{ therefore } 1 \text{ square millimeter} = (1000\mu)(1000\mu) = 1,000,000\mu^2, \\ \text{and } 1,000,000\mu^2 \div 2876.214\mu^2/c = 347.679 \text{ cells per square millimeter} \quad (347.679c/\text{mm}^2).$$

Cell print photomicrographs are obtained randomly from the glass slide, utilizing a minimum of two photographs for each leaf surface of each specimen for analysis. The photographs are visually divided laterally by the indexing numbers, with each half-photograph division further divided equally. From each of the eight quadrants thus obtained, three cells are randomly selected and measured. The elongated portion of the photograph is arbitrarily taken as the cell length, with the narrower portion of the photograph taken as the cell width. The length and width of selected cells are measured, and these measurements recorded in a table. When twenty four cells are thus measured a twenty fifth cell is selected randomly, measured, and added to the list. The lengths and widths of cells measured are entered on a spreadsheet and converted to microns. Each length and width is multiplied to list the cell area, and the cell areas summed, giving the area total, the mean area, and standard deviation of areas summed for each of the 25 samples.

The first column of the spreadsheet portion numbers from 1 to 25 and indicates the row number of each specific measurement taken and calculation(s) derived from it. Columns are provided for measurements corresponding to the index on the particular photograph for the length and width of adaxial epidermal cells, abaxial epidermal cells, the combined length and width of the two guard cells, and individual subsidiary cells, with the computer converting each index measurement into microns for each measurement. The computer also multiplies each individual length and width in microns to provide an area product. The computer sums the individual micron measurements and areas, provides a readout of the sum (total), mean, and standard deviation, and calculates the total number of adaxial and abaxial cells per square millimeter. Also provided is the ratio of average adaxial cell area to average abaxial cell area, the ratio of the average length to width of the combined stomata guard cells, and the length-to-width ratio of the average of subsidiary cells.

The individual specimen spreadsheets are computer-linked providing for a combined summary sheet of the data totals for each specimen as well as allowing for the ranking of specimens in ascending or descending order of area, standard deviation, guard cell ratio or subsidiary cell ratio. Entering individual micron measurements into a statistical program (SAS 6.12; ANOVA) provides a computer-generated analysis-of-variance readout ($p = 0.05$) for each specimen in relation to the areas being analyzed.

5.4.2. PROCEDIMIENTO DE LAS MEDIDAS

El poder de amplificación es 100X (un objetivo de 10X multiplicado por un ocular de 10X), mientras que la amplificación fotografiada es de 80X (un objetivo de 10X multiplicado por un ocular de fotografía de 8X). Para computar el tamaño de los objetos fotografiados en milímetros es necesario el establecimiento de un factor de corrección de amplificación. Se ajustó el portaobjetivo en la platina, con el micrómetro instalado apareció 0.7mm (700 μ) con un número par de incrementos (6.5i) del micrómetro portaobjetivo y se estableció este factor de corrección a 0.1076923 (0.7 + 6.5). Sin embargo un milímetro equivale a mil micras (μ). Por lo tanto 0.7mm = 700 micras (μ), y cada unidad de graduación (1.0i), la cual se muestra en la fotografía igual a 107.6923 micras. Por lo tanto el área de una célula con una longitud de 0.62i y una anchura de 0.4i tal como se midió de la fotografía, puede ser calculado como sigue:

$$(0.62i \times 107.6923) (0.4i \times 107.6923) = (66.77\mu) (43.067\mu) = (2876.214\mu^2) \quad (2876.2\mu^2).$$

Usando el resultado de 2876.2 micras cuadradas como un ejemplo, si una muestra al azar de un número dado de células da tal cantidad como resultado promedio del área celular, el número de células en un milímetro cuadrado puede calcularse como sigue:

$$1 \text{ mm} = 1,000\mu, \text{ por lo tanto un milímetro cuadrado} = (1,000\mu) (1,000\mu) = 1,000,000\mu^2, \\ \text{y } 1,000,000\mu^2 \div 2876.214\mu^2/c = 347.679 \text{ células por milímetro cuadrado} \quad (347.68 c/mm^2).$$

Se obtuvieron fotomicrografías de improntas celulares al azar del montaje, utilizando un mínimo de dos fotografías por cada superficie foliar de cada ejemplar para análisis. Las fotografías se dividieron visual y lateralmente según las divisiones graduadas, con cada sección de media fotografía dividida a la mitad. De cada uno de los ocho cuadrantes así obtenidos se seleccionaron y midieron al azar tres células. La porción alargada de la fotografía se toma arbitrariamente como la longitud de la célula, con la porción más angosta de la fotografía como el ancho de la célula. El largo y el ancho de las células seleccionadas se midieron y esas medidas fueron registradas en un cuadro. Después de que las 24 células fueron medidas la 25ava célula fue tomada al azar, medida y agregada a la lista. Las longitudes y las anchuras de las células medidas se capturaron en una hoja de cálculo convertidas a micras. Cada longitud y anchura es multiplicada para proporcionar el área celular, y las áreas celulares sumadas, dieron el área total, de lo cual se calcula el promedio y la desviación estándar de las áreas sumadas para cada una de las 25 muestras.

La primer columna de la porción de la hoja de cálculo enumera del 1 al 25, la cual indica el número de línea de cada medida específicamente tomada y cálculos derivados de ella. Las columnas están proporcionadas por medidas correspondientes al índice en la fotografía particular para la longitud y ancho de las células epidérmicas del haz, del envés, la longitud y ancho combinado de las dos células guardia y las células subsidiarias individuales, consecutivamente la computadora convierte cada medida en micras para cada medida. La computadora también multiplica cada largo y ancho individuales en micras para proporcionar el área producto. La computadora suma las medidas individuales en micrones y áreas, proporciona una lectura de la suma (total), promedio y desviación estándar y calcula el número total de células por milímetro cuadrado del haz y del envés. También suministra el radio del área celular promedio del haz para promediar el área celular del envés, la proporción del promedio de la longitud con el ancho de las células guardia de los estomas y la proporción de la longitud y ancho del promedio de las células subsidiarias.

Las hojas de cálculo de los ejemplares individuales están enlazadas por la computadora proporcionando una hoja de resumen combinando los datos totales para cada ejemplar también como permitiendo la jerarquización de ejemplares en orden ascendente o descendente del área, desviación estándar, proporción de células guardia o proporción de células subsidiarias. Capturar las medidas individuales en micrones en un programa estadístico (SAS 6.12; ANOVA) proporcionó una lectura de análisis de varianza generado por la computadora ($p = 0.05$) para cada ejemplar con relación a las áreas analizadas.

Individual or groups of standard normal curves can be printed from the data gathered. A Macintosh SE/30 computer was initially employed, subsequently augmented by a Power Tower Pro 225, using a Microsoft Excel 5.0a spreadsheet application.

When received in the collection, an orchid is assigned a computer number (e.g. C01, C12) in addition to other pertinent data. Cell areas from the test specimens were entered in a computer program and subjected to an analysis of variance, with the plant's C-number as part of the computer data presented. Compilation of the data in the personal computer added the species or hybrid name of the plant.

The top portion of each data table contains the computer number (C#) assigned that specimen, the specimen name, plant number (Pl#), and countries of origin reported in the literature (Table 3). If the country of origin of the particular specimen is confirmed, it is indicated after the name of the specimen (e.g. Brl! = Brazil, confirmed). Below the name-line are the organ categories investigated; indicating the lengths, widths, and areas. Under each dimension are the measurements taken from the photomicrographs, with measurements computer-multiplied to give the area of that cell in square microns (μ^2). Amplifying information relative to cell size relationships, stomata, and numbers of adaxial and abaxial trichomes for that specimen is included below each specimen table. The standard normal curve for each organ is included on the same sheet, below the ancillary information.

Table 3. Top part of sample table.

C16 S. angustifolia (Brl!) PB#29496-8 - Brasil(!), Colombia, Ecuador, Las Guyanas, Peru, Venezuela																				
Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiaria (Subsidiary Cells)											
#	Largo (L) [μ]	Ancho (A) [μ]	Área [μm ²] Índice	Largo (L) [μ]	Ancho (A) [μ]	Área [μm ²] Índice	Largo (L) [μ]	Ancho (A) [μ]	Área [μm ²] Índice	Largo (L) [μ]	Ancho (A) [μ]	Área [μm ²]								
1	0.89	86.15	0.45	48.46	4175.15	0.48	51.69	0.50	55.85	2783.43	0.46	43.08	0.20	21.54	927.81	0.45	48.46	0.45	48.46	2348.52
2	0.77	77.54	0.60	64.62	5010.18	0.70	75.38	0.52	56.00	4221.54	0.46	43.08	0.15	16.15	695.86	0.45	48.46	0.30	32.31	1565.68
3	1.09	107.69	0.80	86.15	9278.11	0.46	64.62	4175.15	0.46	43.08	0.36	32.31	1591.72	0.40	43.68	0.35	37.69	1623.67		

For ease of delineation, the mean total of each area column has been assigned a color to match that of the respective curve provided with the tabulation table for each specimen (red: adaxial, green: abaxial; blue: guard cells; and yellow: subsidiary cells) (Table 4).

Table 4. Lower part of the sample table.

23	0.90	96.92	0.45	48.46	4697.04	0.70	75.38	0.42	45.23	3409.70	0.35	37.69	0.25	16.92	1014.79	0.40	43.08	0.20	21.54	927.81
24	0.70	75.38	0.55	59.23	4465.09	0.50	55.85	0.45	48.46	2609.47	0.30	32.31	0.13	16.15	521.89	0.40	43.08	0.20	21.54	927.81
25	0.75	86.77	0.60	64.62	5218.93	0.50	53.85	0.50	53.85	2899.41	0.25	26.92	0.20	21.54	579.88	0.45	48.46	0.30	32.31	1565.68
Suma	253.08	172.31	14381.06		183.08		147.54		9519.58		0.80	96.92	0.60	64.62	2116.27		134.42		75.38	3421.18
Promedio	8.43	57.44	471.03		61.03		49.18		3097.40		0.36	32.31	0.20	21.54		44.87		25.13	1140.43	

Below the specimen table are amplifying remarks. These include a repeat of the adaxial and abaxial epidermal cell means; the number of adaxial and abaxial cells per square millimeter, and proportions of adaxial-to-abaxial cells and length-to-width average ratios of guard and subsidiary cells (Table 5).

Table 5. Additional observations as shown in the sample table.

Promedio del área de las células del haz	3097.40 micras cuadradas	322.85 células/mm cuadradas
Promedio del área de las células del envés	2219.28 micras cuadradas	450.60 células/mm cuadradas
El promedio de las células del haz es	1.40 veces el promedio de las células del envés	
El promedio de las células guardia es	1.51 veces el promedio del ancho	
El promedio del largo de las celulas guardia es	2.05 veces el promedio del ancho	

The standard normal curve for each parameter investigated is figured below the tabular data and its additional information, thus presenting all statistical data relative to that specimen on a single sheet. The curves are respectively figured in the same color as the means highlighted in the table (Fig. 18).

Se pueden imprimir curvas normales estándar individuales o de grupos sobre de los datos reunidos. Inicialmente se utilizó una computadora Macintosh SE/30 y subsecuentemente aumentado con una Power Tower Pro 225 utilizando una hoja de cálculo Microsoft Excel 5.0a.

Al recibir una orquídea en la colección se le asigna un número de cómputo (ejemplo CO1, C12) además de otros datos pertinentes. Las áreas celulares de los ejemplares examinados se capturaron en un programa de computadora y se sujetaron a un análisis de varianza con el numero de planta "C" como parte de los datos de cómputo presentados. Una recopilación de los datos en la computadora personal agregó el nombre de la especie o híbrido de la planta.

La parte superior de cada cuadro de datos contiene el número de cómputo (C#) asignado a cada ejemplar, el nombre del ejemplar, el número de planta (PL#) y los países de origen reportados en la literatura (Cuadro 3). Si el país de origen del ejemplar en particular es confirmado, este se indica después del nombre del ejemplar (e.g. Br! = Brasil, confirmado). Debajo de la línea del nombre están las categorías del órgano investigado; indicando la longitud el ancho y el área. Debajo de cada dimensión están las medidas tomadas de las fotomicrografías, con medidas multiplicados por la computadora para dar el área de esa célula en micras cuadradas (μ^2). En la parte inferior del cuadro de cada ejemplar se incluye la información adicional referente a las relaciones del tamaño de las células, estomas y número de tricomas del haz y del envéz. Se incluye la curva normal estándar para cada órgano en la misma hoja, debajo de la información auxiliar.

Cuadro 3. Parte superior del cuadro de las muestras.

C16 S insignis (Brl!) Pl.290496-8 Brasil), Colombia, Ecuador, Los Guyanas, Perú, Venezuela																				
#	Células del Higo (Abaxial Cells)			Células del Envéz (Abaxial Cells)			Células Generales (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a) Índice	Ancho (A _a) Índice	Área [μ^2]	Largo (L _e) Índice	Ancho (A _e) Índice	Área [μ^2]	Largo (L _g) Índice	Ancho (A _g) Índice	Área [μ^2]	Largo (L _s) Índice	Ancho (A _s) Índice	Área [μ^2]								
1	0.80	86.15	0.45	48.46	4175.15	0.48	51.69	0.50	53.85	2783.43	0.40	43.69	0.20	21.54	927.81	0.45	48.46	0.45	48.46	23.48.52
2	0.72	72.54	0.60	56.62	5018.18	0.70	75.38	0.52	56.60	4721.54	0.48	33.09	0.15	16.15	695.86	0.45	48.46	0.30	32.31	1565.68
3	1.00	107.69	0.80	86.15	9278.11	0.60	64.62	0.60	64.62	4175.15	0.40	43.69	0.30	32.31	1391.72	0.40	43.08	0.35	37.69	1423.67

Para una fácil distinción, al promedio total de cada columna de área se le ha asignado un color el cual corresponde a la curva respectiva proporcionada por el cuadro de cada ejemplar (rojo: haz; verde: envéz; azul: células guardia; y amarillo: células subsidiarias) (Cuadro 4).

Cuadro 4. Parte inferior del cuadro de las muestras.

23	0.90	76.97	0.45	48.46	4697.04	0.70	75.38	0.42	45.22	3409.70	0.35	37.69	0.25	26.92	1014.79	0.40	43.08	0.20	21.54	927.81
24	0.70	73.32	0.35	39.23	4465.09	0.30	53.85	0.45	48.46	2669.47	0.30	32.31	0.15	16.15	321.89	0.40	43.08	0.20	21.54	927.81
25	0.75	80.77	0.60	64.62	5218.93	0.50	53.85	0.50	53.85	2899.48	0.25	26.92	0.20	21.54	579.88	0.45	48.46	0.30	32.31	1565.68
Suma	253.05	172.31	14581.06		183.08		187.54	39.18.58	0.90	36.92	8.60	58.62	2116.57		134.62		75.18	3421.39		
Promedio	8.436	57.44	484.67		61.03		49.19		0.30	37.31	0.20	21.54		44.87		25.13	1140.31			

Debajo del cuadro del ejemplar se encuentran observaciones adicionales. Estas incluyen una repetición de los promedios de las células epidérmicas de haz y del envéz; el número de células por milímetro cuadrado del haz y del envéz y la proporción de las células del haz y envéz y la relación promedio del largo y el ancho de las células guardia y células subsidiarias (Cuadro 5).

Cuadro 5. Observaciones adicionales como se muestra en el cuadro de muestra.

Promedio del área de las células del haz	3097.40 micras cuadradas	322.85 células/mm cuadradas
Promedio del área de las células del envéz	2219.28 micras cuadradas	450.60 células/mm cuadradas
El promedio de las células del haz es	1.40 veces el promedio de las células del envéz	
El promedio de las células guardia es	1.51 veces el promedio del ancho	
El promedio del largo de las células guardia es	2.05 veces el promedio del ancho	

La curva normal estándar para cada parámetro investigado se ilustra debajo de los datos tabulados y su información adicional, presentando entonces todos los datos estadísticos relativos al ejemplar en una sola página. Las curvas son ilustradas respectivamente con el mismo color que se resaltan los promedios en las tablas (Fig. 18).

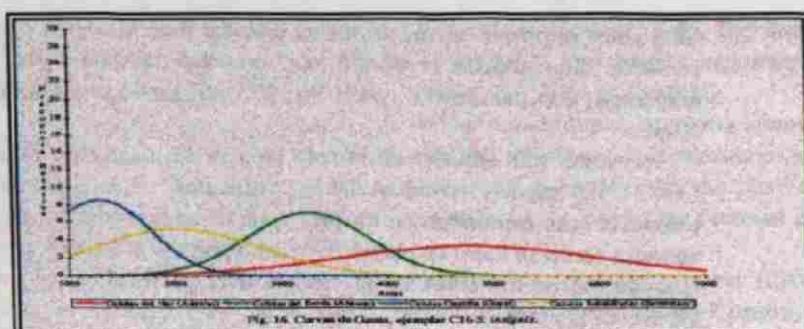


Fig. 18. Normal standard curves of an individual sample as shown on data sheet.

5.5. MODIFICATIONS OF THE TECHNIQUE

Stoddard (1965) originally developed the cellulose acetate technique for the identification of alfalfa, marigolds, and chrysanthemums, and Petroski (1965) applied it to hybrid orchid plants. In both publications, the dried cellulose acetate film is removed by forceps and dry-mounted on a microscope slide. Identification is attempted by the traditionally subjective method of comparing and contrasting surface features, and attempting to describe them sufficiently to differentiate them. The technique utilized in this study modifies the Stoddard-Petroski print-taking by using a xylostyrofoam solution as print material and transparent tape to remove and retain the print. Using this modification, the leafprint is afforded the protection of the transparent tape on top as well as that of the glass slide. Thus the leafprint is less subject to scratches and contaminants embedding in the leafprint material itself.

This study differs from the Stoddard-Petroski protocol in another, more critical, aspect. Stoddard and Petroski merely attempted to describe what was readily seen while this study takes a new approach to the identification of species by measuring epidermal components and subjecting them to a statistical treatment to arrive at conclusions valid within a pre-set degree of probability.

5.6. EXPERIMENTAL DESIGN AND STATISTICAL ANALYSIS

An analysis of variance was utilized in each determination with area as the dependent variable in all cases. The SAS statistical package used as a computerized statistical program was Release 6.12 for windows published by the SAS Institute, Inc. of Cary, NC, USA. The results of the computer program were transferred to diskettes which were read by the Macintosh system employed for presentation of the data in its final form (Annex III). For each of the four organelle systems investigated (adaxial and abaxial epidermal cells, guard cells, and subsidiary cells) the same SAS System program was employed and the initial summary was given by the program using a General Linear Models procedure. In all cases, 60 degrees of freedom and $\rho = 0.05$ was to be applied for *Stanhopea* samples, with the comparable $n - 1$ degrees of freedom as appropriate for analyses of other genera.

Known *Stanhopea* specimens were to be compared statistically and data from individual adaxial and abaxial epidermal leaf cells, pairs of guard cells, and individual subsidiary cells were to be checked against each of these confirmed species using a separate computer run of the analysis of variance procedure for each organelle investigated. Samples were to be listed by C-number with the lower confidence limit, difference between means, and upper confidence limit given for each, ordering the data as the mean area of each sample related respectively to the other mean areas.

The same data obtained from unknown *Stanhopea* samples was then to be compared statistically ($\rho = 0.05$) with the previously correlated data from known species of the same genus, and predictions were to be made regarding the identification of each unknown. The validity of each prediction concerning an unknown sample was to be checked by the identification of that sample when it subsequently flowered. Samples from other genera were to be investigated in a like manner, but separately from those of the genus *Stanhopea*.

6. RESULTADOS

6.1. ASPECTOS GENERALES

El género está presente desde Sud América, América Central, y México. Las áreas celulares epidérmicas del haz y del envéz de todas las especies primitivas son grandes y según como decrece el promedio de las áreas celulares en la jerarquía las especies están colocadas en un orden general de aquellas identificadas por sus flores como primitivas hasta aquellas similarmente identificadas como avanzadas. Este orden de primitivo a avanzado tiene correlación con tres grupos generales los cuales están, *sensu lato*, respectivamente sombreadas de azul, verde y amarillo (Fig. 19). Dado que la literatura referente a la localización de las orquídeas oscila de pobre a, en algunos casos históricos, absolutamente incorrecta esta localización geográfica describe sólo una aproximación de las áreas en las cuales el género es reportado mediante fuentes confiables. Aún en estas áreas, la mayoría de las plantas de *Stanhopea* se reportan desde el nivel del mar hasta los mil metros de altura. La mayor elevación reportada en la literatura se da solamente como "20-2500m" (Dodson y Dodson, 1980), para las plantas de *S. impressa* en Ecuador. A pesar de que personalmente se han observado plantas de *Stanhopea* creciendo con otras especies Colombianas a la altura de los 2500m (Ferry, 1975, sin publicar) se sospecha que esta es probablemente cercana a la máxima altura a la que se puede esperar ver estas plantas en la naturaleza.

Un resumen de datos para cada una de las 61 muestras de *Stanhopea* se presenta con todas las otras muestras en orden descendiente de cada Número de Cómputo de la muestra (Cuadro 7). Los datos de las muestras confirmadas de *Stanhopea* permitieron que las plantas recibidas como "desconocidas" fueran comparadas estadísticamente con especies confirmadas mediante flores. Los datos de las células epidérmicas combinadas del haz y el envéz para todas las muestras, de muestran especies agrupadas con especies afines y además ofrecen un patrón para el género entero. Dos secciones de los datos celulares epidérmicos del haz y el envéz han sido igualados como un cuadro individual mostrando a las especies de *Stanhopea* en orden descendiente de acuerdo a sus respectivas áreas celulares del haz y el envéz (Cuadro 8). Los datos de los dos ejemplares de Huatusco (C93 y C98) no se incluyen en el Cuadro 8 ya que actualmente no se tiene certeza de que estas plantas representen una nueva especie, un híbrido natural o sean poliploides. El Cuadro 8 ha sido dividido en tres secciones verticales representando las áreas geográficas mencionadas en la Fig. 19.

El promedio del área celular de la epidermis foliar del haz y el envéz resume que ambas muestran similar jerarquía de especies (aunque no idéntica) variando de áreas celulares grandes a pequeñas (Cuadro 8). Estas jerarquías se correlacionan con las observaciones de Fowlie (1967) y la dispersión global de las orquídeas inferida por Ossian (1994) e infieren decisivamente que este género evolucionó en la parte Ecuatorial de América del Sur especiaron de acuerdo a su dispersión hacia las latitudes del norte de México. Este patrón de dispersión esta dividido en tres grupos generales mostrados en las subdivisiones verticales del cuadro. Cada grupo se correlaciona con el área geográfica general como mostrada en la Fig. 19. Las especies primitivas del género (*S. reichenbachiana*, *S. embreei*, *S. platyceras*, *S. grandiflora*, *S. pulla*, *S. pozoi*, and *S. candida*) todas están dentro de América del Sur.

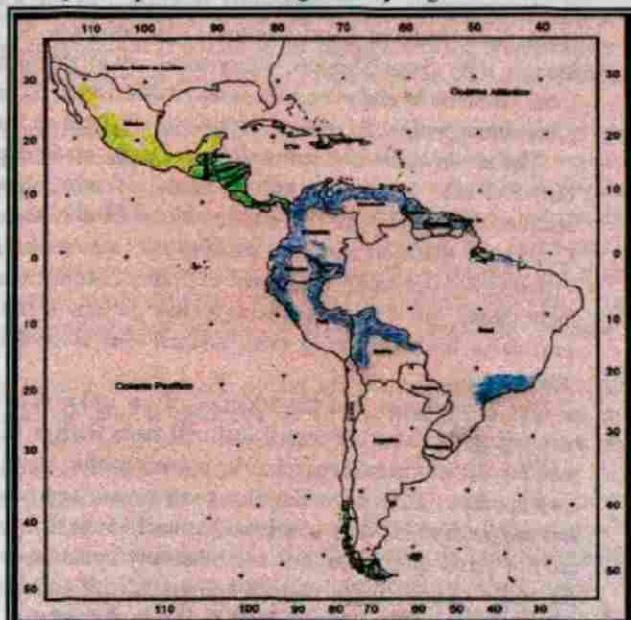


Fig. 19. Áreas geográficas aproximadas del género *Stanhopea* en Sud América, América Central, y México.

The geographical ordering has been done by large-to-small cell areas with the understanding that a species known near the geographical dividing lines may occasionally be found in a neighboring niche close to but beyond the specific country or area in which the literature reports it. For example, *S. costaricensis* is known as far south as Panama and as far north as southern Guatemala, but not from Mexico. In contrast, *S. radicans*, *S. maculosa*, and *S. mortiana* are known only from Mexico. *S. graveolens* is predominantly from Mexico but has been reported from Guatemala and even Honduras (Rölfe 1893; Kennedy 1975; Bechtel et al. 1992). One South American species, *S. tigrina*, is known all the way into Mexico.

The mean epidermal leaf cell areas of *S. oculata* place it within the Central American group, but it is also pandemic; known from a few scattered locations in northern South America to southern Mexico. At the southern end of the hierarchy, *S. reichenbachiana* is found only in Colombia while at northern extreme, *S. intermedia* is found only in Mexico. Clearly, a rank ordering by declining epidermal cell areas cannot correlate perfectly with politically established boundaries, but Table 8 presents a clear pattern of the evolutionary expansion of this genus which correlates with declining both adaxial and abaxial epidermal leaf cell areas, incrementally by species.

The hypothesis that the identity of an unknown species could be statistically determined by comparing its mean epidermal leaf cell areas with a sufficient number of species already defined as such by their flowers proved to be correct within the limits of the epidermal leaf cell area range of each species. Thus several plants received as "unknowns" were analyzed, their identities predicted, and the predictions later confirmed as each plant flowered. However, epidermal cell areas of species are not fixed quantities, but are relatively constant within a narrow range for each species. This generally allows for a correct species identification confirmation, but overlapping with closely related species is possible. Thus it will be found that the identity of a species may be narrowed to tell with certainty within only a few choices within the limits of very few species.

While most study samples were from the genus *Stanhopea* a few other orchid genera were also investigated. Although they provided only six samples, size differences of mean adaxial and abaxial cell areas were measured and comparisons made between species of the same genus. A prediction regarding the identity of one unknown (C37), based on mean cell area statistical similarities and differences with already-flowering species of the same genus, was confirmed by seeing the plant flower, *in situ*, a year later. These results support the hypothesis that results and conclusions obtained from the *Stanhopea* members apply similarly to other orchid genera.

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El ordenamiento geográfico ha sido hecho por áreas celulares de grandes a pequeñas con el entendimiento que una especie conocida cerca de la línea de división geográfica puede encontrarse ocasionalmente en un nicho cercano mas allá del país específico o área en el cual la literatura lo reporta. Por ejemplo, *S. costaricensis* se conoce desde Panamá hasta el sur de Guatemala, pero no hasta México. En contraste, *S. radicans*, *S. maculosa*, y *S. martiana* son conocidas solamente en México. *S. graveolens*, es predominantemente de México pero se ha reportado desde Guatemala y aun en Honduras (Rölfe, 1893; Kennedy, 1975; Bechtel et al., 1992). Una especie Sud Americana, *S. tigrina* se conoce hasta México.

El promedio de las áreas celulares de la epidermis foliar de *S. ocularis* la coloca dentro del grupo de América Central, pero además es pandémica; encontrándose desde unas cuantas localidades esparsas en la parte Norte de América del Sur hasta el Sur de México. En el extremo sur de la jerarquía, *S. reichenbachiana* se encuentra solamente en Colombia mientras en el extremo Norte *S. intermedia* se encuentra solamente en México. Claramente, un rango de orden decreciente de las áreas celulares epidémicas no puede correlacionar perfectamente con fronteras políticas establecidas, pero el Cuadro 8 presenta un claro patrón de la expansión evolutiva de este género el cual se correlaciona con el orden descendente de las áreas celulares foliares epidémicas del haz y del envés, con incrementos por especie.

La hipótesis de que la identidad de una especie desconocida podría ser determinada estadísticamente por comparación del promedio de sus áreas de células epidémicas en un número suficiente de las especies definidas como tales por sus flores comprobadas como dentro del límite de rangos para dichas especies. Así se analizaron varias plantas recibidas como "desconocidas", sus identidades fueron predichas, y las predicciones confirmadas posteriormente cuando cada planta floreció. Sin embargo, las áreas de las células epidémicas no son cantidades fijas, sino relativamente constantes dentro de un rango angosto para cada especie. Esto generalmente permite la confirmación de una identificación correcta de la especie, pero es posible una yuxtaposición con especies cercanamente relacionadas. Por tanto, se encontrará que la identidad de una especie puede ser constreñida con certeza dentro de los límites de muy pocas especies.

En tanto que la mayoría de las muestras estudiadas fueron del género *Stanhopea*, también se investigaron algunos otros géneros de orquídeas. Aunque hubo sólo seis muestras, las diferencias de tamaño de las áreas de las células se midieron y compararon entre especies del mismo género. Una predicción acerca de la identidad de un desconocido (C37), basada en similitudes y diferencias estadísticas con especies del mismo género ya en flor, se confirmaron al ver las flores, *in situ*, un año después. Estos resultados confirman la hipótesis de que las conclusiones obtenidas de miembros de *Stanhopea* aplican similarmente a otros géneros de orquídeas.

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Table 6. Summary table of all samples used in this investigation.

C#	Species	Avg Area	Adj cells	AdjStdDev	Avg Area	AvgCell	AvgStdDev	Avg/Avg	CCArea	GCSdDev	GChw	SSArea	SS StdDev	SSLw
01	<i>S. saccata</i>	3097.40	322.85	675.48	2219.28	450.60	583.79	1.40	1476.94	286.51	1.51	2024.48	704.80	2.05
02	<i>S. saccata</i> (Guti)	3040.90	328.85	732.53	2219.09	450.64	413.71	1.37	1264.14	339.48	1.40	2133.04	1109.53	1.48
03	sp ign. <i>S. insignis</i> (Colf)	4769.92	209.65	969.85	3247.80	307.90	621.54	1.47	1993.45	215.54	1.24	1900.39	655.69	1.62
04	<i>S. hernandezii</i> (Mex)	2782.83	359.35	687.43	2096.11	477.07	443.39	1.33	1291.47	158.24	1.34	1397.28	329.58	1.53
05	<i>S. ocellata</i> 'Eye Doc' (Pmat)	4123.24	242.53	1103.11	2732.08	366.02	524.93	1.51	1476.80	151.79	1.28	1581.22	716.36	1.27
06	<i>S. ocellata</i> (Mex)	4173.52	239.61	1240.10	2747.85	363.92	717.38	1.52	1554.22	187.90	1.34	1632.02	823.79	1.48
07	<i>S. tigrina</i> (Mex)	4259.18	234.79	852.13	2857.66	349.94	700.88	1.49	919.92	260.27	1.42	2126.08	631.11	1.50
08	<i>S. graveolens</i> (Mex)	3380.43	295.82	878.21	2372.18	421.55	682.81	1.43	1467.43	199.12	1.27	2859.74	4301.08	1.82
09	<i>S. graveolens</i> (Mex)	3288.62	304.08	872.76	2309.55	432.98	600.76	1.42	1518.74	166.98	1.23	1400.99	408.39	1.60
10	<i>S. maritima</i> (Mex)	3443.85	290.37	861.02	2608.63	383.34	514.27	1.32	1215.20	228.60	1.44	1627.29	891.22	1.32
11	<i>S. intermedia</i> (Mex)	2691.30	371.57	586.08	2060.50	485.38	651.90	1.31	1318.93	143.69	1.40	2085.25	564.51	1.11
12	<i>S. wardii</i> 'Dorzen'	4603.10	317.24	1071.84	3546.56	281.96	1217.37	1.30	1302.88	248.89	1.31	2100.33	728.42	1.47
13	<i>S. wardii</i> (Colf)	4594.98	217.63	1194.49	3526.38	283.58	758.40	1.30	1568.32	282.31	1.38	1440.43	297.77	1.48
14	<i>S. wardii</i>	4660.02	214.59	1158.82	3570.86	280.04	887.75	1.31	1343.93	292.83	1.05	2001.75	641.75	1.28
15	<i>S. nigroviolacea</i> (Mex)	3129.27	319.56	892.38	2263.86	441.72	590.48	1.38	1137.87	258.48	1.29	1602.38	886.17	2.02
16	<i>S. insignis</i> (Bril)	4780.59	209.18	1207.17	3251.84	397.51	570.29	1.47	1287.34	460.87	1.40	2019.38	774.35	1.17
17	<i>S. cyaneocinctus</i> (Cra)	3705.30	269.88	543.03	2648.90	377.52	610.02	1.40	1427.67	277.13	1.17	1997.20	626.00	1.40
18	<i>S. pozoi</i> (Colf)	4891.09	204.45	1007.89	2991.96	334.23	737.80	1.63	1520.17	326.69	1.47	1492.10	407.94	1.68
19	<i>S. shumardiorum</i> (Colf)	4377.18	228.46	1156.08	2808.95	356.01	756.62	1.36	1334.66	166.64	1.20	2016.36	683.02	1.42
20	<i>S. uncinis</i> (Colf)	4532.35	220.64	1166.20	3555.51	281.25	652.70	1.27	1181.80	145.28	1.05	1813.87	732.12	1.26
21	<i>S. reichenbachiana</i> (Colf)	5623.69	177.82	1540.34	3766.63	265.49	659.86	1.49	1337.21	173.22	1.26	1295.46	483.91	1.54
22	<i>S. evonyma</i> (Bril)	4498.03	222.32	794.55	3726.32	268.36	1328.05	1.21	1419.09	360.07	1.10	2346.20	959.54	1.14
23	<i>S. ecorrua</i> (Guti)	3837.05	260.62	1475.60	2662.31	375.61	801.96	1.44	1450.68	261.26	1.24	2065.54	831.96	1.21
24	<i>S. jenischiana</i> (Colf)	4368.36	228.92	824.01	2899.41	344.90	957.87	1.51	1360.17	325.76	1.11	2653.54	706.42	0.93
25	<i>S. grandiflora</i> (Bril)	4816.54	207.62	1493.20	3714.49	269.22	614.10	1.30	1222.81	102.47	1.17	1004.59	466.20	2.07
26	sp ign. <i>S. tigrina</i> (Colf)	4220.42	236.94	805.00	2856.17	350.12	734.29	1.48	1284.68	247.57	1.25	2159.94	924.67	1.30
27	<i>S. candida</i> (Colf)	4856.62	205.90	1200.78	2790.16	358.40	768.86	1.74	1355.76	192.28	1.31	1584.00	494.55	1.25
28	<i>S. comata</i> (Colf)	4713.00	212.18	878.44	3213.80	311.16	723.05	1.47	1477.35	268.49	1.14	2003.84	879.68	1.25
29	<i>S. hesslowiana</i> (Perl)	4215.97	237.19	898.67	3556.07	281.21	907.44	1.19	1471.04	221.49	1.36	2658.26	1251.00	1.29
30	<i>S. impressa</i> (Colf)	4307.50	232.15	962.07	3119.53	320.56	511.66	1.38	1072.09	278.58	1.39	1228.61	322.03	1.79
31	<i>S. platyceras</i> (Colf)	5266.02	189.00	1066.47	3355.66	298.00	698.51	1.57	1875.38	221.46	1.15	1972.53	392.27	1.28
32	<i>S. posadae</i> (Colf)	4336.35	230.61	982.74	3537.93	282.65	739.38	1.23	1371.30	165.93	1.36	1861.42	454.88	1.31
33	sp ign. <i>S. ugrina</i> (Guti)	4233.55	236.21	865.20	2816.88	355.00	815.48	1.50	1537.75	183.44	1.34	1483.57	346.95	1.23
35	<i>Govenia uriculata</i> (NLS)	2918.52	342.64	558.03	2134.47	468.50	616.26	1.37	1843.14	362.41	1.03	605.58	175.83	2.28
36	<i>Speranthes sp ign.</i> (NLS)	11600.14	111.48	3470.34	6162.38	162.28	1423.13	1.88	1731.57	204.57	1.24	1620.42	572.02	2.24
37	<i>Govenia superba</i> (NLS)	4835.56	206.80	683.75	3568.46	280.23	732.37	1.36	1692.65	261.20	1.27	501.62	248.74	4.07
38	<i>Malaxis corymbosa</i> (NLS)	4031.10	248.07	690.40	2701.09	370.22	671.25	1.49	575.24	153.08	1.51	0.00	##	##
39	<i>Speranthes sp ign.</i> (NLS)	8970.03	111.48	2513.52	5695.78	178.39	1347.42	1.60	1346.08	286.99	1.40	1724.80	657.89	1.89
42	<i>S. saccata</i> (Mex)	3051.52	327.71	581.20	2244.47	449.54	467.09	1.37	1523.79	170.33	1.58	2615.03	1103.69	1.62
43	<i>S. reichenbachiana</i> 'Lil' (Colf)	5494.26	182.03	1035.82	3751.42	266.57	954.76	1.46	1426.83	251.08	1.28	1871.30	584.46	1.33
47	<i>S. embreei</i> (Edtf)	5311.20	188.28	1145.81	3419.82	292.41	1340.46	1.55	1510.06	361.89	1.40	1673.82	471.95	1.31
48	<i>S. inodora</i>	4317.89	231.59	784.75	3449.97	289.86	679.85	1.25	1739.74	264.58	1.25	1947.94	525.58	1.47
49	<i>S. hernandezii</i>	2817.16	354.97	658.01	2106.36	474.75	430.94	1.34	1586.23	249.09	1.36	1539.14	232.46	1.51
50	<i>S. pulia</i> (Ping)	5045.29	198.20	1005.99	3238.94	308.74	1025.72	1.56	1579.55	252.68	1.34	1582.06	414.29	1.53
51	<i>S. intermedia</i> (Mex)	2673.67	374.02	574.25	2020.40	494.95	540.23	1.32	1494.10	275.06	1.37	2258.80	478.44	1.34
52	<i>S. connata</i>	4707.11	212.44	1084.27	3192.87	311.20	899.25	1.47	1890.18	249.63	1.32	1705.32	406.15	2.23
53	sp ign. <i>S. hernandezii</i> (Mex)	2865.22	349.01	593.98	2087.30	479.09	479.92	1.37	1640.37	222.64	1.34	2562.89	730.63	1.34
54	<i>S. madrensis</i> (<i>playacaria</i> ; Colf)	5304.57	188.52	1384.21	3263.57	306.41	629.30	1.62	2080.71	355.14	1.24	3191.34	1062.61	1.47
55	<i>S. longipes</i> (Colf)	4741.67	210.90	627.64	3241.58	308.49	942.41	1.46	1977.63	287.42	1.32	3088.79	1026.46	1.46
56	Chocolate Chips 'Linda'	4095.12	244.19	856.31	2828.01	353.61	622.69	1.45	1566.14	261.99	1.30	3477.20	953.85	1.39
57	<i>S. kerrii</i> White Bird'	4725.01	211.64	855.64	3182.30	314.24	799.27	1.48	1371.07	102.26	1.34	2351.81	681.93	1.06
58	<i>S. panamensis</i> (Ping)	3724.46	268.50	822.46	2657.20	376.34	392.69	1.40	1541.51	224.85	1.32	1484.26	397.20	1.58
59	<i>S. tigrina</i> (Mex)	4245.10	235.57	836.57	2917.18	342.80	639.82	1.46	1817.58	262.96	1.48	3745.29	1293.04	1.25
60	<i>S. Love Potion No. 9</i>	4649.63	215.49	1443.51	3097.31	322.86	950.08	1.50	1864.57	407.75	1.34	2951.88	1056.49	1.36
61	<i>S. Assidens</i>	4291.17	233.04	750.30	3420.05	292.39	753.37	1.25	1198.59	125.73	1.13	1671.64	533.89	1.65
62	<i>S. wardii</i>	4657.14	214.72	969.70	3584.04	279.01	698.03	1.30	1384.80	234.45	1.21	1773.83	595.75	1.26
63	<i>S. Penelope</i>	3968.99	251.95	840.61	2711.80	368.76	740.51	1.46	1376.92	159.09	1.42	1727.26	564.83	1.50
64	<i>S. graveolens</i>	3416.70	292.68	849.92	2325.56	430.00	634.30	1.47	1288.03	143.12	1.29	1692.84	648.25	1.61
65	<i>S. evonyma</i>	4472.46	223.59	1085.31	3633.76	273.69	922.36	1.22	1580.49	185.96	1.20	2015.67	848.05	1.49
67	<i>S. grandiflora</i>	4840.85	206.58	1006.68	3674.50	272.15	698.98	1.32	1380.95	212.09	1.23	1429.52	412.68	1.53
68	<i>S. radicans</i> (Mex)	3565.71	278.88	702.10	2495.30	400.75	650.91	1.44	1669.28	467.39	1.27	2928.91	1040.04	1.49
71	sp ign. <i>S. ocellata</i> (Mex)	4137.34	241.70	733.64	2705.17	369.66	761.39	1.53	1511.17	268.34	1.23	1775.27	601.60	1.35
83	sp ign. <i>S. amoena</i>	3617.30	276.45	860.64	2746.04	364.16	699.17	1.32	1825.24	278.31	1.22	1991.13	686.04	2.12
86	<i>Govenia superba</i> (NLS)	4926.81	202.97	664.80	3450.62	289.80	878.66	1.43	1985.70	333.67	1.19	865.51	282.78	1.92
88	<i>S. maculosa</i> (Mex)	3535.93	282.81	605.66	2109.01	474.16	452.46	1.68	1645.43	184.80	1.26	1944.64	424.48	1.73
93	sp ign. 'Huatusco' (Mex)	3665.50	227.81	622.61	2122.46	471.15	451.36	1.73	1775.60	287.25	1.23	1987.23	558.75	1.57
94	sp ign. '331 ER' (Mex)	4208.78	237.60	671.94	2784.87	359.08	505.55	1.51	1934.67	286.94	1.28	1547.08	522.84	1.93
98	sp ign. 'Huatusco II' (Mex)	3626.81	275.72	652.96	2167.37	459.48	343.05	1.67	1111.56	187.19	1.36	1203.83	969.01	0.66

Note: NLS = the state of Nuevo Leon.

Cuadro 6. Cuadro de resumen de todos los ejemplares usados en este investigación

Species	AdArea	Ad#cells	AdStdDev	AbArea	Ab#Cells	AbStdDev	Ab#Ab	GCArea	GCSdDev	GCIw	SSArea	SSStdDev	SSI	w
01 S. saccata	3097.40	322.85	675.48	2219.28	450.60	583.79	1.40	1476.94	286.51	1.51	2024.18	704.80	2.05	
02 S. saccata (Guti)	3040.90	328.85	732.53	7219.05	451.64	413.71	1.37	1264.14	330.48	1.40	2133.04	1109.53	1.48	
03 sp igo S. imágnes (Colt)	4769.92	209.65	989.85	3247.80	307.90	631.54	1.47	1993.45	215.54	1.24	1900.39	655.69	1.62	
04 S. hernandezii (Mex)	27.82.83	359.35	687.45	2096.11	477.07	443.39	1.33	1291.47	158.24	1.34	1397.24	329.58	1.33	
05 S. ocellata Eye Doc (Fmkt)	4125.24	242.53	1103.11	2732.08	366.02	534.93	1.51	1476.80	151.79	1.28	1581.22	718.56	1.27	
06 S. ocellata (Mex)	4173.52	239.61	1249.10	2747.85	363.92	717.38	1.52	1554.22	187.90	1.34	1632.02	823.79	1.48	
07 S. tigrina (Mex)	4239.11	234.79	852.13	2857.65	349.84	700.88	1.49	919.92	260.27	1.42	2128.08	631.11	1.50	
08 S. graveolens (Mex)	3380.43	295.82	878.21	2372.18	421.55	682.81	1.43	1467.43	199.12	1.27	2859.74	4301.08	1.82	
09 S. graveolens (Mex)	3288.62	304.08	872.76	2309.55	432.98	600.76	1.42	1518.74	166.98	1.23	1400.99	408.39	1.60	
10 S. tigrina (Mex)	3443.85	290.37	361.02	2608.63	383.34	514.27	1.32	1215.20	228.60	1.44	1627.29	891.22	1.32	
11 S. intermedia (Mex)	2691.30	371.57	586.08	2061.25	485.36	651.90	1.31	1318.93	143.69	1.40	2085.25	564.51	1.11	
12 S. wardii Dozen	46.03.10	217.24	1071.84	3554.56	281.96	1217.37	1.30	1302.88	248.89	1.31	2100.33	728.42	1.47	
13 S. wardii (Colt)	4594.98	217.63	1194.49	3526.38	283.58	758.40	1.30	156.32	282.31	2.34	1440.43	297.77	1.48	
14 S. wardii	4660.02	214.59	1582.82	3570.86	284.04	887.75	1.31	1343.93	292.82	1.03	2001.75	641.73	1.26	
15 S. nigrovittata (Mex)	3129.27	319.56	892.38	2263.86	441.72	590.48	1.38	1137.87	258.48	1.29	1602.38	886.17	2.02	
16 S. tigrina (Bd)	4780.59	209.18	1207.17	3251.88	307.51	570.29	1.47	1287.34	460.87	1.40	2019.38	774.39	1.17	
17 S. costaricensis (Cral)	3703.30	269.88	543.05	2648.90	377.52	610.02	1.40	1427.67	271.19	1.17	1997.20	626.08	1.40	
18 S. paucir. (Colt)	4899.09	204.45	1007.89	3991.96	334.23	737.80	1.63	1520.17	326.69	1.47	1492.10	407.94	1.58	
19 S. shuangwoothu (Colt)	4377.18	228.46	1156.08	2808.95	356.01	756.62	1.56	1334.66	166.64	1.20	2010.36	683.02	1.42	
20 S. incorna (Colt)	4332.35	220.64	1168.20	3555.51	281.25	632.70	1.27	1181.80	145.28	1.06	1813.87	732.12	1.26	
21 S. reichenbachianna (Colt)	3623.69	177.82	1540.34	3768.63	265.49	659.86	1.49	1337.21	173.22	1.26	1295.46	483.91	1.54	
22 S. eburnea (Bell)	4498.03	222.32	794.55	3726.32	268.36	1328.05	1.21	1419.09	360.07	1.10	2346.70	959.54	1.14	
23 S. economa (Emi)	3837.05	260.62	1475.60	2662.31	375.61	801.96	1.44	1450.68	261.26	1.24	2065.54	831.96	1.21	
24 S. jenschianna (Colt)	4368.36	228.92	824.01	2889.41	344.90	957.87	1.51	1360.17	325.79	1.11	2653.54	706.42	0.93	
25 S. grandiflora (Bell)	4816.54	207.62	1493.20	3714.49	269.22	614.10	1.30	1222.81	102.47	1.17	1004.59	466.20	2.07	
26 sp igo S. tigrina (Colt)	4220.42	236.94	805.00	2836.17	350.13	734.29	1.48	1128.68	247.57	1.25	2159.94	924.67	1.30	
27 S. candida (Colt)	4856.62	205.90	1200.78	2790.16	358.40	768.86	1.74	1355.76	192.28	1.31	1584.00	494.53	1.25	
28 S. conorna (Colt)	4713.00	212.18	878.44	3213.80	311.16	723.05	1.47	1477.35	268.49	1.14	2003.84	879.58	1.25	
29 S. baselliforme (Peri)	4215.97	237.19	898.67	3535.07	281.21	907.44	1.19	1471.04	221.49	1.36	2858.20	1251.00	1.29	
30 S. impressa (Colt)	4307.50	232.15	962.07	3119.53	320.56	511.66	1.38	1072.09	178.58	1.39	1228.61	322.03	1.79	
31 S. platiceras (Colt)	5266.02	189.90	1066.47	3535.66	298.00	698.51	1.57	1875.38	221.46	1.15	1972.53	392.27	1.28	
32 S. posular (Colt)	4336.35	230.61	982.74	3537.93	282.65	739.38	1.23	1317.30	165.93	1.36	1861.42	454.88	1.31	
33 sp igo S. tigrina (Colt)	4233.55	236.21	869.12	2816.88	355.00	815.48	1.50	1537.75	183.44	1.34	1483.97	346.95	1.25	
35 Goveaia variculata (NLS)	2918.52	342.64	558.03	2134.47	468.50	616.26	1.37	1834.14	362.41	1.03	605.58	175.83	2.28	
36 Sparattus sp igo (NLS)	1160.14	111.48	3470.34	6163.38	162.28	1423.13	1.88	1731.57	204.57	1.24	1620.42	572.02	2.24	
37 Goveaia superba (NLS)	4835.56	206.80	683.75	3568.45	280.23	732.37	1.36	1692.65	263.20	1.27	501.62	248.74	4.07	
38 Malaxis corymbosa (NLS)	4031.10	248.07	690.40	2701.09	370.22	775.25	1.49	1575.24	153.06	1.51	9.00	0.00	#.#	
39 Sparattus sp igo (NLS)	8970.03	111.48	2513.52	5650.78	178.39	1347.42	1.60	1286.08	286.95	1.40	1724.80	657.99	1.89	
40 S. saccata (Mex)	3051.52	327.71	581.20	2224.47	449.54	457.09	1.37	1523.79	170.33	1.58	2615.03	1103.68	1.62	
41 S. reichenbachianna Lil (Colt)	5494.26	182.01	1035.82	3751.42	266.57	954.76	1.46	1426.83	251.08	1.24	1871.30	384.46	1.33	
47 S. embreei (Edr)	5311.20	188.28	1455.81	3419.82	292.41	1140.46	1.55	1510.06	361.89	1.40	1673.82	471.95	1.31	
48 S. modesta	4317.89	231.59	784.75	3449.97	289.86	679.85	1.25	1739.74	246.58	1.25	1947.94	525.58	1.47	
49 S. hernandezii	2817.16	354.97	658.01	2106.36	474.75	430.94	1.34	1586.23	249.09	1.36	1539.14	232.48	1.51	
50 S. pulla (Pap)	5045.29	198.20	1005.99	3238.94	304.74	1025.72	1.36	1579.55	252.68	1.34	1582.06	414.29	1.53	
51 S. intermedia (Mex)	2673.67	374.02	574.25	2020.40	494.95	540.73	1.32	1494.10	273.06	1.37	2258.80	478.44	1.34	
52 S. comorna	4707.11	212.44	1084.73	2312.67	313.20	899.25	1.47	1890.18	249.63	1.32	1705.32	406.15	2.23	
53 sp igo S. hennanensis (Mex)	2865.22	349.01	593.98	2887.30	479.09	479.92	1.37	1640.37	222.64	1.34	2562.85	730.63	1.34	
54 S. madoumiana platioceras (Colt)	5304.57	188.52	1384.21	3263.57	306.41	629.30	1.63	2080.71	355.14	1.24	3191.34	1062.61	1.47	
55 S. longipes (Colt)	4741.67	210.90	627.64	3241.58	308.49	942.41	1.46	1977.63	287.42	1.32	3008.29	1026.46	1.46	
56 Chocolate Chips Lindt	4095.12	244.19	850.31	2828.01	353.61	622.59	1.45	1566.14	261.98	1.30	3477.20	953.85	1.39	
57 S. bozeli White Bird	4723.03	211.64	855.64	3182.30	314.24	799.27	1.48	1371.07	102.26	1.34	2351.81	681.93	1.06	
58 S. panamensis (Pap)	3224.46	268.50	822.46	2657.20	376.34	392.69	1.40	1541.51	224.85	1.32	1484.24	397.20	1.58	
59 S. tigrina (Mex)	4245.10	235.57	836.57	2917.18	348.80	639.82	1.46	1817.58	262.96	1.48	3745.29	1293.04	1.75	
60 S. Love Potion No. 9	4640.63	215.49	1443.51	3097.31	322.86	950.08	1.50	1864.57	407.75	1.38	2951.95	1056.49	1.38	
61 S. Assidens	4291.17	233.04	750.50	3420.05	292.39	753.37	1.25	1198.59	125.73	1.13	1671.64	533.89	1.65	
62 S. wardii	4657.14	214.72	969.70	3558.04	279.01	698.03	1.30	1384.80	234.45	1.21	1773.83	595.79	1.26	
63 S. Penelope	3968.99	251.95	840.61	2711.80	358.76	740.51	1.46	1576.92	159.09	1.42	1727.26	564.83	1.50	
64 S. graveolens	3416.76	292.68	849.92	2325.56	430.00	634.30	1.47	1288.03	143.12	1.29	1692.84	648.25	1.61	
65 S. eburnea	4472.46	223.59	1083.31	3653.76	273.69	922.36	1.22	1580.49	185.96	1.20	2015.67	848.05	1.49	
67 S. grandiflora	4840.85	206.58	1006.68	3674.50	272.15	698.98	1.32	1380.95	212.09	1.23	1429.52	412.68	1.53	
69 S. radiosa (Mex)	3585.71	278.88	702.10	2495.30	408.75	650.91	1.44	1669.78	487.39	1.27	2928.91	1040.04	1.49	
77 sp igo S. ocellata (Mex)	4137.34	241.70	733.64	2705.17	369.66	761.39	1.53	1511.17	268.34	1.25	1775.27	601.60	1.35	
83 sp igo S. amoenae	3617.30	276.45	860.64	2746.04	364.16	699.17	1.32	1825.24	278.31	1.22	1991.13	686.04	1.12	
86 Goveaia superba (NLS)	4926.81	202.97	664.80	3450.62	289.80	878.56	1.43	1985.70	333.67	1.19	865.31	282.78	1.92	
88 S. maculosa (Mex)	3535.93	282.81	605.66	2109.01	474.16	452.46	1.68	1645.43	184.80	1.20	1944.64	424.48	1.73	
93 S. sp igo Huatusco (Mex)	3665.50	272.81	622.61	2122.46	471.15	451.36	1.73	1775.60	287.29	1.23	1987.23	558.79	1.57	
94 S. tigrina 331 ER (Mex)	4208.78	237.60	671.94	2784.87	359.08	503.55	1.51	1934.67	286.94	1.28	1547.08	522.84	1.93	
98 S. sp igo Huatusco II (Mex)	3626.81	275.72	652.96	2176.37	459.48	343.05	1.67	1111.56	187.19	1.38	1203.83	969.01	0.66	

Nota: NLS - el estado de Nuevo León.

Table 7. Monophyletic species in descending order according to mean anterior and abditoal cell areas

Species	Avg Area	Species	Avg Area
54 <i>S. leucostictus</i> Colombia	5621.69	21 <i>S. leucostictus</i> Colombia	7766.53
46 <i>S. leucostictus</i> I. Colombia	5454.76	46 <i>S. leucostictus</i> I. Colombia	3751.42
47 <i>S. mordax</i> Ecuador	5311.20	72 <i>S. mordax</i> N. Brazil; northern S. America to Peru	3651.74
54 <i>S. mordax</i> sp. (platycephala) Colombia	5304.57	25 <i>S. mordax</i> N. Brazil; northern S. America to Peru	374.44
20 <i>S. palli</i> Panama, Costa Rica	5045.29	67 <i>S. mordax</i> N. Brazil; northern S. America to Peru	3674.57
18 <i>S. pectoralis</i> Peru	4851.09	66 <i>S. mordax</i> N. Brazil; northern South America to Peru	3651.76
31 <i>S. platenae</i> Colombia	4873.74	12 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	3584.04
27 <i>S. candida</i> Brazil; northern South America to Peru	4856.02	14 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	3570.46
67 <i>S. grandis</i> N. Brazil; northern S. America to Peru	4840.85	29 <i>S. mordax</i> Peru	3558.07
25 <i>S. grandis</i> N. Brazil; northern S. America to Peru	4816.54	20 <i>S. mordax</i> Colombia, Ecuador, Peru	3555.51
16 <i>S. longicauda</i> Brazil, Colombia, Ecuador, Peru	4780.59	13 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	3546.56
03 <i>S. sp. sp. 5</i> Brazil, Colombia, Ecuador, Peru	4769.92	32 <i>S. mordax</i> Colombia	3537.93
57 <i>S. elongata</i> Colombia	4742.67	11 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	3526.39
51 <i>S. tigris</i> White Bird The Catetus Brazil, Venezuela	4725.01	48 <i>S. mordax</i> Peru, pos. in C. America, and in Mexico	3444.97
28 <i>S. cinnamomea</i> Colombia, Ecuador, Peru	4713.00	47 <i>S. mordax</i> Ecuador	3429.82
57 <i>S. cinnamomea</i> Colombia, Ecuador, Peru	4712.11	54 <i>S. mordax</i> sp. platycephala Colombia	3261.57
14 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	4660.07	16 <i>S. longicauda</i> Brazil, Colombia, Ecuador, Peru	3251.88
62 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	4657.16	03 <i>S. sp. sp. 5</i> Brazil, Colombia, Ecuador, Peru	3247.80
12 <i>S. mordax</i> Dorset Col., Venezuela, and north to Nicaragua	4603.10	55 <i>S. longipes</i> Colombia	3241.58
13 <i>S. mordax</i> Col., Venezuela, and north to Nicaragua	4594.98	50 <i>S. sp. sp. 5</i> Panama, Costa Rica	3238.04
20 <i>S. trivittata</i> Colombia, Ecuador, Peru	4532.35	28 <i>S. compacta</i> Colombia, Ecuador, Peru	3211.80
22 <i>S. stellata</i> N. Brazil; northern S. America to Peru	4478.03	52 <i>S. compacta</i> Colombia, Ecuador, Peru	3192.87
66 <i>S. stellata</i> N. Brazil; northern S. America to Peru	4472.46	57 <i>S. tigris</i> White Bird The Catetus Brazil, Venezuela	3142.32
19 <i>S. stellata</i> Colombia	4377.18	30 <i>S. compacta</i> Colombia, Ecuador	3119.53
24 <i>S. venustissima</i> Col., Venezuela, Ecuador, and Panama	4368.36	18 <i>S. sp. sp. 5</i> Peru	2941.96
32 <i>S. porphyria</i> Colombia	4336.33	31 <i>S. platycephala</i> Colombia	2946.99
48 <i>S. modesta</i> Peru, pos. in C. America, and in Mexico	4312.59	39 <i>S. signata</i> northern South America to Mexico	29.7.15
30 <i>S. impressa</i> Colombia, Ecuador	4107.30	24 <i>S. grandis</i> Col., Venezuela, Ecuador, and Panama	2899.41
07 <i>S. sp. sp. 5</i> Argentina Northern South America to Mexico	4159.11	01 <i>S. sp. sp. 5</i> northern South America to Mexico	2831.05
39 <i>S. sp. sp. 5</i> Argentina Northern South America to Mexico	4245.10	26 <i>S. sp. sp. 5</i> northern South America to Mexico	2830.27
33 <i>S. sp. sp. 5</i> Argentina Northern South America to Mexico	4177.55	31 <i>S. sp. sp. 5</i> Argentina Northern South America to Mexico	2816.84
26 <i>S. sp. sp. 5</i> Argentina Northern South America to Mexico	4220.41	19 <i>S. oblonga</i> Colombia	2804.95
29 <i>S. sanguineum</i> Peru	4115.37	27 <i>S. scandida</i> Peru & northern South America to Peru	2790.16
06 <i>S. ornata</i> northern South America to Mexico	4173.52	06 <i>S. ornata</i> northern South America to Mexico	2747.85
77 <i>S. sp. sp. 5</i> ornata southern South America to Mexico	4132.34	82 <i>S. ornata</i> (Unknown)	2746.04
25 <i>S. ornata</i> Eye Dot; northern S. America to Mexico	4123.24	05 <i>S. ornata</i> Eye Dot; northern S. America to Mexico	2732.08
23 <i>S. ornata</i> Pescante Guatemala	3837.05	77 <i>S. sp. sp. 5</i> dentata northern South America to Mexico	2705.17
58 <i>S. pectoralis</i> Panama	3724.45	23 <i>S. ornata</i> Pescante Guatemala	2642.31
83 <i>S. ornata</i> (Unknown)	3617.30	58 <i>S. pectoralis</i> Panama	2637.21
17 <i>S. conspicua</i> Costa Rica	3605.70	17 <i>S. conspicua</i> Costa Rica	2648.90
69 <i>S. sp. sp. 5</i> Mexico	3585.71	10 <i>S. matudai</i> Mexico	2608.63
88 <i>S. matudai</i> Mexico	3512.93	69 <i>S. sp. sp. 5</i> Mexico	2495.30
19 <i>S. matudai</i> Mexico	3443.85	08 <i>S. grandis</i> Honduras Guatemala, Mexico	2377.18
64 <i>S. grandis</i> Honduras, Guatemala, Mexico	3416.75	64 <i>S. grandis</i> Honduras, Guatemala, Mexico	2375.56
08 <i>S. grandis</i> Honduras, Guatemala, Mexico	3380.63	09 <i>S. grandis</i> Honduras, Guatemala, Mexico	2309.55
15 <i>S. grandis</i> Mexico	3129.27	15 <i>S. longipes</i> Mexico	2261.85
01 <i>S. sacata</i> El Salvador, Guatemala, Mexico	3097.40	45 <i>S. sacata</i> El Salvador, Guatemala, Mexico	2224.47
45 <i>S. sacata</i> El Salvador, Guatemala, Mexico	3031.42	01 <i>S. sacata</i> El Salvador, Guatemala, Mexico	2219.28
02 <i>S. sacata</i> El Salvador, Guatemala, Mexico	3040.93	22 <i>S. sacata</i> El Salvador, Guatemala, Mexico	2219.09
53 <i>S. sp. sp. 5</i> Guatemala, Mexico	2865.22	48 <i>S. matudai</i> Mexico	2109.01
49 <i>S. matudai</i> Guatemala, Mexico	2817.34	49 <i>S. matudai</i> Guatemala, Mexico	2108.36
04 <i>S. matudai</i> Mexico	2782.83	34 <i>S. matudai</i> Guatemala, Mexico	2098.11
11 <i>S. matudai</i> Mexico	2691.30	33 <i>S. sp. sp. 5</i> Guatemala, Mexico	2087.30
51 <i>S. matudai</i> Mexico	2573.67	17 <i>S. matudai</i> Mexico	2100.25
		31 <i>S. matudai</i> Mexico	2020.40

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Cuadro 2. Especies de Sternopygia en orden descriptivo según el provecho de las fases celulares epidémicas del huevo y del envés.

Cod.	Espécie	Área, Hect.	Cod.	Espécie	Área, Hect.
21	S. reichenbachiana Colombia	3623.69	21	S. reichenbachiana Colombia	2766.63
46	S. reichenbachiana Del. Colombia	3494.26	46	S. reichenbachiana Del. Colombia	2751.42
47	S. leucostoma Ecuador	5311.26	27	S. leucostoma N. Brasil N. Sur Amer hasta Peru	3663.76
58	S. madagascariensis (playonense) Colombia	5304.57	28	S. madagascariensis X. Brasil N. Sur Amer hasta Peru	3714.49
59	S. pulia Perú, Costa Rica	5045.29	29	S. madagascariensis N. Brasil N. Sur Amer hasta Peru	3674.50
16	S. pozo Perú	4891.09	66	S. leucostoma N. Brasil N. Sur Amer hasta Peru	1651.76
31	S. platycera Colombia	4873.74	67	S. wardii Col. Venezuela y N. hacia Nicaragua	3544.04
27	S. canthidura brasil N. Sur Amer hasta Peru	4836.61	14	S. wardii Col. Venezuela y N. hacia Nicaragua	2310.86
67	S. gracilis N. Brasil N. Sur Amer hasta Peru	4840.43	29	S. nasuta Perú	2555.07
29	S. genitivus N. Brasil-N. Sur Amer hasta Peru	4816.54	20	S. leucostoma Colombia, Ecuador, Perú	1555.51
15	S. elegans Brasil, Colombia, Ecuador, Perú	4780.59	12	S. wardii Divers Col., Yanez, y N. hacia Nicaragua	1546.56
03	S. spina S. elegans Brasil, Colombia, Ecuador, Perú	4765.92	33	S. petechia Colombia	1537.93
53	S. elegans Colombia	4741.37	13	S. wardii Col. Venezuela, y N. hacia Nicaragua	3526.38
57	S. hetera White Bird Las Orquídeas Brasil, Venezuela	4725.01	48	S. madagascariensis Perú para Amer Central; no en México	3444.97
28	S. ceciliae Colombia, Ecuador, Perú	4713.00	47	S. leucostoma Ecuador	3419.82
52	S. leucostoma Colombia, Ecuador, Perú	4707.13	54	S. madagascariensis (playonense) Colombia	1761.17
14	S. wardii Col. Venezuela, y N. hacia Nicaragua	4660.00	16	S. insignis Brasil, Colombia, Ecuador, Perú	2251.88
62	S. wardii Col. Venezuela, y N. hacia Nicaragua	4554.14	64	S. spina S. elegans Brasil, Colombia, Ecuador, Perú	2147.80
12	S. wardii Divers Col. Venezuela, y N. hacia Nicaragua	4503.10	23	S. longipes Colombia	2241.58
13	S. wardii Col. Venezuela, y N. hacia Nicaragua	4594.92	30	S. spina Pequeña Costa Rica	2239.91
23	S. leucostoma Colombia, Ecuador, Perú	4532.35	28	S. ceciliae Colombia, Ecuador, Perú	2213.80
22	S. leucostoma N. Brasil N. Sur Amer hasta Peru	4498.03	52	S. ceciliae Colombia, Ecuador, Perú	2192.87
66	S. leucostoma N. Brasil N. Sur Amer hasta Perú	4472.48	57	S. hetera White Bird Las Orquídeas Brasil, Venezuela	2182.30
19	S. denticulata Colombia	4377.18	30	S. longipes Colombia, Ecuador	2119.53
24	S. jenischiana Col. Venezuela, Ecuador, y Panamá	4368.36	18	S. pozo Perú	2091.91
37	S. petechia Colombia	4336.39	31	S. platycera Colombia	2086.95
48	S. madagascariensis Perú para Amer Central; no en México	4177.49	59	S. spina N. Sur Amer hasta México	2012.18
32	S. impressa Colombia, Ecuador	4307.50	24	S. jenischiana Col. Venezuela, Ecuador, y Panamá	2099.91
07	S. spina nigra N. Sur Amer hasta México	4259.13	27	S. spina nigra N. Sur Amer hasta México	2057.66
59	S. spina nigra N. Sur Amer hasta México	4245.10	26	S. spina nigra N. Sur Amer hasta México	2056.17
33	S. spina nigra N. Sur Amer hasta México	4233.53	33	S. spina nigra N. Sur Amer hasta México	2016.48
28	S. spina nigra N. Sur Amer hasta México	4220.43	19	S. madagascariensis Colombia	2004.93
32	S. nasutellus Perú	4215.97	27	S. ceciliae Brasil & N. Sur Amer hasta Perú	2090.16
06	S. dentata N. Sur Amer hasta México	4173.52			
77	S. spina nigra N. Sur Amer hasta México	4137.34			
05	S. serrata Hy. Dors N. Sur Amer hasta México	4123.24			
23	S. leucostoma Paraguay hasta Guatemala	3837.05			
24	S. spinaeformis Paraguay	3724.48			
33	S. spina nigra N. Sur Amer hasta México	3617.30			
17	S. costaricensis Costa Rica	3603.70			
69	S. spina nigra México	2585.73	06	S. serrata N. Sur Amer hasta México	2747.85
85	S. maculosa México	3535.93	43	S. spina nigra (desconocido)	2746.04
10	S. serrata México	3443.85	15	S. serrata Hy. Dors N. Sur Amer hasta México	2732.08
64	S. gravileana Honduras, Guatemala, México	3416.76	11	S. spina nigra N. Sur Amer hasta México	2705.12
08	S. gravileana Honduras, Guatemala, México	3180.47	23	S. serrata Paraguay hasta Guatemala	2562.31
09	S. gravileana Honduras, Guatemala, México	3288.63	28	S. spinaeformis Paraguay	2657.10
15	S. spinaeformis México	3129.27	17	S. costaricensis Costa Rica	2648.96
01	S. serrata El Salv., Guatemala, México	3057.49			
45	S. serrata El Salv., Guatemala, México	3051.42	01	S. serrata El Salv., Guatemala, México	2219.28
02	S. serrata El Salv., Guatemala, México	3040.95	12	S. serrata El Salv., Guatemala, México	2219.09
53	S. spina bernardensis Guatemala, México	2865.22	68	S. maculosa México	2149.01
49	S. leucostoma Guatemala, México	2812.16	49	G. hernandezii Guatemala, México	2106.36
04	S. imitatrix México	2782.82	04	S. hernandezii Guatemala, México	2096.11
11	S. imitatrix México	2691.30	53	S. spina bernardensis México	2087.30
51	S. imitatrix México	2673.67	31	S. serrata México	2046.75
			31	S. serrata México	2020.40

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6.2. SPECIAL CASES

S. tigrina and *S. haselowiana*

C26 (Fig. 20) and C33 were received from different sources with only the country of origin of each specimen known. Their epidermal leaf cell area data showed no significant difference from the confirmed *S. tigrina* clones C07 and C59, and predictions of them as *S. tigrina* were confirmed when they flowered. The normal curves of the adaxial (Fig. 22) and abaxial (Fig. 23) epidermal cell areas illustrates the similarity of these different clones of the same species. Complete sets of the normal standard curves of *S. tigrina* specimens are illustrated in Figures 1-4 of Annex A II 1.

Tabular data of these specimens are summarized in Table 8.

Specimen C94 *S. tigrina* had flowered and had been identified by Rivera (the plant's owner), of Cordoba, Veracruz, Mexico. Subsequently, he took the leafprint the first of May, 1998.



Fig. 20. C26 *S. tigrina*

photo: 04 July, 1996

C94 was in flower subsequently, in July, 1998 and was photographed (Fig. 21).

The complete set of curves of C94, C33, C59, and C07 is shown in Figs. 81-84 of Annex II - 21. The complete adaxial statistical summary of C07 is shown in Annex III, p. A III-7, column 1, and the complete abaxial summary in Annex III, p. 19. The data from both summaries show that when compared with C07, none of the three samples C26, 33, and 94 differ significantly from C07 at the level $p = 0.05$. As these plants of *S. tigrina* represent importations



Fig. 21. C94 *S. tigrina* 331ER

photo: 22 July, 1998

confirmed from Colombia, Guatemala, and Mexico, these data demonstrate that this species does not vary significantly ($p = 0.05$) with respect to latitude whether originating from Colombia, South America to Cordoba, Veracruz, Mexico (Table 8).

The complete guard cell statistical summary of C07 is shown in Annex III, p. A III-37, column 2, and the complete subsidiary cell summary in Annex III, pp. 40-41. With respect to subsidiary cell data, significance is found at $p = 0.05$ between C07 and C26, but neither sample correlates with C33 or C94 at the $p = 0.05$ of significance.

6.2. CASOS ESPECIALES

S. tigrina y *S. haselowiana*

C26 y C33 se recibieron de diferentes fuentes conociendo sólo sus países de origen. Los datos de sus áreas celulares de la epidermis foliar no mostraron diferencias significativas con los clones confirmados de *S. tigrina* C07 y C59 y la identificación como tal fué posteriormente confirmada por sus flores. Las curvas normal estándar de las áreas celulares de la epidermis del haz (Fig. 22) y el envés (Fig. 23) ilustran la similitud de los diferentes clones de las mismas especies. El conjunto de las curvas normales de los ejemplares individuales de *S. tigrina* se ilustra en las figuras 1-4 del Anexo A II - I. Los datos tabulados de estos ejemplares se resumen en el Cuadro 8.

El ejemplar C94 *S. tigrina* floreó y fué identificado por Rivera (el dueño de la planta) de Córdoba, Veracruz, México. Subsecuentemente, él le tomó la impronta el primero de mayo de 1998. C94 estuvo en flor en julio, 1998, y fue fotografiado (Fig. 21).



Fig. 20. C26 *S. tigrina*

foto: 04 July, 1996



Fig. 21. C94 *S. tigrina* 331ER photo: 22 July, 1998

originaran entre Colombia, Sur América y Córdoba, Veracruz, México.

El resumen estadístico completo de las células guardia de C07 se muestra en el Anexo III, p. A III-37, columna 2, y los de las células subsidiarias en el Anexo III, pp. 40-41. Los datos de las células guardia no muestran correlación a nivel $\rho = 0.05$ con ninguna de las muestras de *S. tigrina*. Con respecto a los datos de las células subsidiarias, se encuentra significación a nivel $\rho = 0.05$ entre C07 y C26, pero ninguna de estas muestras se correlaciona con C33 o 94 al nivel significativo de $\rho = 0.05$.

El conjunto completo de las curvas de los ejemplares C94, C33, C59, y C07 se muestra en las figuras 81 - 84 del Anexo II - 21. El resumen estadístico completo del haz de C07 se muestra en el Anexo III, p. A III-7, col. 1; y el envés completo en Anexo III, p. 19. Los datos de ambos resúmenes que cuando se comparan con C07, ninguna de las tres muestras C26, 33 y C94 difieren significativamente de C07 al nivel $\rho = 0.05$. Como estas plantas de *S. tigrina* representan importaciones de Colombia, Guatemala, y México, estos datos demuestran que esta especie no varía significativamente ($\rho = 0.05$) con respecto a la latitud donde sea que se

origina.

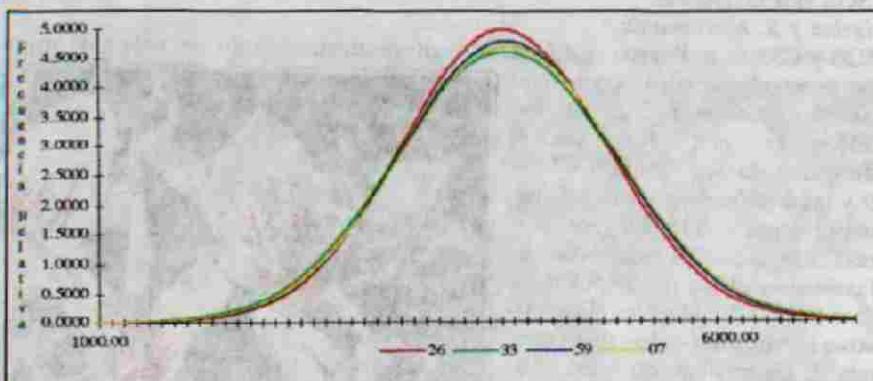


Fig. 22. Normal standard curves of adaxial epidermal cell areas of *S. tigrina* samples C26 (Col!), C33 (Guatemala!), and C59 and C07 (both of Mexico!).

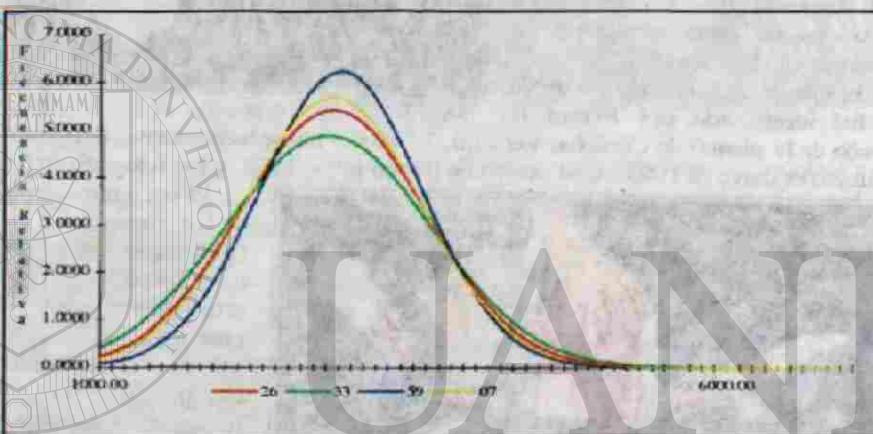


Fig. 23. Normal standard curves of abaxial epidermal cell areas of *S. tigrina* samples C26 (Col!), C33 (Guatemala!), and C59 and C07 (both of Mexico!).

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Table 8. Summary of data for specimens of *S. tigrina*.

C#	Orig.	Ad Area (μ^2)	# of Cells	Adaxial Std Dev	Ab Area (μ^2)	# of Cells	Abaxial Std Dev	GC Area (μ^2)	GC Std Dev	SS Area (μ^2)	SS Std Dev
C07	Mex	4259.11	234.79	852.13	2857.66	349.94	700.88	919.92	260.27	2126.08	631.11
C26	Col!	4220.42	236.94	805.00	2856.17	350.12	734.29	1128.68	247.57	2159.94	924.67
C33	Gtm!	4233.55	236.21	869.12	2816.88	355.00	815.48	1537.75	183.44	1483.57	346.95
C59	Mex!	4245.10	235.57	836.57	2917.18	342.80	639.82	1817.58	262.96	3745.29	1293.04
C94	Mex!	4208.78	237.60	671.94	2784.87	359.08	505.55	1934.67	286.94	1547.08	522.84
Sum		16958.11	943.51	--	11447.89	1397.86	--	5403.93	954.24	9514.88	--
Mean		4239.55	235.88	--	2861.97	349.65	--	1350.82	238.56	2378.72	--
Sig 0.05α		yes	yes		yes	yes		no		no	

The adaxial epidermal cell area of *S. tigrina* specimens ranges from $4208.78\mu^2$ to $4259.11\mu^2$. This does not permit differentiation with C29 *S. haselowanaria* (Ad: $4215.97\mu^2$) by the mean adaxial epidermal cell areas of from the *S. tigrina* samples at the $\alpha = 0.05$ level (Fig. 24; Table 9). However, the abaxial epidermal cell areas of the *S. tigrina* specimens range from $2816.88\mu^2$ to $2917.18\mu^2$ and the abaxial cell area mean of *S. haselowanaria* is $Ab3556.07\mu^2$; well outside the $\alpha = 0.05$ limit. On this basis, C29 *S. haselowanaria* was able to be differentiated from plants of *S. tigrina*. Abaxial epidermal cell data normal standard curves of C29 *S. haselowanaria* and C07, C26, C33, C94 *S. tigrina* also show C29 different from the samples of *S. tigrina* (Fig. 25).

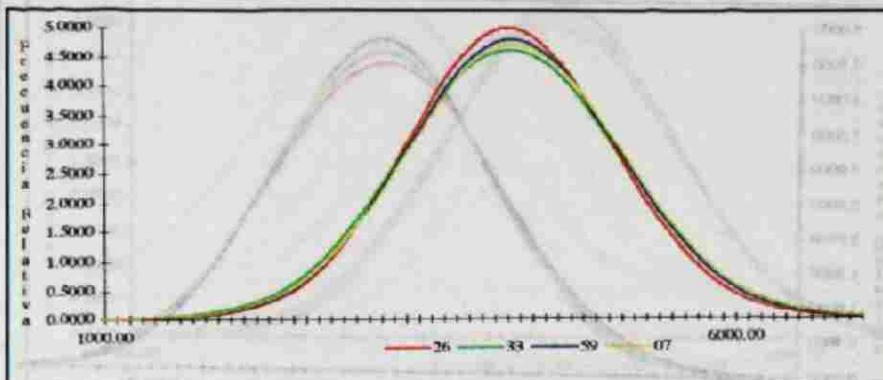


Fig. 22. Curvas normales estándar de las áreas celulares de la epidermis del haz de *S. tigrina* C26 (Col!), C33 (Guatemala!) y C59 y C07 (ambos de México!).

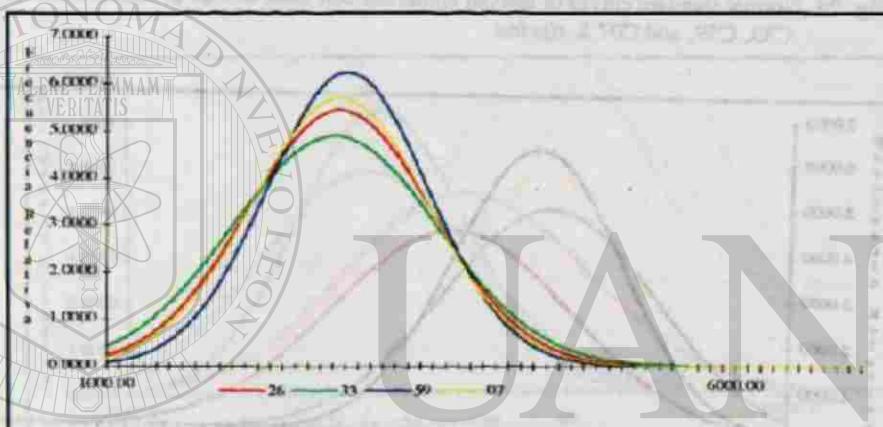


Fig. 23. Curvas normales estándar de las áreas celulares de la epidermis del envéz de *S. tigrina* C26 (Col!), C33 (Guatemala!) y C59 y C07 (ambos de México!).

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Cuadro 8. Resumen de datos de los ejemplares de *S. tigrina*.

C#	Orig.	Area, Haz (μ^2)	# de Células	Desv Est Haz	Area, Envéz (μ^2)	# de Células	Desv Est Envéz	Area, GC (μ^2)	Desv Est GC	Area SS (μ^2)	Desv Est SS
C07	Méx	4259.11	234.79	852.13	2857.66	349.94	700.88	919.92	260.27	2126.08	631.11
C26	Col!	4220.42	236.94	805.00	2856.17	350.12	734.29	1128.68	247.57	2159.94	924.67
C33	Gtm!	4233.55	236.21	869.12	2816.88	355.00	815.48	1537.75	183.44	1483.57	346.95
C59	Méx!	4245.10	235.57	836.57	2917.18	342.80	639.82	1817.58	262.96	3745.29	1293.04
C94	Méx!	4208.78	237.60	671.94	2784.87	359.08	505.55	1934.67	286.94	1547.08	522.84
Suma		16958.11	943.51	--	11447.89	1397.86	--	5403.93	954.24	9514.88	--
Medio		4239.55	235.88	--	2861.97	349.65	--	1350.82	238.56	2378.72	--
Sig 0.05a		sí	sí		sí	sí		no		no	

El área celular de la epidermis del haz de los ejemplares de *S. tigrina* abarca de 4208.78 μ^2 a 4259.11 μ^2 . Esto no permite diferenciar los datos del haz de C29 *S. haselowiana* (Ad: 4215.97 μ^2) con ejemplares de *S. tigrina* al nivel de $p = 0.05$ (Fig. 24; Cuadro 9). Sin embargo, el área celular de la epidermis del envéz de los ejemplares de *S. tigrina* varía de 2816.88 μ^2 a 2917.18 μ^2 y el promedio del área de las células del envéz de *S. haselowiana* es 3556.07 μ^2 , bien afuera el límite de $p = 0.05$. Sobre esta base, C29 *S. haselowiana* se diferenció de las plantas de *S. tigrina*. Las curvas normal estándar de las células del envéz de C29 *S. haselowiana* y C07, C26, C33, C94 *S. tigrina* también enseñan que C29 diferente de los ejemplares de *S. tigrina* (Fig. 25).

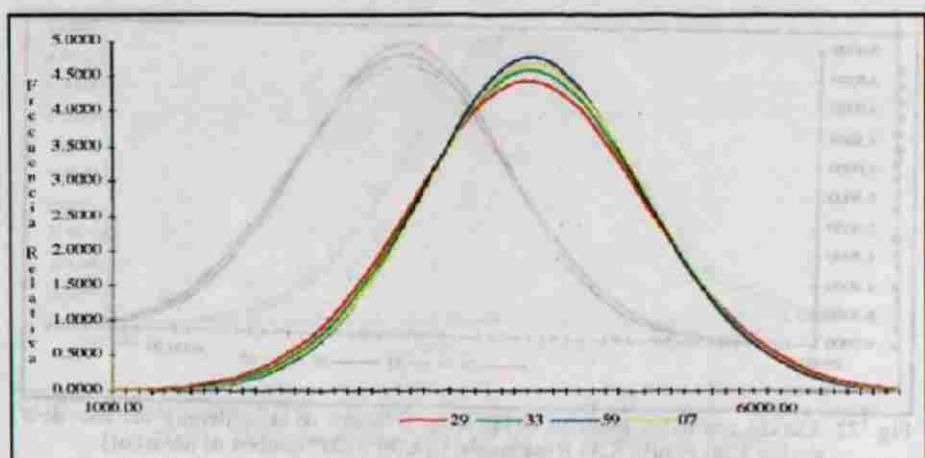


Fig. 24. Normal standard curves of adaxial epidermal cell areas of C29 *S. haselowiana* and C33, C59, and C07 *S. tigrina*.

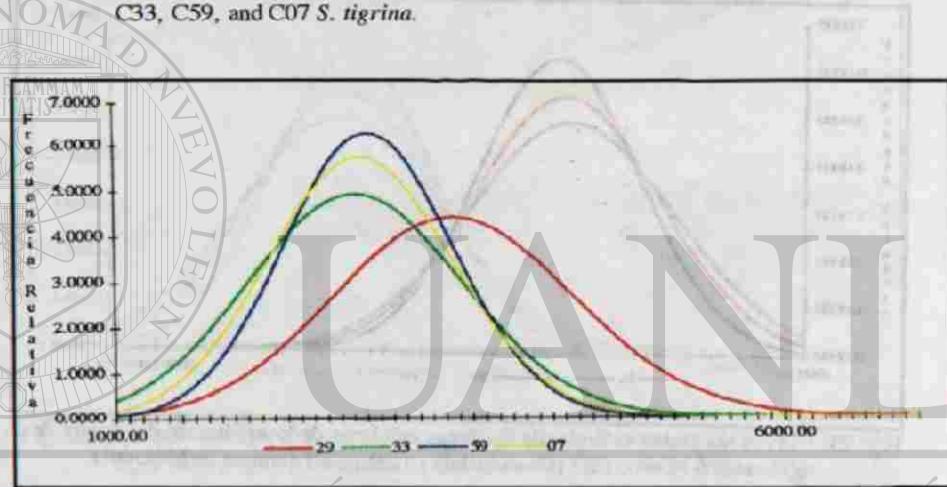


Fig. 25. Normal standard curves of abaxial epidermal cell areas of C29 *S. haselowiana* and C33, C59, and C07 *S. tigrina*.

The complete statistical data for C29 are in A III, pp. 7-8 (adaxial comparisons) and A III, pp. 14-15 (abaxial comparisons). In the adaxial comparisons (p. 7), C29, C33, C59, and C94 do not significantly differ from C29. However, on p. 15, all four samples differ significantly, abaxially, allowing the *S. haselowiana*, permitting its separation from *S. tigrina*.

S. tigrina and *S. nigrovilacea*

These two species have been long confused by botanical and horticultural authorities (Williams, 1894; Wilson, 1921; Arnold, 1928; Williams, 1951) and *Sander's List of Orchid Hybrids* (1996). All mention *S. nigrovilacea* as a variety of *S. tigrina* despite Beer's valid publication (1854), and the clarification by Kennedy (1977). *S. nigrovilacea* is a purely Mexican species while data from the adaxial and abaxial epidermal leaf cell areas infer *S. tigrina*, although pandemic, to be of South American origin. Statistically confirmed differences in both the adaxial (Table 9) and abaxial epidermal leaf cell areas of *S. tigrina* and *S. nigrovilacea* corroborate Kennedy's analyses of floral characteristics (1977). Curves for both specimens are offered in Figs. 5-8, Annex II - 2 and curves for their adaxial and abaxial epidermal cell areas are figured in this section (Figs. 26 and 27).

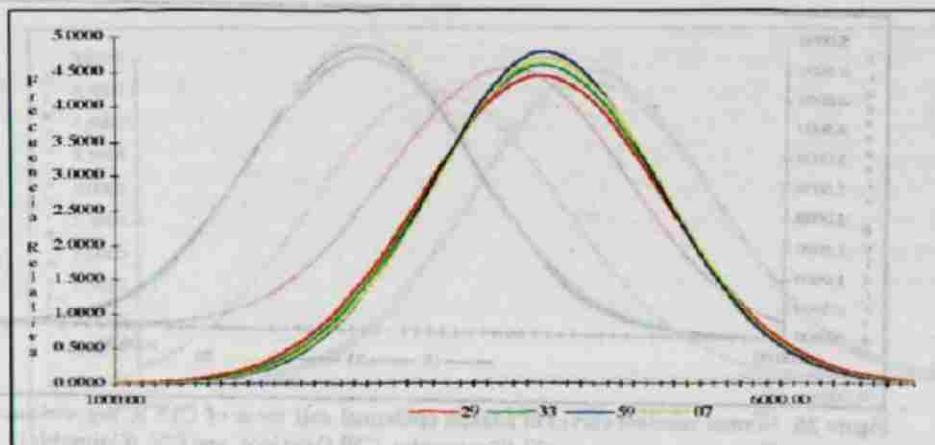


Fig. 24. Curvas normales estándar de las áreas celulares de la epidermis del haz de C29 *S. haselowiana* y C33, C59, C07 *S. tigrina*.

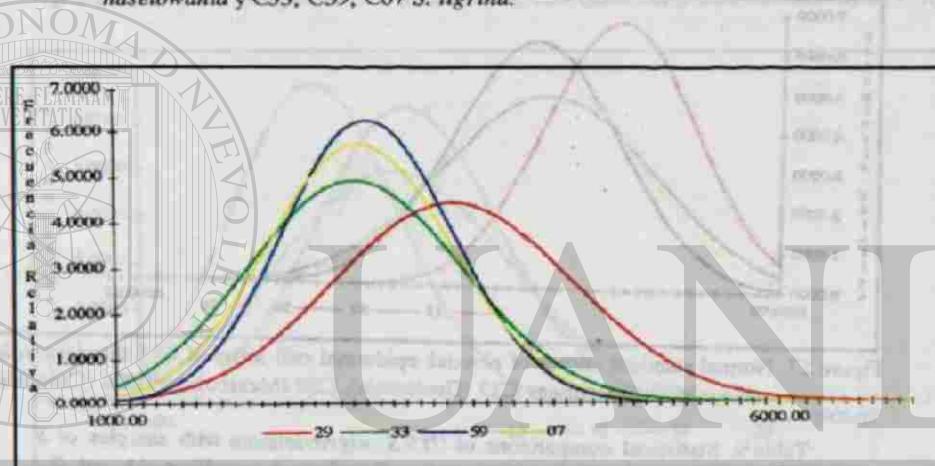


Fig. 25. Curvas normales estándar de las áreas celulares de la epidermis del envéz de C29 *S. haselowiana* y C33, C59, C07 *S. tigrina*.

La completa información estadística de C29 se encuentra en A III, pg. 7-8 (comparaciones del haz) y pg. 14-15 (comparaciones del envéz). En las comparaciones del haz, y no se diferencian significativamente de C29, sin embargo, en pg. 15, en las comparaciones del envéz, todos los cuatro ejemplares se diferencian significativamente de *S. haselowiana*, permitiendo su separación de *S. tigrina*.

S. tigrina y *S. nigroviolacea*

Estas dos especies han sido frecuentemente confundidas por autoridades botánicas y hortícolas (Williams, 1894; Wilson, 1921; Arnold, 1928, Williams, 1951) y la *Lista de Orquídeas Híbridas de Sander* (1966). Todos mencionan a *S. nigroviolacea* como una variedad de *S. tigrina* a pesar de la publicación realizada de Beer (1854), y la prevaleciente aclaración de Kennedy (1977). *S. nigroviolacea* es una especie netamente mexicana mientras que los datos de las áreas celulares de la epidermis foliar del haz (Cuadro 9) y del envéz muestran que *S. tigrina* es una especie de América del Sur (aunque pandémica). Las diferencias estadísticas fueron confirmadas en a través de las áreas de las células epidérmicas de haz y envéz de las hojas de *S. tigrina* y *S. nigroviolacea* los que corroboran el análisis de características florales de Kennedy (1977). Las curvas de ambos ejemplares se muestran en las figuras 5-8, Anexo II - 2 y las curvas de sus áreas celulares epidérmicas del haz y del envéz se presentan en esta sección (Figs. 26 y 27).

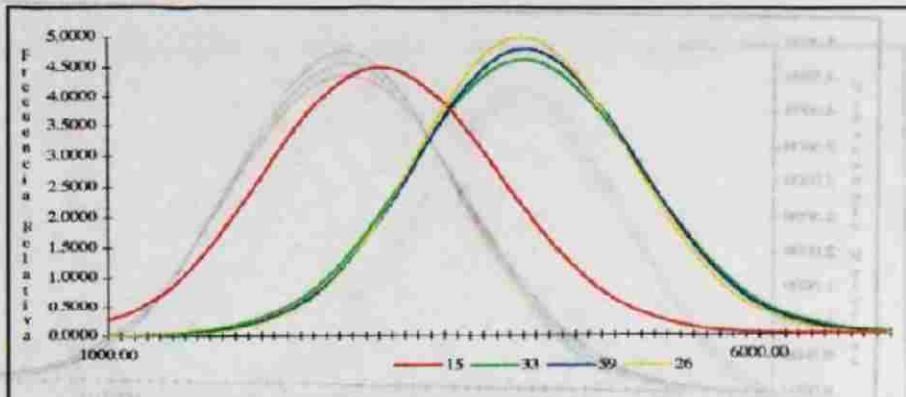


Figure 26. Normal standard curves of adaxial epidermal cell areas of C15 *S. nigrovilacea* and *S. tigrina* specimens C33 (Guatemala), C59 (Mexico), and C26 (Colombia).

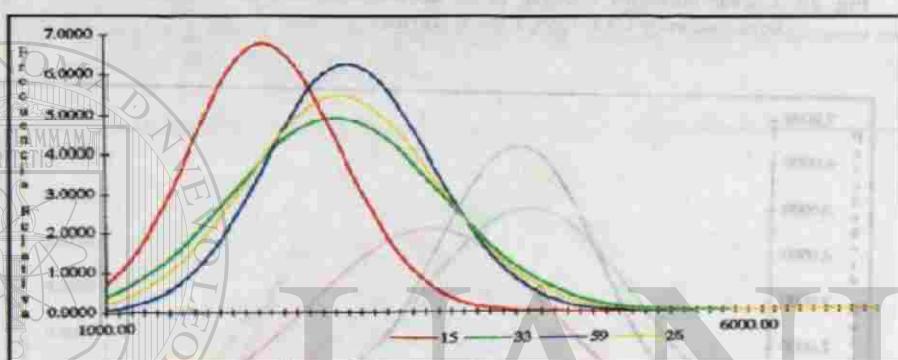


Figure 27. Normal standard curves of abaxial epidermal cell areas of C15 *S. nigrovilacea* and *S. tigrina* specimens C33 (Guatemala), C59 (Mexico), and C26 (Colombia).

Table 9. Statistical comparisons of C15 *S. nigrovilacea* with samples of *S. tigrina* (& C29 *S. haselowiana*). Data from Annex III, p. 11, col. 2

C15 <i>S. nigrovilacea</i> compared with:	Lower Conf. Level	Mean	Upper Conf. Level	Sig. Differing with at $\rho = 0.05$
C07 <i>S. tigrina</i>	-1662.8	-1129.8	-596.9	Yes
C59 <i>S. tigrina</i>	-1648.8	-1115.8	-582.9	Yes
C33 <i>S. tigrina</i>	-1637.2	-1104.3	-571.3	Yes
C26 <i>S. tigrina</i>	-1624.1	-1091.2	-558.2	Yes
C29 <i>S. haselowiana</i>	-1619.7	-1086.7	-553.7	Yes
C94 <i>S. tigrina</i>	-1612.5	-1079.5	-546.6	Yes

S. hernandezii

A leaf received in late September, 1996 was assigned numbers C53 and PI#300996-9, leafprints taken and data of the adaxial and abaxial leaf epidermis indicated it was *S. hernandezii*. In August, 1998 a call from the donor, Dr. Douglas Pulley of Los Gatos, California confirmed the prediction concerning this Mexican unknown species. The curves of C53 are illustrated with those of confirmed members C04, C49 *S. hernandezii* and C51 *S. intermedia* (Figs. 21-24, Annex II - 6).

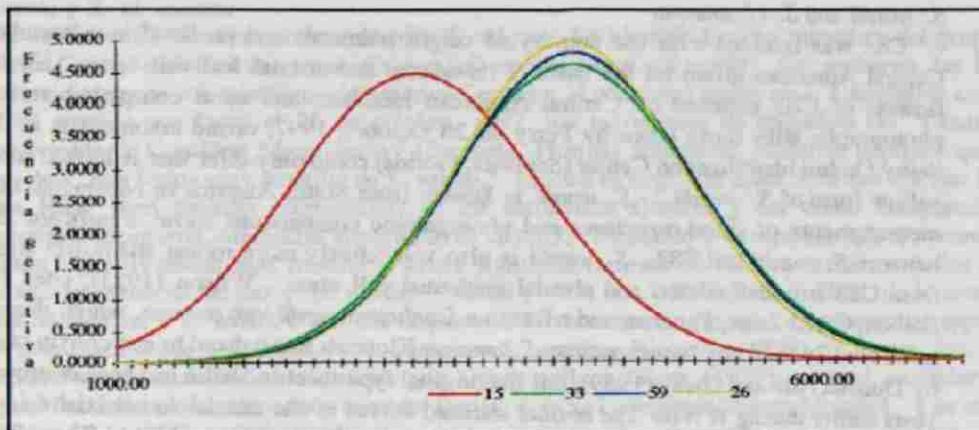


Fig. 26. Curvas normales estándar de las áreas celulares epidémicas del haz, de C15 *S. nigrovioletacea* y los ejemplares C33 (Guatemala), C59 (Méjico) y C26 (Colombia) de *S. tigrina*.

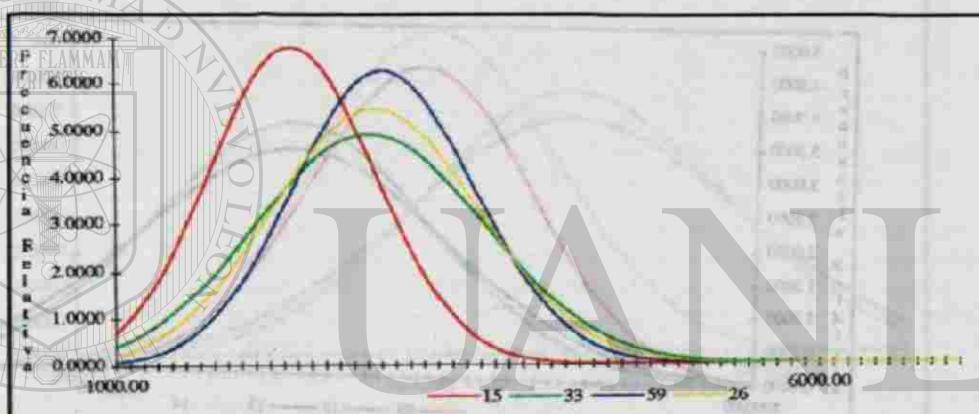


Fig. 27. Curvas normales estándar de las áreas celulares epidémicas del envéz de C15 *S. nigrovioletacea* y los ejemplares C33 (Guatemala), C59 (Méjico) y C26 (Colombia) de *S. tigrina*.

Cuadro 9. Comparaciones estadísticas de las áreas celulares epidémicas del haz de C15 *S. nigrovioletacea* con ejemplares de *S. tigrina* (& C29 *S. haselowiana*). Los datos del Anexo III, pg. 11, col. 2.

C15 <i>S. nigrovioletacea</i> con:	Nivel Conf. Menor	Promedio	Nivel Conf. Mejor	Sig. Diferencia a $p = 0.05$
C07 <i>S. tigrina</i>	-1662.8	-1129.8	-596.9	Sí
C59 <i>S. tigrina</i>	-1648.8	-1115.8	-582.9	Sí
C33 <i>S. tigrina</i>	-1637.2	-1104.3	-571.3	Sí
C26 <i>S. tigrina</i>	-1624.1	-1091.2	-558.2	Sí
C29 <i>S. haselowiana</i>	-1619.7	-1086.7	-553.7	Sí
C94 <i>S. tigrina</i>	-1612.5	-1079.5	-546.6	Sí

S. hernandezii

Una hoja recibida a finales de septiembre, 1996, registró números C53 y PL#300996-9, se la tomó improntas foliares, y los datos de las células de la epidermis foliar del haz y del envéz correspondieron a *S. hernandezii*. El 26 de agosto, 1998 una llamada del donador, Dr. Douglas Pulley de Los Gatos, California confirmó el predicción sobre este especie "Mexicano desconocido." Las curvas de C-53 se ilustran con aquellas de los miembros confirmados C04, C49 *S. hernandezii* y C51 *S. intermedia* (Figs. 21-24, Anexo II - 6).

S. wardii and *S. cf. amoena*

C83 was received with the country of origin unknown and predicted as a member of the Central American group on the basis of its adaxial and abaxial leaf cell areas. However, the flowers of C83 matched no Central American members and upon comparing various other photographs with those taken by Ferry on 26 October, 1997, orchid taxonomists at the Marie Selby Orchid Identification Center (Sarasota, Florida) could only offer that it looked like "a very yellow form of *S. wardii*." *S. wardii* is known from South America to Nicaragua, but critical measurements of floral structures and photographic comparisons show significant differences between *S. wardii* and C83. *S. wardii* is also vegetatively more robust and differs significantly from C83 in mean adaxial and abaxial epidermal cell areas. Wilson (1923), cites Powell of Balboa, Canal Zone, Panama, and refers to a *Stanhopea wardii* var. *amoena*, which describes C83 more closely than any other species. *S. amoena* Klotzsch was reduced to a synonym of *S. wardii* by Dunsterville and Garay (1959), but the original type sheet in Berlin had been destroyed several years earlier during WWII. The normal standard curves of the adaxial and abaxial epidermal cell areas are offered for comparison with those of *S. wardii* C12, C13, and C14, (Figs. 28 and 29), with tabular data following.

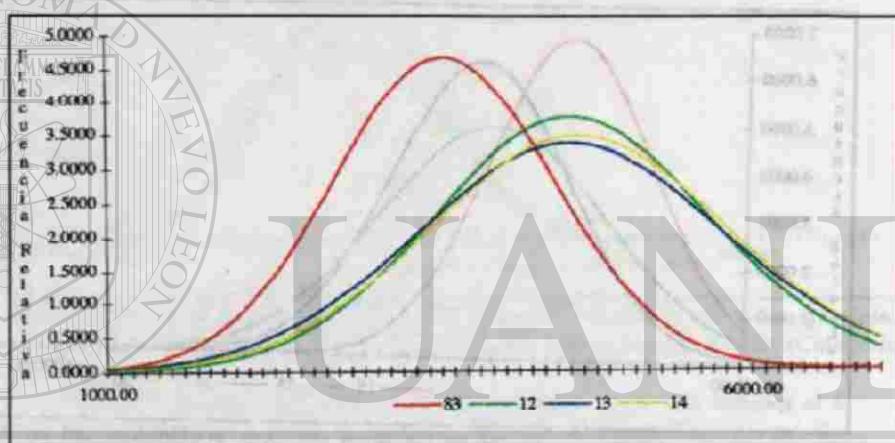


Figure 28. Normal standard curves of adaxial epidermal cell areas of C83 *S. cf. amoena* and C12, C13, C14 *S. wardii*.

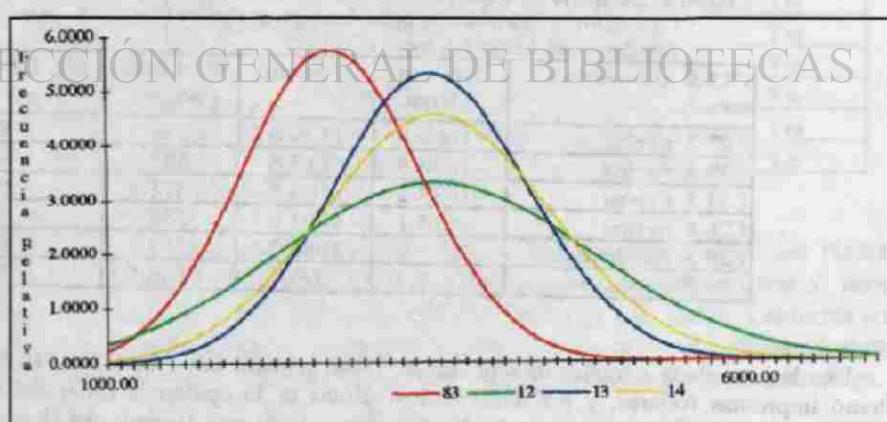


Figure 29. Normal standard curves of abaxial epidermal cell areas of C83 *S. cf. amoena* and C12, C13, C14 *S. wardii*.

S. wardii y *S. cf. amoena*

Se recibió C83 desconociéndose su país de origen. Se identificó como miembro del grupo de América Central en base a sus áreas celulares foliares del haz y del envéz. Sin embargo, las flores no coincidieron con los miembros de América Central y al comparar varias otras fotografías con las de C83 tomado por Ferry el 26 de octubre, 1997, los taxónomos de orquídeas del "Centro de Identificación de Orquídeas Marie Selby" (Sarasota, Florida) solamente pudieron expresar que era semejante a "una forma muy amarilla de *S. wardii*." La cual es conocida desde América del Sur hasta Costa Rica, pero medidas escrupulosas de las estructuras florales y así como comparaciones fotográficas mostraron diferencias significativas de C83. Poniendo a evidencias que *S. wardii* es también vegetativamente más robusta y difiere significativamente de C83 en términos de las áreas celulares epidérmicas del haz y del envéz. Wilson (1923) cita a Powell de Balboa, de la zona del Canal de Panamá y se refiere a una *Stanhopea wardii* var. *amoena*, la cual se asemeja al ejemplar C83 más cercana que a cualquier otra especie. *S. amoena* Klotzsch (1852) de Costa Rica, fue reducida a ser un sinónimo de *S. wardii* por Dunsterville y Garay (1959), pero el ejemplar tipo original fue destruido algunos años antes en Berlín, durante la Segunda Guerra Mundial. Las curvas normales del área de las células epidérmicas del haz y del envéz se muestran por manera comparativa entre aquellas de C12, C13, y C14 *S. wardii* (Figs 28 y 29).

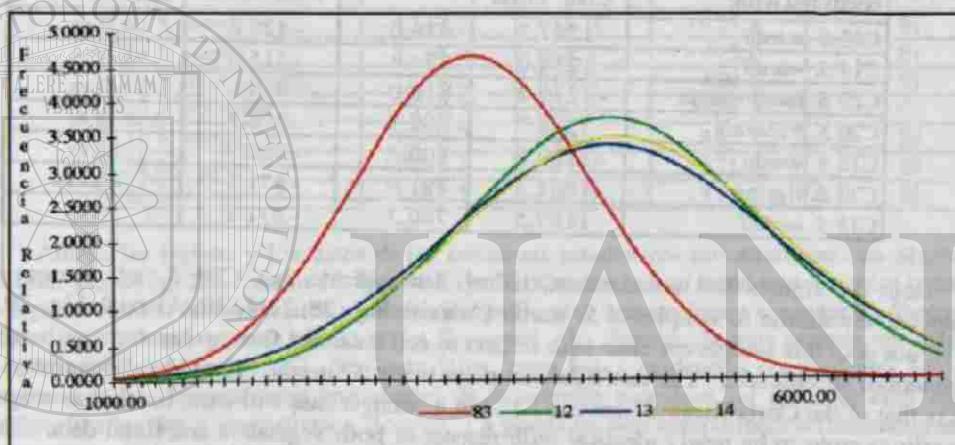


Fig. 28. Curvas normales estándar de las áreas celulares epidérmicas del haz de C83 *S. cf. amoena* y C12, C13, C14 *S. wardii*.

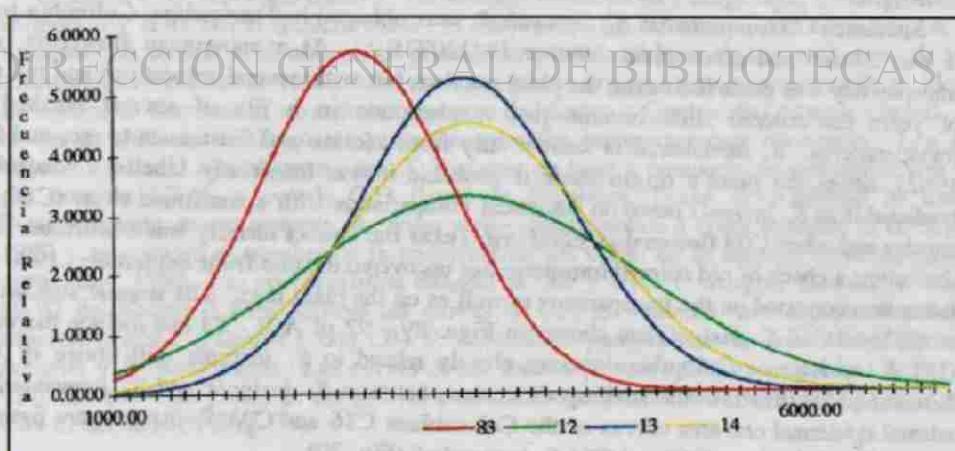


Fig. 29. Curvas normales estándar de las áreas celulares de epidérmicas del envéz de C83 *S. cf. amoena* y C12, C13, C14 *S. wardii*.

Table 10. Statistical comparisons of adaxial epidermal cell areas of C83 *S. cf. amoena* with samples of *S. wardii* and *S. Love Potion* (*S. connata* x *S. tigrina*). Data from A III 10, col. 1.

C83 <i>S. cf. amoena</i> compared with:	Lower Conf. Level	Mean	Upper Conf. Level	Sig. Differing with at $p = 0.05$
C14 <i>S. wardii</i>	-1575.7	-1042.7	-509.8	Yes
C62 <i>S. wardii</i>	-1572.8	-1039.8	-506.9	Yes
C60 <i>S. Love Potion</i>	-1556.3	-1023.3	-490.4	Yes
C12 <i>S. wardii</i>	-1518.8	-985.8	-452.8	Yes
C13 <i>S. wardii</i>	-1510.6	-977.7	-444.7	Yes

Table 11. Statistical comparisons of abaxial epidermal cell areas of C83 *S. cf. amoena* with samples of *S. wardii* and *S. Love Potion* (*S. connata* x *S. tigrina*). Data from A III 20, col. 3.

C83 <i>S. cf. amoena</i> compared with:	Lower Conf. Level	Mean	Upper Conf. Level	Sig. Differing with at $p = 0.05$
C62 <i>S. wardii</i>	-1247.2	-838.0	-428.8	Yes
C14 <i>S. wardii</i>	-1234.0	-824.8	-415.6	Yes
C29 <i>S. baselowiana</i>	-1219.2	-810.0	-400.8	Yes
C20 <i>S. tricornis</i>	-1518.7	-809.5	-391.3	Yes
C12 <i>S. wardii</i>	-1209.7	-800.5	-382.7	Yes
C32 <i>S. tigrina</i>	-1201.1	-791.9	-371.1	Yes
C13 <i>S. wardii</i>	-1189.5	-780.3	-371.1	Yes

Both the figures and columnar statistical data indicate that C83 *S. cf. amoena* is not vegetatively similar to samples of *S. wardii* (Adaxial: Fig. 28, Table 10; Abaxial: Fig. 29, Table 11), nor does this sample correlate with respect to cell areas and flower characters with any other *Stanhopea* species seen. The data infer this plant is not *S. wardii*. The closest description fitting it is that of the Costa Rican *S. amoena* Kl., but a stronger case will exist for this as a species if seedlings prove to be nearly identical with respect to both vegetative and floral data. Therefore the plant has been self-pollinated (by hand) and final taxonomic decisions are deferred.

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S. insignis

Specimen C03, reported as *S. hernandezii*, was obtained in Fusagasuga, Colombia in 1975. It was labeled and given plant number PI#120775-2. At a subsequent flowering, a color transparency was made indicating the plant number, but with several relocations and the passage of years the colored slide became just another one in a file of several hundred orchid transparencies. *S. hernandezii* is known only from Mexico and Guatemala (Ames and Correll, 1952), hence the plant's origin made it probable it was incorrectly labeled. Leafprint data predicted it as *S. insignis* based on statistical comparisons with a confirmed clone (C16) of that species and when C03 flowered at Edinburg, Texas the correct identity was confirmed. Months thereafter, a check of old colored transparencies uncovered the one from September, 1980 and the name was corrected on the transparency as well as on the plant tags. The normal standard curves of C03 and C16 *S. insignis* are shown in Figs. 89 - 92 of A II - 23 and include the curves of C52 *S. connata*, a Colombian species closely related to *S. insignis* with those of C04 *S. hernandezii* to illustrate the striking differences between *S. insignis* and *S. hernandezii*. The adaxial epidermal cell area curves of the Colombians C16 and C03 *S. insignis* are figured with those of the Mexicana C49 and C04 *S. hernandezii* (Fig. 30).

Cuadro 10. Comparaciones estadísticas de las células epidérmicas del haz de C83 *S. cf. amoena* con los ejemplares de *S. wardii* y *S. Love Potion* (*S. connata* x *S. tigrina*). Los datos del Anexo III 10, col. 1.

C83 <i>S. cf. amoena</i> con:	Nivel Conf. Menor	Promedio	Nivel Conf. Mayor	Dif. Sig. a nivel p = 0.05
C14 <i>S. wardii</i>	- 1575.7	- 1042.7	- 509.8	Sí
C62 <i>S. wardii</i>	- 1572.8	- 1039.8	- 506.9	Sí
C60 <i>S. Love Potion</i>	- 1556.3	- 1023.3	- 490.4	Sí
C12 <i>S. wardii</i>	- 1518.8	- 985.8	- 452.8	Sí
C13 <i>S. wardii</i>	- 1510.6	- 977.7	- 444.7	Sí

Cuadro 11. Comparaciones estadísticas de las células epidérmicas del envés de C83 *S. cf. amoena* con los ejemplares de *S. wardii* y *S. Love potion* (*S. connata* x *S. tigrina*). Los datos del A III 10, col. 20, col. 3.

C83 <i>S. cf. amoena</i> con:	Nivel Conf. Menor	Promedio	Nivel Conf. Mayor	Dif. Sig. a nivel p = 0.05
C62 <i>S. wardii</i>	- 1247.2	- 838.0	- 428.8	Sí
C14 <i>S. wardii</i>	- 1234.0	- 824.8	- 415.6	Sí
C29 <i>S. haselowiana</i>	- 1219.2	- 810.0	- 400.8	Sí
C20 <i>S. tricornis</i>	- 1518.7	- 809.5	- 391.3	Sí
C12 <i>S. wardii</i>	- 1209.7	- 800.5	- 382.7	Sí
C32 <i>S. tigrina</i>	- 1201.1	- 791.9	- 371.1	Sí
C13 <i>S. wardii</i>	- 1189.5	- 780.3	- 371.1	Sí

Ambas las figuras y los datos de las columnas estadísticas muestran que esta planta no es *S. wardii* (Haz: Fig. 28, Cuadro 10; Envés: Fig. 29, Cuadro 11), ni tiene este ejemplar correlación con respecto con los áreas celulares y características florales con cualquier ejemplar de *Stanhopea* visto. Los datos infieren que este planta no es *S. wardii*. La descripción más cercana que corresponde es aquella de *S. cf. amoena* Kl. de Costa Rica, pero habrá evidencias contundentes respecto a esta especie si los descendientes procedentes de su semilla muestran ser idénticamente cercanos con respecto a los datos vegetativos y florales. La planta ha sido autopolinizada (manualmente) y se han pospuesto decisiones taxonómicas firmes.

S. insignis

Ejemplar C03, reportado como *S. hernandezii*, obtenido en Fusagasuga, Colombia en 1975, fue etiquetado y se le dió el número clave Pl#120775-2. En la subsiguiente floración, se tomó una transparencia indicando el número de planta, pero debido al paso de los y al paso de los años la transparencia a colores se volvió sólo una más, por lo que no existe una certeza de su identificación. La especie *S. hernandezii* se reporta originaria de México y Guatemala (Ames y Correll, 1952), por lo que de obtención de la planta probablemente fue incorrectamente etiquetada. Los datos de la impronta foliar la identificaron como *S. insignis* en base a comparación estadística con un clor de ese nombre (C16), y cuando C03 floreció en Edinburg, Texas se confirmó la identificación. Posteriormente, meses después, al revisar viejas transparencias a color apareció la de Septiembre de 1980 y se corrigió el nombre en la transparencia así como en la etiqueta de la planta obtenida en septiembre, 1980. Las curvas normal estimadas de C03 y C16 *S. insignis* muestradas en las figuras 89-92 del Anexo II-23 e incluye las curvas de C52 *S. connata*, una especie Colombiana muy relacionada con *S. insignis* y con C04 *S. hernandezii* para ilustrar las notables diferencias entre *S. insignis* y *S. hernandezii*. Las curvas de las áreas celulares epidérmicas del haz de los ejemplares Colombianos C16 y C03 *S. insignis* se muestran con aquellas de los ejemplares Mexicanos C49 y C04 *S. hernandezii* (Fig. 30).

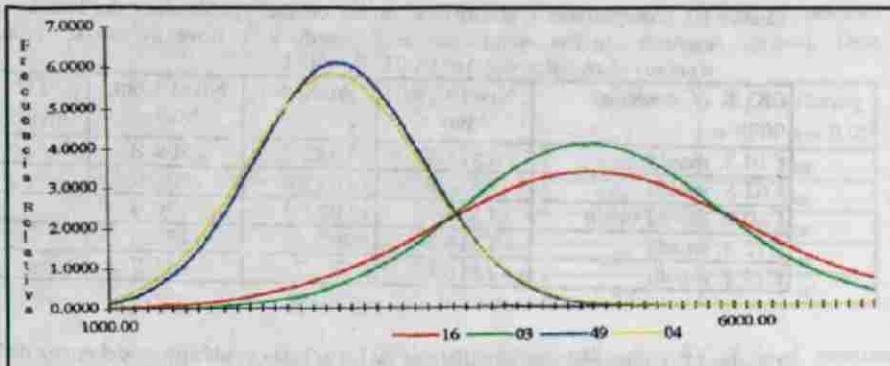


Fig. 30. Normal standard curves of adaxial epidermal cell areas of C16, C03 *S. insignis*, both of Colombia; and C49, C04 *S. hernandezii*, both of Mexico.

C77 *S. oculata*

An unknown received from Chiapas, Mexico in early May, 1997 was predicted by its leafprint data to be *S. oculata*. The identification as such was confirmed when the specimen flowered two months later.

VERITATIS

C69 *S. radiosoa*

In mid-January, 1997 a *Stanhopea* plant was obtained on loan from an individual in San Antonio, Texas who had grown it "for some years" without flowering. Over the rim of its plastic pot an inflorescence was erupting, when rebasketed in Edinburg. It was relocated in a substrate of sphagnum moss in a wire basket, and leafprinted. It was subsequently properly labeled and a report given to the owner concerning observations made, actions taken, and the resultant taxonomic conclusions.

For most of this genus the vegetative portion of the plant is held upright and the inflorescence exits the bottom of the basket with the flowers displayed pendulously. The tendency to upright flowering is known (e.g. *ecornuta*, *martiana*), but is not the norm for this genus. It had been suggested the plant might be *S. martiana*, an upright flowering member of this genus, but the adaxial and abaxial leafprint data did not support this hypothesis. It was unlikely the plant had come from Central or South America. Thus with limited species data at hand, this left *S. ecornuta*, a white Central American, as a possibility. However, adaxial epidermal cell data inferred this was a member of the Mexican group (Table 7). When it flowered, the species proved to be *S. radiosoa*, a species from southwestern Mexico. It had not "fit" with other confirmed data because this was the first member of this species to be available for statistical analyses.

S. radiosoa is known from Tepic, Nayarit, Mexico (Dodson, 1963; Kennedy, 1972), at the northern range of which includes *S. saccata*; two plants long confused by taxonomists (Williams, 1894; Dodson, 1963) describing individual flowers without regard to the plant as the species unit subject to variation of a genus over a geographical range as clarified by Grant (1963, 1981). The normal standard curves of both adaxial and abaxial epidermal cell leaf areas illustrate that *S. radiosoa* differs significantly in both respects from *S. saccata* (Figs. 31 and 32).

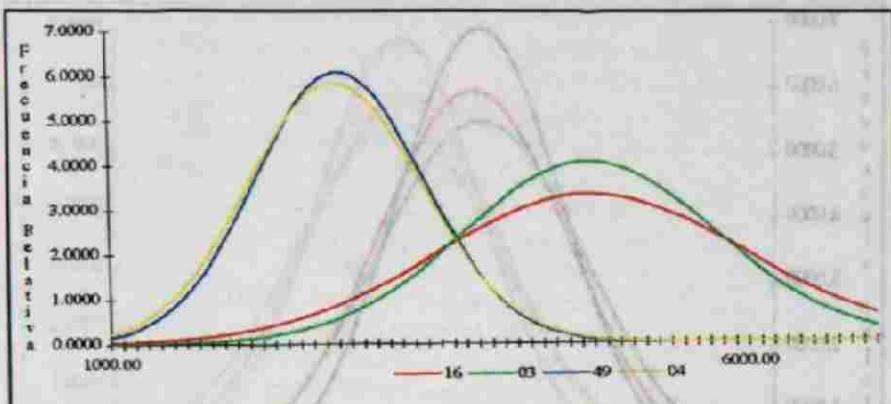


Fig. 30. Curvas normales estándar de las áreas celulares epidémicas del haz de C16, C03 *S. insignis*, ambos de Colombia y C49, C04 *S. hernandezii*, ambos de México.

C77 *S. oculata*

Recibió un ejemplar de origen desconocido procedente de Chiapas, México. A principios de Mayo de 1997 que fué posteriormente identificado por sus improntas foliares como *S. oculata*. La identificación se confirmó dos meses después al momento de la floración.

C69 *S. radiosoa*

A mediados de Enero de 1997, un ejemplar de *Stanhopea* se recibió en préstamo de un particular de San Antonio, Texas quien la cultivó "durante algunos años" sin florecer. Se tomó una inflorescencia emergente y fue replantada en Edinburg. La planta fué colocada en un cesto de alambre con un substrato de musgo sphagnum y se le tomaron improntas foliares. Subsecuentemente fue etiquetada apropiadamente y se reporte al dueño sobre las observaciones hechas, las acciones tomadas y las conclusiones taxonómicas resultantes. La ausencia de flores fué debido a que las condiciones dentro del recipiente no eran las adecuadas para permitirleemerger.

Para la mayoría de éste género la porción vegetativa de la planta se mantiene erecta y la inflorescencia se expone a través del fondo del cesto exhibiendo las flores en forma pendular. La tendencia a florecer erectamente es conocida (ejemplo: *S. ecornuta* y *S. martiana*) pero no es la regla en éste género. La planta podía ser *S. martiana*, miembro de floración erecta de este género, pero los datos de las improntas foliares del haz y del envéz no apoyaron esta hipótesis. Era improbable que la planta hubiera procedente de América Central o América del Sur. Por lo tanto (consecuencias personal), esta quedó como posible *S. ecornuta*, especie blanca de Centroamérica. Sin embargo los datos de las células epidémicas del haz mostraron que esta era un miembro del grupo Mexicano (Cuadro 7). Cuando la planta floreció, demostró ser *S. radiosoa*, especie del sur oeste de México. La planta resultó ser el primer miembro de la especie disponible para análisis estadísticos.

S. radiosoa ha sido reportada de Tepic, Nayarit, México (Dodson, 1963; Kennedy, 1972), en el área norte dentro el cual incluye *S. saccata*; y estas dos plantas por mucho tiempo confundidas por los taxónomos (Williams, 1894; Dodson, 1963) por la descripción de flores individuales, sin considerar que la planta como la unidad de la especie se encuentra sujeta a variación sobre un área geográfica como fué aclarado por Grant (1963, 1981). Las curvas normales estándar de las áreas celulares, ilustran que *S. radiosoa* difiere significativamente en ambos aspectos de *S. saccata* (Figs. 31 y 32).

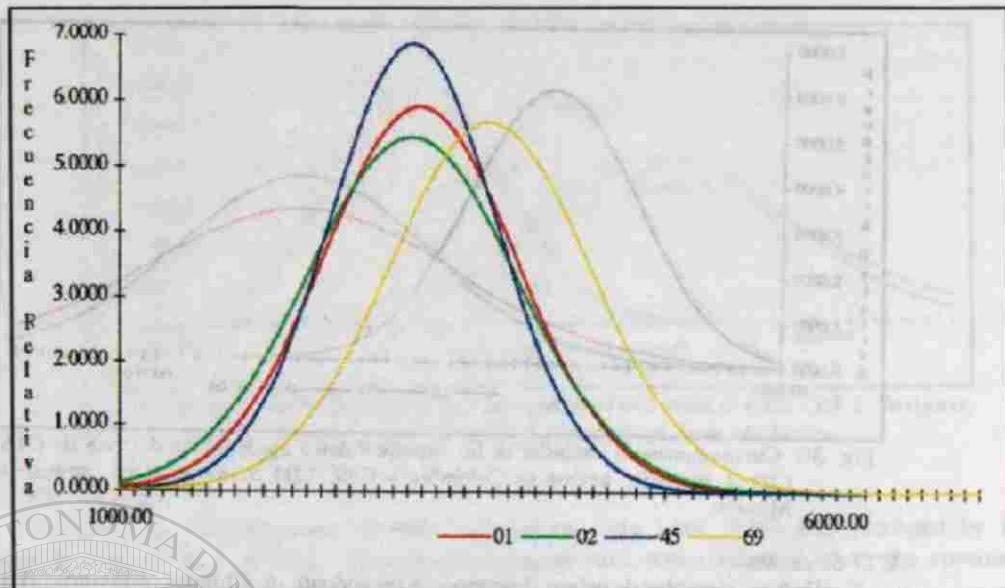


Fig. 31. Normal standard curves of adaxial epidermal cell areas of C01, C02, C45 *S. saccata* and C69 *S. radiosoa*.

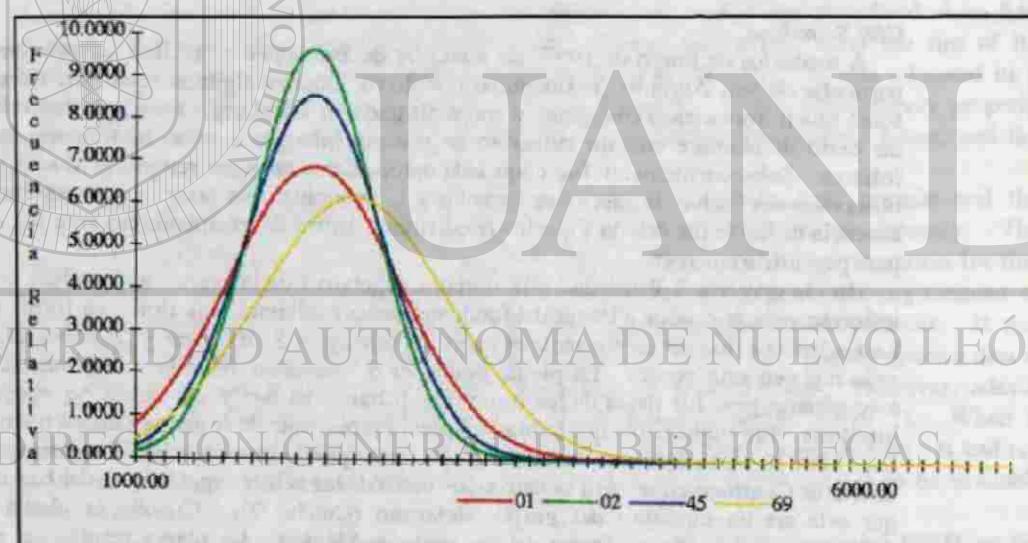
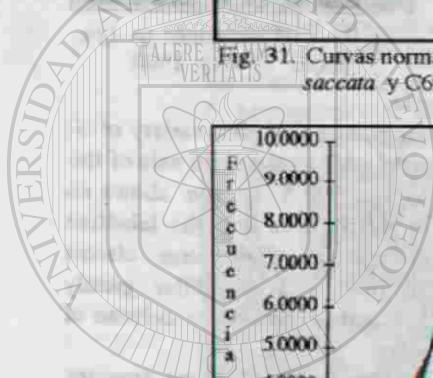


Figure 32. Normal standard curves of abaxial epidermal cell areas of C01, C02, C45 *S. saccata* and C69 *S. radiosoa*.

S. sp. ign. C93 and C98

Specimen C93, Pl#010598-1 was said to be a green flowered *Stanhopea*. It was leafprinted in Huatusco, Veracruz, Mexico on 01 May, 1998. The site of its original location in the local jungle was visited and recorded with a handheld Global Position Sensor (GPS) as N. 19°18', W. 96°57'; elevation ca. 1200m. Its mean adaxial epidermal cell area places it between *S. costaricensis* and *S. cf. amoena*, but its abaxial epidermal cell area mean places it firmly in the Mexican group between *S. saccata* and *S. maculosa*. Local people said that the flowers had horns (ruling out *S. ecornuta*). However, from the description given by local individuals, it seemed possible the plant might be an alba variety of *S. oculata*.



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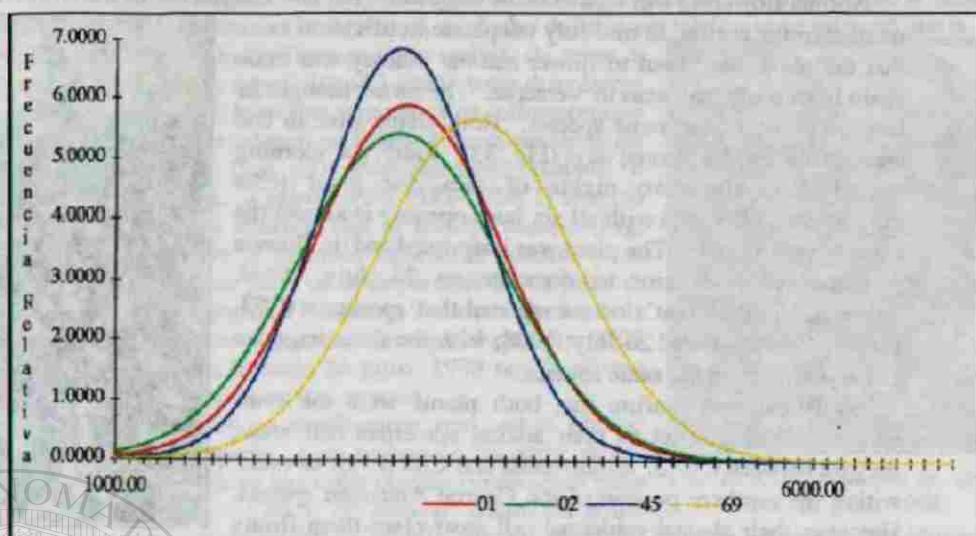


Fig. 31. Curvas normales estándar de las áreas celulares epidémicas del haz de C01, C02, C45 *S. saccata* y C69 *S. radiosoides*.

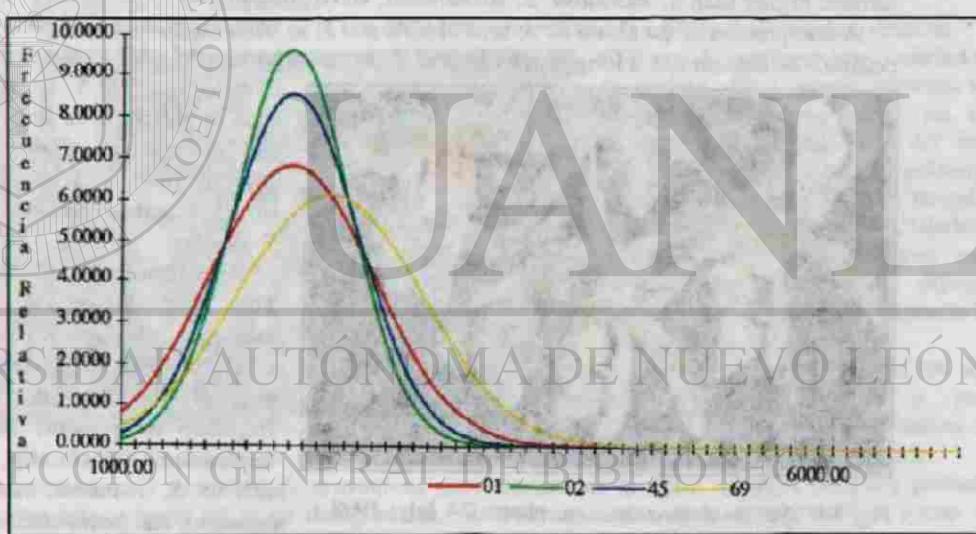


Fig. 32. Curvas normales estándar de las áreas celulares epidémicas del envéz de C01, C02, C45 *S. saccata* y C69 *S. radiosoides*.

S. spp. ign. C93 and C98

Se mencionó que el ejemplar C93, PI#010598-1 era una *Stanhopea* de flores verdes. A esta planta se le tomaron improntas en Huatusco, Veracruz, México el primero de Mayo de 1998. El sitio de su localización original en la selva local fue visitado y mediante un Geoposicionador (GPS) se obtuvieron sus coordenadas N. 19°18', W. 96°57' y una elevación de aproximadamente 1200 sn. m.. El promedio del área de sus células epidémicas del haz lo ubican entre *S. costaricensis* y *S. cf. amoena*, pero el promedio de las áreas celulares epidémicas del envéz lo ubican firmemente en el grupo mexicano entre *S. saccata* y *S. maculosa*. Los residentes se dijeron que las flores tenían cuernos (descartando a *S. ecornuta*). Sin embargo a partir de la descripción dada por personas de la localidad, admite la posibilidad de que la planta pueda ser una variante blanca de *S. oculata*.

Normal flowering was said to be in early May, but was delayed due to the extraordinarily dry weather in the region. In mid July telephone notification came that the plant was about to flower and the journey was made again from southern Texas to Veracruz. The owner thought he had two plants of the same species. Both plants were in bud and remained so for several days (Fig. 33). Later, the morning of departure, after two nights of rain, the plant (C98 Pl#240798-1) flowered with all six buds opening at almost the same time (Fig. 34). The plant was leafprinted and its flowers photographed just prior to departure on 24 July, 1998. Subsequently the plant's owner reported that specimen (C93, Pl#010598-1) flowered 26 July, 1998, with the same fragrance and appeared to be the same species.

Statistical data confirm that both plants were the same species. With respect to their adaxial epidermal cell areas, they lie between C17 *S. costaricensis* and C83 *S. cf. amoena*, within the northern portion of the Central American species. However, their abaxial epidermal cell areas place them firmly in the Mexican complex; lower in mean areas than *S. martiana*, *S. radiosa*, *S. graveolens*, *S. nigrovilacea*, and *S. saccata*; higher than *S. maculosa*, *S. hernandezii*, and *S. intermedia*.

A comparison of the floral structures of C98 and *S. oculata* eliminates C98 as a variety of *S. oculata*. *S. oculata* has a long slender hypochile set at approximately 45° to the main axis of the column, but C98 *S. sp. ign.* shows no such angularity. In fact, the labellum and column of C98 form almost straight lines. These differ greatly from the arcuate form of the column of *S. oculata*.

The flowers of C98 are fragrant. This may differentiate it from *S. inodora* in which fragrance is absent or nearly so, and *S. graveolens* which is generally a golden color and in which fragrance is present, but somewhat unpleasant. Structurally, other species such as *S. martiana*, *radiosa*, *saccata*, *maculosa*, and *hernandezii* are all more or less saccate. *S. intermedia* also has a small saccate projection as well, and is known only from the western slopes of southwestern Mexico, in the area of Tepic. This leaves only *S. tigrina* and *nigrovilacea* which have very large, heavily fragrant, colorful flowers. C93 and C98 may be plants of the very rare *S. ruckeri*, but no vegetative material, flowers, or good quality color photographs have been seen of this species.

Comparing floral characteristics and leafprint data with other known *Stanhopea* species, these plants differ significantly from all other *Stanhopea* species. These data infer that this is a new species, but acting conservatively, four flowers of the C98 sample were "selfed" (pollen exchanged between flowers on the same plant) on 24 July, 1998, and description of this plant as a new species will await the results of those pollinations. If these plants are a natural hybrid the results of selfing should settle the question. However, if the plant "selfs" and flowers true to this "Type" and additional leafprint comparisons continue to show its seedlings differing from all other species, it may be described and published as a *species novum* under the rules of the International Code of Botanical Nomenclature (ICBN).



Fig. 33. C93 *Stanhopea* sp. ign.
photo: 22 July, 1998



Fig. 34. C98 *Stanhopea* sp. ign. photo: 24 July, 1998.



La floración normal de esta planta se dijo sería en mayo, pero fué retrasada debido al clima extraordinariamente seco en la región. A mediados de julio vía telefónica se informó que la planta estaba a punto de florecer y se realizó de Texas a Veracruz una segunda expedición. El dueño tenía dos plantas y pensaba que eran de la misma especie. Las inflorescencias de ambas plantas estaban en botón y permanecieron así por algunos días más (Fig. 33). Posteriormente, después de dos noches de lluvia, la planta (C98 Pl#240798-1) floreció con los seis botones abriendo casi al mismo tiempo (Fig. 34). A la planta se le tomaron impresiones foliares y se fotografiaron las flores justo antes de partir el 24 de julio de 1998. Antes de la llegada a Edinburg, Texas, el dueño de la planta llamó de Veracruz, para notificar que el ejemplar (C93 Pl #010598-1) había floreado 26 julio, 1998 con la misma fragancia y parecía ser la misma especie.

Los datos estadísticos confirmaron que ambas plantas eran de la misma especie. Con respecto a las áreas de las células epidérmicas de su haz estas plantas permanecen entre C17 *S. costaricensis* y C83 *S. cf. amoena*, dentro del grupo norte de las especies de América Central. Sin embargo las áreas de sus células epidérmicas del envés la sitúan firmemente en el complejo mexicano, con promedio de áreas menor que *S. martiana*, *S. radios*a, *S. graveolens*, *S. nigroviolacea* y *S. saccata*; mayor que *S. maculosa*, *S. hernandezii* e *S. intermedia*.

El estudio comparativo de la estructura floral de C98 con aquella de *S. oculata* descarta



Fig. 34. C98 *Stanhopea*, sp. ign. foto: 24 julio, 1998.

Fig. 33. C93 *Stanhopea*, sp. ign. foto: 22 julio, 1998.
Ausente o casi ausente y *S. graveolens* generalmente es de color amarillo dorado y presenta fragancia, aunque un poco desagradable. Estructuralmente, otras especies tales como *S. martiana*, *S. radios*a, *S. saccata*, *S. maculosa*, y *S. hernandezii* todas son más o menos saculadas. *S. intermedia* también tiene unas pequeñas proyecciones saculadas, y se conoce solamente en la vertiente del sur oeste de México, en el área de Tepic, Nayarit. Estas hojas se encuentran en *S. tigrina* y *nigroviolacea*, cuyas flores son grandes, bastante coloridas y fragantes. Los ejemplos C93 y C98 pueden ser plantas de especie *S. ruckeri*, de la cual no se ha visto material vegetativa, flores, o fotografías de color y de buena calidad.

Comparando las características florales y los datos sobre las impresiones foliares con otras especies conocidas de *Stanhopea*, estas plantas difieren significativamente de todas las otras especies de *Stanhopea*. Estos datos nos permitirían inferir que pudiera ser una especie nueva, pero actuando de manera cautelosa, cuatro flores del ejemplar C98 fueron autopollinizadas (intercambiado polen entre flores de la misma planta) el 24 de julio, 1998, y la descripción de esta planta como una especie nueva se encontrará el finición de los resultados obtenidos posteriores la polinización. Si el resultado concuerda constante y fielmente al "tipo" y las comparaciones de impresiones foliares adicionales continuaren mostrándola diferente de las otras especies, entonces se procederá con la descripción y publicación de este ejemplar como una *species novum* bajo las reglas del Código Internacional de Nomenclatura Botánica (ICBN).



Fig. 33. C93 *Stanhopea*, sp. ign. foto: 22 julio, 1998.

C98 que de pueda ser una variedad de *S. oculata*. Esta especie presenta un hipóquilo delgado y largo en un ángulo de aproximadamente 45° con relación eje principal de la columna pero C98 *S. sp. ign.* no muestra dicho ángulo. De hecho, el labelo y la columna de C98 forman casi líneas rectas. Estos difieren grandemente de la forma arqueada de la columna de *S. oculata*.

Las flores de ejemplar C98 son agradablemente fragantes y esto puede diferenciarla de *S. inodora* en la cual la fragancia se encuentra

6.3. APPLICABILITY TO OTHER GENERA

Govenia, *Malaxis*, and *Spiranthes*

C35 *Govenia utriculata*, C38 *Malaxis corymbosa*, and C86 *Govenia superba* were leafprinted in situ when in flower. At the same time C37, an unidentified *Govenia sp.* without flowers, was also leafprinted. Combining the data from the individual sample sheets showed the adaxial and abaxial epidermal cell areas of C35 *G. utriculata* to be significantly smaller than those of C86 *G. superba* (Table 12). Adaxial and abaxial epidermal cell area data of the unknown, C37, correlated with C86 *G. superba* ($p = 0.05$). Consequently, C37 was predicted to be *G. superba*, which was confirmed a year later when the site was revisited and plant C37 was observed bearing the yellow flowers of *G. superba*; not the white ones of *G. utriculata*.

Table 12. Areas and standard deviations of adaxial and abaxial epidermal cells of *Govenia*, *Malaxis*, and *Spiranthes* samples.

C#, Species, & Annex I page number	Ad Area	Ad Std dev	Ab Area	Ab Std dev
C35 <i>Govenia utriculata</i> 34	2918.52	558.03	2134.47	616.26
C37 <i>Govenia sp. ign.</i> (<i>superba</i>) 36	4835.56	683.75	3568.45	732.37
C86 <i>Govenia superba</i> 64	4926.81	664.80	3450.62	878.66
C38 <i>Malaxis corymbosa</i> 37	4031.10	690.40	2701.09	671.25
C36 <i>Spiranthes sp. ign.</i> 35	11600.04	3470.34	6162.38	1423.13
C39 <i>Spiranthes sp. ign.</i> 38	8970.03	2513.52	5605.78	1347.42

The normal standard curves (Figs. 35 and 36) illustrate the closeness of the means of the adaxial and abaxial epidermal cell areas of C37 and C86 *G. superba* as well as the displacement of the means of C35 *G. utriculata* from those of C37 and C86 *G. superba*. From these figures, it will be seen that the normal standard curves of specimens of C38 *Malaxis corymbosa* are similar in shape to those of *Govenia* species. Also, the adaxial and abaxial means of C38 *M. corymbosa* (Ad: 4031.10; Ab: 2701.09) are within the respective spread of these members of the genus *Govenia* (Ad: 2918.52 to 4926.81; Ab: 2134.47 to 3568.45). However, these genera differ sufficiently in gross morphology both vegetatively and florally to avoid confusing plants of *Govenia* with those of *Malaxis* when encountered in nature. The data of the two *Spiranthes* samples C36 and C39 (Table 12) infer that they are two different species, but this hypothesis remains unconfirmed.

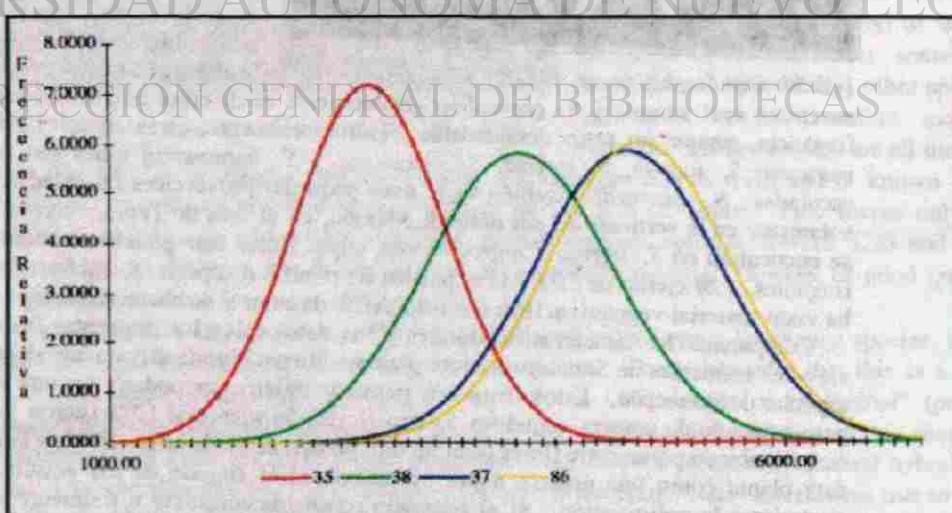


Fig. 35. Normal standard curves of adaxial epidermal cell areas of C35 *Govenia utriculata*, C38 *Malaxis corymbosa*, y C37, C86 *G. superba*.

6.3. APLICACION A OTROS GENEROS

Govenia, Malaxis, and Spiranthes

Se tomaron improntas de los ejemplares C35 *Govenia utriculata*, C38 *Malaxis corymbosa*, y C86 *Govenia superba* in situ cuando floreaban. Al mismo tiempo, una *Govenia* no identificada, C37, y sin flores, también fue tomada en impronta. Al combinar los datos de las hojas individuales, se mostró que las áreas celulares epidérmicas de haz y envéz de C35 *G. utriculata* eran significativamente menores que las de *G. superba* (Cuadro 12). Los datos de las áreas celulares epidérmicas de haz y envéz del no identificado C37 se correlacionaban con C86 *G. superba*. Consecuentemente, se predijo que la C37 sería *G. superba*, lo cual se confirmó un año después cuando al revisitar la localidad se observó que la planta tenía las flores amarillas de *G. superba*, y no las flores blancas de *G. utriculata*.

Cuadro 12. Áreas y desviaciones estándar de las células epidérmicas del haz y del envéz de los ejemplares de *Govenia, Malaxis, and Spiranthes*.

C#, Species, & pag. númer. de Anexo I	Área del haz	Desv Estd del Haz	Área del Envéz	Desv Estd del Envéz
C35 <i>Govenia utriculata</i>	34 2918.52	558.03	2134.47	616.26
C37 <i>Govenia sp. ign. (superba)</i>	36 4835.56	683.75	3568.45	732.37
C86 <i>Govenia superba</i>	64 4926.81	664.80	3450.62	878.66
C38 <i>Malaxis corymbosa</i>	37 4031.10	690.40	2701.09	671.25
C36 <i>Spiranthes sp. ign.</i>	35 11600.04	3470.34	6162.38	1423.13
C39 <i>Spiranthes sp. ign.</i>	38 8970.03	2513.52	5605.78	1347.42

Las curvas normal estándar normales (Figs. 35 y 36) ilustran la cercanía de los promedios de las áreas de las células de haz y envéz de C37, C86 *G. superba*, así como la separación de los promedios de C35 *G. utriculata* de los C37, C86 *G. superba*. De dichas figuras, se desprende que las curvas estándar normales de los ejemplares de C38 *M. corymbosa* son de forma similar a la de especies de *Govenia*. Igualmente, los promedios de haz y envéz de C38 *M. corymbosa* (H: 4031.10; E: 2701.9) caen entre las curvas respectivas de los miembros del género *Govenia* (H: 2918.52 a 4926.81; E: 2134.47 a 3568.45). Sin embargo, dichos géneros difieren suficientemente en su morfología gruesa tanto vegetativa como floralmente como para impedir confundir las plantas de *Govenia* con las de *Malaxis* cuando se encuentre en la naturaleza. Los datos de las dos muestras de C36, C39 *Spiranthes* (Cuadro 12) permiten inferir que son dos especies distintas, pero esto permanecerá hipotético hasta que se confirme.

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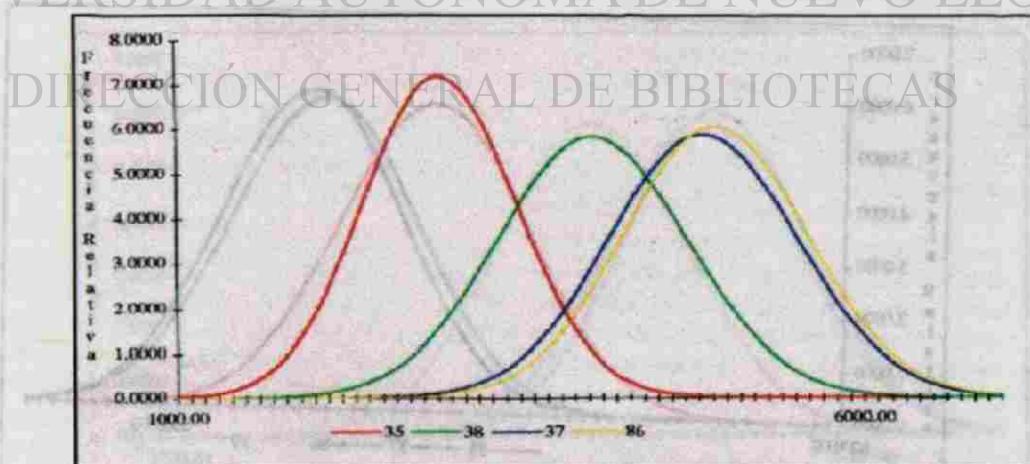


Fig. 35. Curvas normales estándar de las áreas epidérmicas celulares del haz de C35 *Govenia utriculata*, C38 *Malaxis corymbosa*, y C37, C86 *G. superba*.

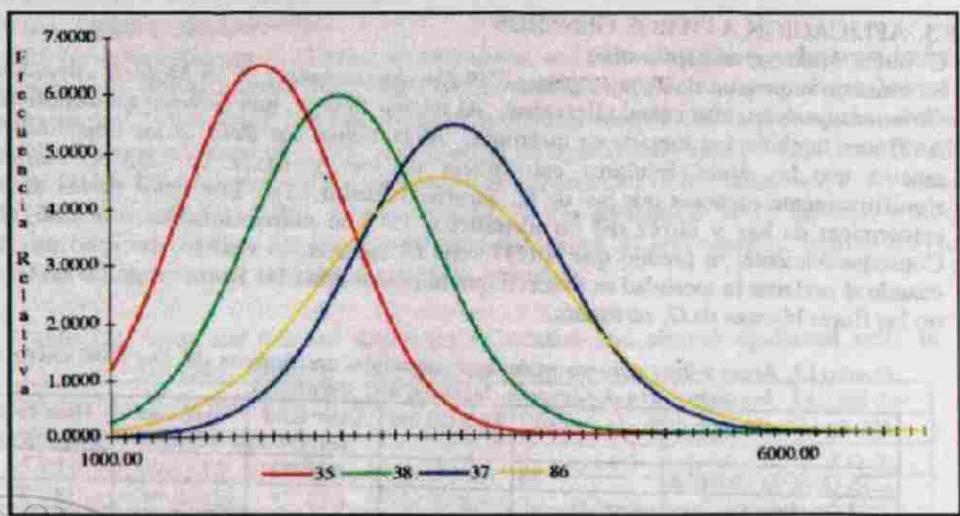


Fig. 36. Normal standard curves of abaxial epidermal cell areas of C35 *Govenia urticulata*, C38 *Malaxis corymbosa*, y C37, C86 *G. superba*.

The normal standard curves of the adaxial epidermal cell areas of the four samples are figured below (Fig. 37). Cell area sizes of *Spiranthes* are much larger and hence more primitive (Ad: $8970.03\mu^2$ to $11600.14\mu^2$, Ab: $5605.78\mu^2$ to $6162.38\mu^2$) than those of species of *Govenia* or *Malaxis* (*Govenia* Ad $2918.52\mu^2$ to $4926.81\mu^2$ and Ab: $2134.47\mu^2$ to $3568.45\mu^2$, which includes *Malaxis* at Ad: $4031.10\mu^2$ and Ab: $2701.09\mu^2$). This agrees with the predominantly flower oriented taxonomy of Dressler (1993) who places the subfamily Spiranthoideae holding the genus *Spiranthes* as evolutionarily more primitive to the later evolved subfamily Orchidoideae which is followed by the even later subfamily Epidendroideae which holds both *Govenia* and *Malaxis*.

Curves of the *Govenia* specimens and *Malaxis corymbosa* are shown in Figs. 65-68 of A II - 17. Curves of C38 *M. corymbosa*, C37, C86 *G. superba*, and C39 *Spiranthes* sp. ign. are shown in Figs. 69-72 of Annex II - 18, and curves of *Govenia* and *Spiranthes* specimens may be seen in Figs. 73-76 of Annex II - 19.

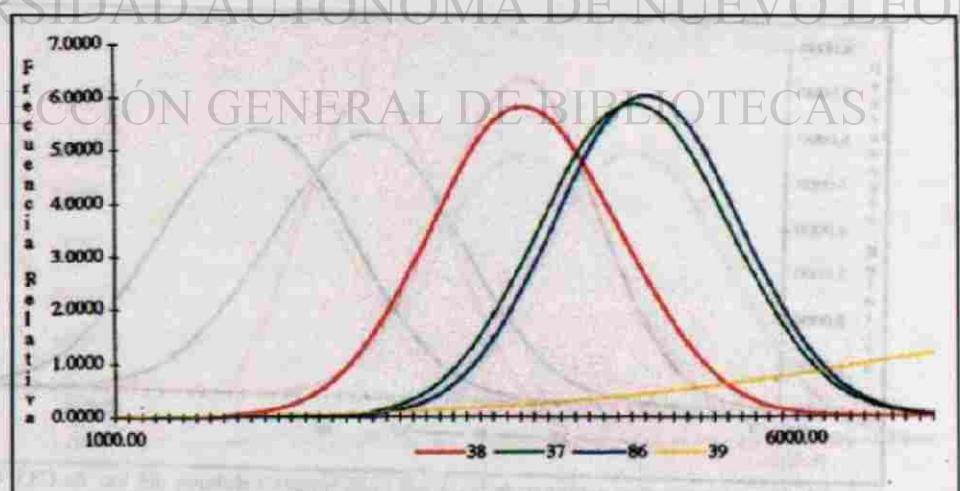


Fig. 37. Normal standard curves of adaxial epidermal cell areas of C38 *M. corymbosa*, C37, C86 *G. superba*, and C39 *Spiranthes* sp. ign.

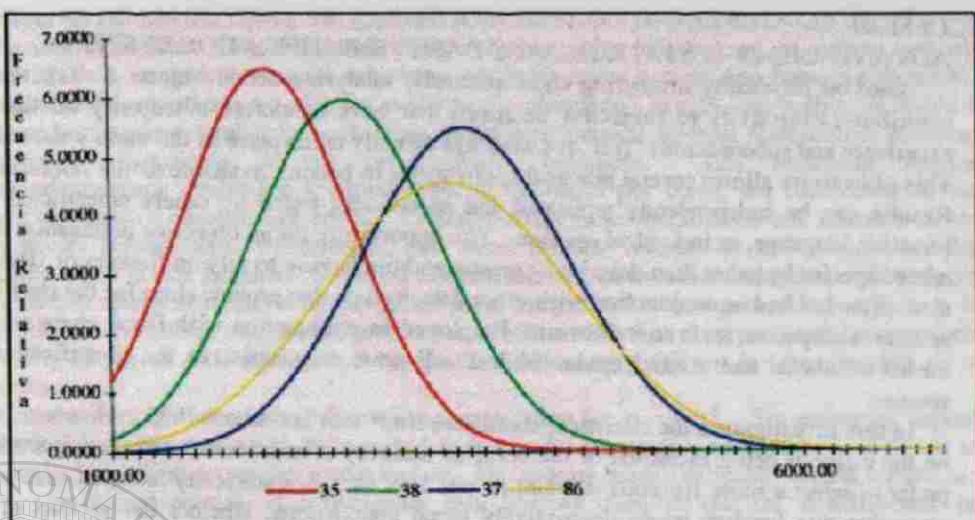
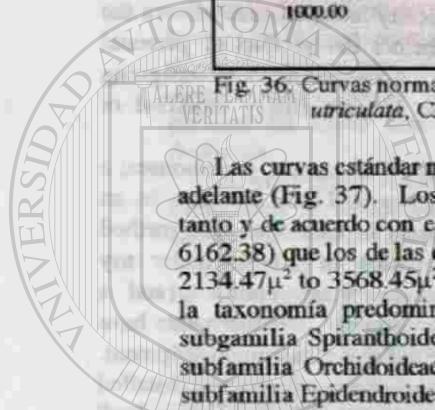


Fig. 36. Curvas normales estándar de las áreas epidérmicas celulares del envés de C35 *Govenia utriculata*, C38 *Malaxis corymbosa*, y C37, C86 *G. superba*.

Las curvas estándar normales de las áreas de células epidérmicas de cuatro muestras se ilustran adelante (Fig. 37). Los tamaños de las áreas celulares de *Spiranthes* son mucho mayores, y por tanto y de acuerdo con este estudio mas primitivas (H: $8970.03\mu^2$ a $11600.14\mu^2$; E: $5605.78\mu^2$ a $6162.38\mu^2$) que los de las especies de *Govenia* o *Malaxis* (*Govenia* H: $2918.52\mu^2$ a $4926.81\mu^2$ y E: $2134.47\mu^2$ to $3568.45\mu^2$, que incluye *Malaxis* a H: $4031.10\mu^2$ y E: $2701.09\mu^2$). Esto coincide con la taxonomía predominantemente orientada a las flores de Dressler (1993) quien coloca la subgamilia Spiranthoideae con el género *Spiranthes* como evolutivamente mas primitivo que la subfamilia Orchidoideae evolutivamente posterior y que es seguida aún mas posterior por la subfamilia Epidendroideae que contiene ambas *Govenia* y *Malaxis*.

Las curvas de los ejemplares de *Govenia* y de *Malaxis corymbosa* se muestran en las Figs. 65-68 de A II-17. Las curvas de C38 *M. corymbosa*, C37, C86 *G. superba*, y las de C39 *Spiranthes sp. ign.* se muestran en las Figs. 69-72 del A II-18, y las curvas de ejemplares de *Govenia* y *Spiranthes* se puedan ver en las Figs. 73-76 de A II-19.

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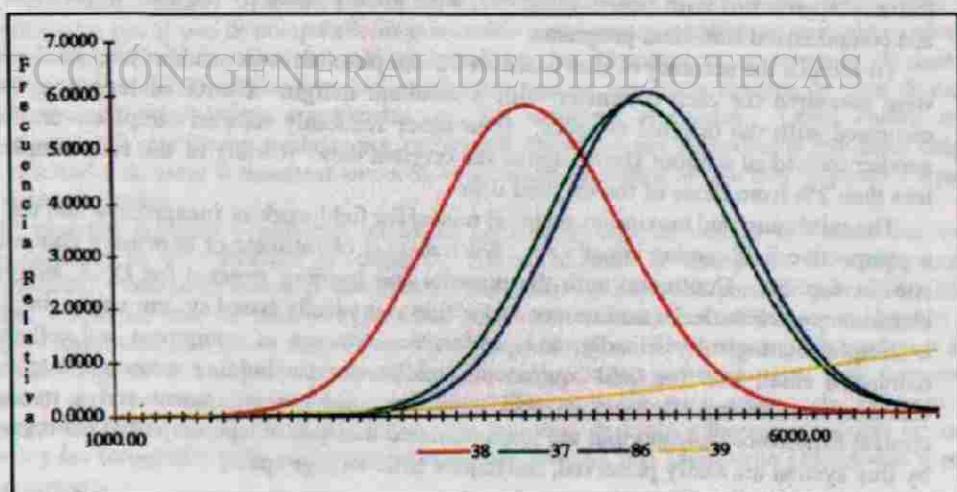


Fig. 37. Curvas normales estándar de las áreas epidérmicas celulares del haz de C38 *M. corymbosa*, C37, C86 *G. superba*, and C39 *Spiranthes sp. ign.*

7. DISCUSSION

7.1. ADVANTAGES OF A STATISTICALLY BASED IDENTIFICATION SYSTEM

Based on physically measuring and statistically analyzing actual objects (cells), this system contributes objectivity to subjective decisions that have heretofore relied only on the worker's experience and subconscious "feel" for what has actually taken place in the earth's natural history. This objectivity allows several practical applications to become available to the botanical worker. Results can be independently replicated and specifically tested by others unrestricted by time, location, language, or individual opinion. The opportunity for an objective delineation of closely related species by other than descriptive means without having to rely on flowers or floral keys is also offered. Used in conjunction with other data, it may also provide clues for the clarification of species, subspecies, and varietal forms. Employed in conjunction with floral characteristics, the means of adaxial and abaxial epidermal leaf cell areas may assist in the identification of new species.

In this investigation the statistical confidence limit was set at $p = 0.05$. However, depending on the material being measured or the level of accuracy of measurements taken, a worker might prefer to select a more rigorous standard or one less so. A statistically-based system allows the researcher this freedom while descriptively based conclusions, whether the product of personal opinion or opinions weighted by the use of some numerical (e.g. Adansonian) value assigning taxonomic tool, remains a subjective approach; one not able to be impartially modified or replicated.

Leafprints used in this investigation have been taken in a variety of locations: greenhouses; a laboratory; the Sierra Madre mountains west of Horsetail Falls in Nuevo Leon, Mexico; in an outdoor patio in Huatusco, Veracruz, Mexico; and an outdoor restaurant in Cordoba. The method of leafprinting was assayed by utilizing ordinary individuals, most of whom under my supervision, including retired teachers, a biology student, elementary-age children, and a geographically remote individual who received brief instructions by e-mail. Measurements have been done by simple handheld draftsman's calipers and by computerized area measuring equipment. Calculations have been done using a simple handheld calculator, a spreadsheet application installed on a Macintosh SE 30 computer, and a state-of-the-art Macintosh PC "Power Tower Pro" computer. In an allied study the work has been done with an IBM-type Packard Bell Pentium computer (100 MHz processor; 1.2 Gb hard drive; 24 Mb RAM) employing a Microsoft Excel spread sheet application (Excel 97 Version 4.00.950; Spanish version). Statistical calculations, initially approached with pencil-and-paper, were greatly eased by the use of personal computers and computerized statistical programs.

To recheck the accuracy of data based on 32 samples, ten were randomly selected and 200 cells were measured for each parameter with a resultant margin of error of less than 0.01% when compared with the original samples. Four other randomly selected samples were measured by another individual without knowledge of the original data. Results of the four samples varied by less than 2% from those of the original data.

The minimum and maximum material needed for field work is inexpensive and the training of a prospective field worker equally so. No transport of intricate or expensive equipment to field sites is required. Contrasted with the material and training required for DNA analysis or even elementary work with electron microscopes, this statistically-based system using simple leafprints is simple, ecologically friendly, and productive. Storage of equipment and collected material requires a small box for field equipment, small cases for holding microscope glass slides, a container for storing photographs, and space for computer equipment and a microscope, and clinical experience indicates that the glass-mounted transparent tape strips and photographs utilized by this system are easily preserved, and require little storage space.

7. DISCUSION

7.1 VENTAJAS DE UN SISTEMA DE IDENTIFICACION CON BASAS ESTADISTICAS

La medición física y análisis estadístico de objetos reales (células), es un sistema que adiciona objetividad a la toma de decisiones subjetivas que hasta ahora habían sido basadas solamente en la experiencia del investigador y el subconsciente "sentimiento" por lo que realmente había tenido lugar en la historia natural de la tierra. Esta objetividad permite algunas aplicaciones prácticas para ponedas a disposición de los investigadores botánicos. Los resultados pueden ser independientemente duplicados y específicamente probados por otros, sin restricción de tiempo, localidad, idioma u opinión individual. También ofrece la oportunidad de una delineación objetiva de especies cercanamente relacionadas, por otros medios además de los descriptivos basados únicamente en claves florales. Usado en conjunción con otros datos, además puede proporcionar información adicional y clara sobre las pistas para la clasificación de especies, subespecies y formas variables. Empleado en conjunción con las características florales, el promedio de las áreas celulares del haz y del envés de la epidermis foliar puede resultar muy útil en la identificación de nuevas especies.

En esta investigación el nivel de confianza estadístico fue $p = 0.05$. Sin embargo, dependiendo del material medido o el nivel de exactitud de las medidas tomadas, un investigador podría preferir seleccionar un estándar más riguroso o menos. Un sistema basado de identificación numérica y con bases estadísticas permite al investigador esta libertad mientras que las conclusiones basadas descriptivamente, ya sea producto de opiniones personales u opiniones influenciadas por el uso de algunas herramientas taxonómicas numéricas de valor asignado (ejemplo: Adansonianas), permanecen como una aproximación subjetiva, incapaz de ser imparcialmente modificada o duplicada.

Las improntas foliares usadas en esta investigación han sido tomadas en una variedad de localidades: invernaderos, un laboratorio; las montañas de la Sierra Madre Oriental al oeste de la cascada La Cola de Caballo en Nuevo León, México; en el jardín de una casa en Huatusco, Veracruz, México, y en un restaurante al aire libre en Córdoba, Veracruz. El método de tomar las improntas fue enseñado por gente común, la mayoría bajo mi supervisión como maestros retirados, un estudiante de biología, niños de nivel primaria, y una persona, geográficamente distante quien recibió breves instrucciones mediante el correo electrónico. Las medidas han sido realizadas mediante un compás de puntas secas (marca drafting) y por equipo de medición de área computizado. Los cálculos han sido realizados usando una simple calculadora de bolsillo, un programa de hoja de cálculo instalado en una computadora Macintosh SE30, y una innovadora computadora Macintosh PC "Power Tower Pro". En un estudio similar, el trabajo ha sido de hecho con una computadora Packard Bell Pentium compatible a IBM (Procesador de 100 Mhz, 1.2 Gb de disco duro y 24 Mb de RAM) empleando una hoja de cálculo de Microsoft Excel (Excel 97 versión 4.0, versión en español). Los cálculos estadísticos, iniciados con lápiz y papel, fueron grandemente simplificados por el uso de computadoras personales y programas estadísticos computerizados.

Para comprobar la exactitud de los datos basados en las 32 muestras, se tomaron 10 muestras al azar y se midieron 200 células para cada parámetro con un resultante margen de error de menos de 0.01% cuando éstos fueron comparados con las muestras originales. Otras cuatro muestras seleccionadas al azar fueron medidas por otros individuos quienes desconocían los datos originales. Los resultados de estas 4 muestras tuvieron una variación menor al 2% con respecto a aquellas de los datos originales.

El material mínimo y máximo requerido para el trabajo de campo es barato así como el entrenamiento de un trabajador de campo. No se requiere el transporte de equipo costoso y complicado. Contrastando con el material y entrenamiento requerido para el análisis de DNA o el trabajo elemental con un microscopio electrónico, este sistema estadísticamente basado usando simples improntas foliares es simple, ecológico y productivo. El almacenaje de equipo y material colectado requiere una pequeña caja para el equipo de campo, pequeñas cajas para contener porta objetos, un contenedor para almacenar fotografías, espacio para equipo de computo y un microscopio y la experiencia clínica indica que las tiras de cinta adhesiva montadas en un porta objeto y las fotografías utilizadas por medio de este sistema son fácilmente preservadas y requieren poco espacio.

In sum, the system of numbering and leafprinting and statistical analysis has been tested for accuracy, economy, and simplicity in diverse localities, by individuals of widely varying ages and educational expertise, and with primitive and advanced equipment over a time period spanning more than four years. The accuracy of data has been checked, rechecked, and then checked again by "double-blind" methodology to ensure (at least in the mind of this investigator!) that the data results and inferences offered have been obtained through the impartial eyes of the statistical treatment.

Obviously, a hybrid represented as an "unknown species" would present misleading information. However, analyzing leafprint data obtained from both parents and their hybrid might provide useful information. The mean cell area of a hybrid and both parent plants, the percentage of each parent showing in the hybrid may be calculated (Table 13). What remains is to determine the extent to which floral desirability might correlate with the percentage of each parent displayed by this clone or their hybrid offspring in general. Given a correlation between biological percent-of-parent and some standards of floral desirability, a hybridizer might be relieved of growing hundreds of randomly produced seedlings in favor of cultivating only those hybrids with a predictably greater incidence of desirable floral characteristics. Given these percent-of-parent data, the hybridizer might also be able to plan future hybridization decisions more productively.

Table 13. Comparison of leaf cell data of Hybrid C60 S. Love Potion with each parent showing percent of each parent in this hybrid plant

Off & Sample	Ad Area (μ^2)	Progenitor's adaxial contribution to hybrid	Ab Area (μ^2)	Progenitor's abaxial contribution to hybrid
52 ♀ <i>S. connata</i>	4707.11	85.16%	3192.87	71.49%
60 S. Love Potion 'No.9'	4640.63	---	3097.31	--
07 ♂ <i>S. nigrina</i>	4259.11	14.84%	2857.66	28.51%

7.2. LIMITATIONS OF THE STATISTICAL IDENTIFICATION SYSTEM

The equipment employed during the study has been the best available within the limits of personal finances and the generosity of friends. However, better results may be possible by combining microscope magnification and area scanning equipment with a direct video uptake to the computer spreadsheet. Given this technological improvement, a larger number of cells might be scanned with greater accuracy directly from the slide placed under the microscope. In addition to reducing human measurement error possibilities, statistical results could be offered immediately. Given refinements in computerization, it should be possible to scan, digitalize, and computer-store the tape strip information and completely eliminate storing tape or photograph samples. With computer linking capabilities, leafprint data could be linked with that of other stored specimens and made available simultaneously to any number of workers at any geographical location, enabling the interchange of information and doing so more expeditiously.

This system assumes most species found in nature will be diploid. Where an isolated aneuploid or tetraploid plant is encountered, results will be faulty if used without other plant information. However, given a sufficient sampling of the diploid plants of a genus, this system may at least draw attention to the fact that an anomaly exists.

En suma, el sistema de registro y toma de improntas y así como el análisis estadístico ha probado ser un método poseedor y procedimiento de exactitud, economía y sencillez en diversas localidades, por individuos en una amplia variación de edades y experiencia educacional, con equipo primitivo y avanzado sobre un lapso de tiempo de más de cuatro años. La exactitud de los datos ha sido verificada, re-verificada y nuevamente verificada por la metodología "doble-ciego para asegurar (al menos en opinión de este investigador) que los resultados de los datos y las inferencias ofrecidas han sido obtenidas a través de las mediciones imparciales a través del tratamiento y análisis estadístico.

Obviamente, un híbrido representado como una "especie desconocida" presentaría información confusa. Sin embargo, analizando los datos de las improntas foliares obtenidos de ambos padres y sus híbridos podría proporcionar información útil. El promedio del área celular de un híbrido y ambos padres, puede ser calculado así como el porcentaje del contribución de cada parente mostrado en el híbrido (Cuadro 13). Lo que resta determinar es el grado al cual la calidad floral deseable podría relacionarse con el porcentaje de cada parente exhibido por este clon o su descendencia híbrida en general. Dada una correlación entre el "porcentaje biológico de padres" y algunos estándares de calidad floral deseable, de este forma se un productor de híbridos se le evitaría el cultivar cientos de plantas de semillero producidas al azar, en lugar de cultivar solamente aquellos híbridos con una mayor incidencia de predicción de características florales deseables. Dados estos datos de "porcentaje de padres", el productor de híbridos podría ser también capaz de planear decisiones futuras de hibridación mas productivamente.

Cuadro 13. Comparación de los datos de las células foliares del híbrido C60 S. Love Potion con cada parente, mostrando el porcentaje de contribución de cada parente en el híbrido.

Cl & Ejemplar	Área del Haz (μ^2)	Contribución del progenitor al haz del híbrido	Área del Envéz (μ^2)	Contribución del progenitor al envéz del híbrido
52 ♀ S. connata	4707.11	85.16%	3192.87	71.49%
60 S. Love Potion 'No. 9'	4640.63	--	3097.31	--
07 ♂ S. tigrina	4259.11	14.84%	2857.66	28.51%

7.2 LIMITACIONES DEL SISTEMA DE IDENTIFICACION CON BASAS ESTADISTICAS

El equipo empleado a lo largo del estudio ha sido lo mas adecuado y disponible dentro de los límites de nuestra capacidad financiera personal y así como a la generosidad de amigos. Sin embargo, serían posibles mejores resultados mediante la combinación de amplificación de un microscopio y equipo de análisis de áreas con una captación directa de video directo sobre una hoja de cálculo de la computadora. Teniendo esto en forma directa a manera de "scanner" adelanto tecnológico, de este forma se podría analizar un mayor número de células con una mayor exactitud directamente del porta objetos puesto bajo el microscopio. Adicionalmente se reducirían las posibilidades de error en las mediciones humanas, los resultados estadísticos se podrían ofrecer en forma inmediata. Haciendo uso de la tecnología en el área de cocomputo y microscopía, sería posible analizar, digitalizar y almacenar en computadora la información de la tira de cinta adhesiva lo que evitaría el almacenaje de las muestras de cinta adhesiva y fotografías. Con capacidad de ampliar la red de usuarios en computadoras, los datos de las huellas foliares podrían ser enlazados con aquellos de otros ejemplares almacenados y hacerlos disponibles simultáneamente a cualquier número de investigadores en cualquier localidad geográfica, pudiendo intercambiar la información haciéndola mas expedita.

Este sistema asume que la mayoría de las especies encontradas en la naturaleza serán diploides. En caso de encontrar una planta aneuploidea aislada o una tetraploide, los resultados no podrán ser eficientes y se hará necesaria una mayor información de otras plantas. Sin embargo, teniendo un muestreo suficiente de las plantas diploides de un género, este sistema puede al menos llamar la atención sobre el hecho de que existe una anomalía.

The usefulness of this system depends—in part—on the number of samples of individual species and the number of species sampled throughout the entire range of the genus. As with any statistical system, all other factors being equal, the larger the sample size of an entire population (genus) and the larger the sample size of each (species) factor, the more dependable should be the results.

While species identifications are possible using information from the mean adaxial and/or abaxial epidermal cells, the range of the species within the lower and upper confidence limits should be considered. From Table 14 (excerpted from Annex III - 1, col. 1) it will be seen that by using only adaxial epidermal cell data *S. reichenbachiana* does not significantly differ statistically from *embreei* or *platyceras* to permit confirmation of an unknown registering between the limits -220.5 to + 890.6. However, if the country of origin of the unknown is known to be Colombia, *S. embreei* (known from only Ecuador) is eliminated and the unknown may be predicted as either *S. platyceras* or another plant of *S. reichenbachiana*. As originally conceptualized, this identification system was to be used for field work, however the identity of a sample presented with no information other than "an unknown *Stanhopea* species" may be able to be predicted correctly or at least have the possibilities narrowed to within only a few species.

Table 14. Statistical comparisons of C21 *S. reichenbachiana* with species with which most closely related.

Compared with	Lwr Conf Lmt	Diff Bet Means	Up Conf Lmt	Sig Dif
C46 <i>S. reichenbachiana</i>	- 403.5	129.4	662.4	No
C47 <i>S. embreei</i>	- 220.5	312.5	845.4	No
C54 <i>S. platyceras</i>	- 213.8	319.1	852.1	No
C31 <i>S. platyceras</i>	-175.3	357.7	890.6	No
C50 <i>S. pulchra</i>	45.4	578.4	1111.4	Yes
C18 <i>S. pazoi</i>	199.6	732.6	1265.6	Yes

8. CONCLUSIONS

Stanhopea species display mean adaxial and abaxial leaf cell areas in ranges sufficiently narrowed and individualistic to permit species identification confirmation within their range limits without regard to visualization of flowers. This marks a revolutionary departure from the classical botanical reliance on subjective floral descriptions as sufficient to define a species. Given this capability, definitions of botanical species now have the ability to quantitatively consider the actual species—the plant—instead of relying on defining angiosperm species by the characteristics of only an organ of a species—a flower. While it is an evolutionary *sine qua non* postulate that the primordial flower evolved from the leaf, it is equally obvious that once this divergence took place, the natural selection pressures for flower and leaf are different. Thus defining a species by only a flower may—in fact—offer only a sample of organ evolution while distorting the evolutionary picture of the species and obscuring where it actually fits within the earth's natural historical record.

Utilizing volunteer field workers in several countries, this system may be employed to gather information about specific plants of *Stanhopea* in specific locations throughout the entire range of this genus. This basic data could be analyzed at a central location and each species of the entire genus accurately mapped. Indeed, this possibility is not limited to include only *Stanhopea*, but may be used to other orchid genera and other plant families. Similar work with other genera closely related to *Stanhopea* (examples: *Acineta*, *Coryanthes*, *Gongora*, *Peristeria*), may make it possible to extrapolate to characteristics displayed by a now-extinct ancestral species from which one or more of these genera have evolved.

La utilidad de este sistema depende—en parte—del número de muestras de especies individuales y al número de especies muestreadas a través del rango completo del género. Como en cualquier otro sistema estadístico, permaneciendo todos los otros factores iguales, entre más grande sea el tamaño de muestra de una población entera (género) y entre mayor sea el tamaño de muestra de cada factor (especies), los resultados deberán ser más confiables.

Mientras que la identificación de las especies es posible usando para ellos la información procedente que se obtiene del promedio de células epidérmicas del haz y del envés, el rango de las especies dentro de los límites de confianza superior e inferior deberá ser considerado. Procedente del Cuadro 14 (citado del Anexo III – 1, col. 1) se vera que al usar solamente los datos de las células epidérmicas del haz de *S. reichenbachiana* no difiere significativamente de *S. embreei* o *S. platyceras* para realizar la confirmación de una “especie desconocida” registrado entre los límites -220.5 a + 890.6. Sin embargo, si se conoce que el país de origen del “desconocido” es Colombia, *S. embreei* (conocido solamente en Ecuador) se elimina y el “desconocido” puede predecirse como *S. platyceras* u otra planta de *S. reichenbachiana*. Como se conceptualizó originalmente, este sistema de identificación iba a ser usado para trabajo de campo, sin embargo la identidad de una muestra presentada sin ninguna otra información aparte de “una especie desconocida de *Stanhopea*” puede ser predicha correctamente o al menos disminuir las opciones a sólo unas pocas especies.

Cuadro 14. Comparaciones estadísticas de C21 *S. reichenbachiana* con las especies más cercanamente relacionadas.

Comparado con	Límite Conf Abajo	Dif Entre Medidas	Límite Conf Alto	Dif Sigta
C46 <i>S. reichenbachiana</i>	-403.5	129.4	662.4	No
C47 <i>S. embreei</i>	-220.5	312.5	845.4	No
C54 <i>S. platyceras</i>	-213.8	319.1	852.1	No
C31 <i>S. platyceras</i>	-175.3	357.7	890.6	No
C50 <i>S. pulla</i>	45.4	578.4	1111.4	Sí
C18 <i>S. pozoi</i>	199.6	732.6	1265.6	Sí

8. CONCLUSIONES

Las especies de *Stanhopea* muestran promedios de áreas celulares foliares del haz y el envés en rangos suficientemente estrechos e individualísticos para permitir la confirmación e identificación de los especies dentro de esos límites de rango sin importar la visualización de las flores. Esto marca un punto de partida revolucionario en la confianza de la botánica clásica para las descripciones florales subjetivas de tal forma como suficientes para definir una especie. Dada esta capacidad, las definiciones de especies botánicas ahora tienen la habilidad para considerar cuantitativamente las especies actuales—la planta—in lugar de cañar en la definición clásica de las especies de angiospermas mediante las características de solamente un órgano de la especie—la flor. Mientras que esto es un postulado evolutivo *sine qua non* en el cual la flor primordial evolucionó de la hoja, es igualmente obvio que una vez que esta divergencia tuvo lugar, las presiones de selección natural para la flor y la hoja fueron diferentes. De esta manera la definición de una especie solamente por la flor puede—de hecho—ofrecer solamente una muestra de la evolución de un órgano mientras que distorsiona el cuadro evolutivo de la especie y obscurece el lugar donde actualmente encaja dentro del registro histórico natural de la tierra.

Utilizando trabajadores de campo voluntarios en algunos países, este sistema puede ser empleado para reunir información acerca de plantas específicas de *Stanhopea* en localidades específicas a través del rango entero de este género. Esta información básica podría ser analizada en una localidad central y se podría hacer un mapa preciso de cada especie de todo el género. De hecho, esta posibilidad no está limitada incluir solamente el género *Stanhopea*, sino puede ser usada para otros géneros de orquídeas y otras familias de plantas. Un trabajo similar con otros géneros cercanamente relacionados a *Stanhopea* (ejemplos: *Acineta*, *Coryanthes*, *Gongora*, *Peristeria*), puede ser posible para extraer las características mostradas por una especie ancestral ya extinta de la cual uno o mas de estos géneros ha evolucionado.

The amount of shrinkage experienced by a *Stanhopea* leaf is being investigated by comparing live-leaf data with similar data from dry leaves. Primitive, large celled plants appear to show a greater percentage of shrinkage than the smaller celled advanced members and the rate of cell shrinkage appears to progress at a relatively uniform rate as one progresses from primitive to advanced species. *Stanhopea maculosa* has been dependably recorded from near Hermosillo, Sonora, Mexico; at a latitude farther north than San Antonio, Texas, and it is hypothesized that this genus advanced as far north as present-day Colorado and Wyoming during the warm period of the Eocene. No fossil orchid flowers are known, and—in fact—no fossil has been confirmed as orchid plant material. However, given the general characteristics of a leaf and the amount of shrinkage expected for the Mexican species of this genus, a starting point may be provided for a productive search of the paleobotanical record for fossilized material of this or other orchid genera.

The paleobotanical postulate that the primordial flower evolved from the leaf is not new. Generations of students have noted it in classrooms, written it on test papers, and discarded it as "just another test question." However, serious consideration of that concept led this worker to the hypothesis that some measurable quantity, readily apparent on the surface of a leaf—the evolutionary ancestor of the flower—ought to offer new knowledge about the nature of a species. From that speculation, a way opened to reasonably confirm the identity of a species from only a print of a small leaf section. In turn, this has led to new insights concerning the evolution of a genus and opened possibilities for analyzing fossil plant material.

This investigation has merely scratched the surface of virgin ground in the fields of botany and evolutionary biology and one can only speculate about what may lie a few centimeters below that surface. This work may superficially appear to be concerned with confirming the identity of members of an orchid genus, but its use of statistics has introduced taxonomic conclusions into the science of botany which, at present, is essentially descriptive and therefore subjective in content. For the first time, botany is offered a scientifically testable protocol for investigating differences between species and comparing the diverse members of a genus.

This use of cell-measuring and statistical analyses, although elemental and narrowed in amount of material, questions subjective foundation-level concepts that have defined the science of botany for more than two and a half centuries. Classical botany has rested on descriptive taxonomies and until specific genes and gene sequences and their individual and linked functions can be sufficiently delineated to infallibly define species at the molecular level, angiosperm species will continue to be defined by morphologic characters. The extent to which statistics may be scientifically applied in the molecular biological domain, and with flower morphology, remains to be seen.

One inference obtained from this investigation is that mean epidermal cell areas vary evolutionarily with speciation of *Stanhopea* plants over latitude. This has offered new information about this plant genus. If indeed, this applies to other plant genera and families, new knowledge may be gained about the evolution of plants. Also, if comparable variations exist in genera of snails, fishes, amphibians, and mammals, whether as mean epidermal cell areas or some other characteristic measurable and statistically verifiable, all conclusions noted here may well be only introductions to new beginnings in the fields of taxonomy and evolutionary biology.

9. LITERATURE CITED

- Ames, O., and Donovan S. Correll. 1952. *Orchids of Guatemala*. vol. 26, No. 1. Chicago Natural History Museum: *Fieldiana: Botany*. 395 pp.
_____, and Donovan S. Correll. 1953. *Orchids of Guatemala*. vol. 26, No. 2. Chicago Natural History Museum: *Fieldiana: Botany*. 727 pp.
Anonymous. 1941. Air Fertilization of Orchids. *Orchid Digest* 5 (11): 189-190 (Nov).
_____. 1965. CO₂ Enrichment. *Orchid Review* 73: 108
Arditti, J. ed. 1977 *Orchid Biology: Reviews and Perspectives I*. Ithaca, NY: Cornell University Press.
310 pp.

La reducción experimentada por una hoja de *Stanhopea* está siendo investigada para comparar datos de hojas vivas con datos similares procedentes de hojas secas. Las plantas primitivas con células grandes muestran un porcentaje mayor de encogimiento que los miembros avanzados con células más pequeñas y el porcentaje de encogimiento de las células parece progresar en promedio de manera uniforme de las especies primitivas a las avanzadas. *Stanhopea maculosa* se ha registrado comúnmente cerca de Hermosillo, Sonora, México; en una latitud más hacia el norte de San Antonio, Texas y se ha dado la hipótesis que este género avanza tan al norte como lo que hoy en día son los estados de Colorado y Wyoming durante el cálido período del Eoceno. No se conoce un fósil de flores de orquídea, y—de hecho—no se ha confirmado ningún fósil como material de plantas de orquídeas. Sin embargo, teniendo las características generales de una hoja y la cantidad de encogimiento esperado para las especies Mexicanas de este género, se puede proporcionar un punto de partida para una búsqueda productiva del record paleobotánico de material fosilizado de este u otros géneros de orquídeas.

El postulado paleobotánico mencionado que las primeras flores evolucionaron de las hojas no es nuevo. Generaciones de estudiantes lo han aprendido en los salones de clases escrito en sus exámenes y desechado como "solo otra pregunta de examen más." Sin embargo, consideraciones serias de este concepto condujeron a este investigador hacia la hipótesis que algunas cantidades medibles, aparentemente dispuestas sobre la superficie de una hoja—el ancestro evolutivo de la flor—debe ofrecer un conocimiento nuevo acerca de la naturaleza de una especie. De esa especulación se abre un camino a confirmar razonablemente la identidad de una especie a partir solamente de una impronta o de una pequeña sección foliar. A su vez, esto ha conducido a nuevos conocimientos concernientes a la evolución de un género y abrió las posibilidades para el análisis de materiales de plantas fosilizadas.

Esta investigación ha rasgado meramente la superficie de un terreno virgen en los campos de la botánica y la biología evolutiva, y, de este modo uno puede solamente especular acerca de lo que puede estar a tan solo unos centímetros abajo de la superficie. Este trabajo puede aparecer superficial en lo referente a confirmar la identidad de miembros de un género de orquídeas, pero su uso de estadísticas ha introducido conclusiones taxonómicas en la ciencia botánica, la cual, al presente es esencialmente descriptiva y por lo tanto subjetiva en su contenido. Por primera vez, la botánica es ofrecida científicamente probada protocol para investigar diferencias entre especies y comparando diversos miembros de un género.

Este uso de medir las células y análisis estadístico, aunque elemental y limitado a la cantidad de material, profundo en la búsqueda subjetiva a nivel de conceptos fundados que tienen definida la ciencia botánica desde hace más de dos y media centurias. La botánica clásica ha descansado en la taxonomías descriptivas, y hasta genes específicos y secuencias específicas de genes y sus funciones individuales y encadenadas puedan ser suficientemente delineadas e infaliblemente definir especies al nivel molecular, las especies angiospermas continuaran definiéndose por sus caracteres morfológicos. La extensión en la cual las estadísticas pueden ser científicamente aplicadas en la biología molecular domina, y trabaja con la morfología floral como se ha visto.

Una inferencia obtenida de esta investigación es que las áreas de las células epidérmicas varían al evolucionar con especiación como las plantas de *Stanhopea* varían con la latitud. Si claro, esto aplica a otros géneros de plantas y familias, nuevos conocimientos pueden ser ganados sobre el evolución de las plantas. También, si comparamos las variaciones existentes entre géneros de caracoles, peces, anfibios, y mamíferos, si son áreas de células epidérmicas o de otras características medibles y comprobadas estadísticamente, todas las conclusiones mencionadas aquí son solamente introducciones hacia las posibilidades de nuevos comienzos en los campos de la taxonomía, conservación y un mejor entendimiento de la historia natural de la vida sobre la tierra.

9. LITERATURA CITADA

- Ames, U., and Donovan S. Correll. 1952. *Orchids of Guatemala*. vol. 26, No. 1. Chicago Natural History Museum: *Fieldiana: Botany*. 395 pp.
_____, and Donovan S. Correll. 1953. *Orchids of Guatemala*. vol. 26, No. 2. Chicago Natural History Museum: *Fieldiana: Botany*. 727 pp.
Anonymous. 1941. Air Fertilization of Orchids. *Orchid Digest* 5 (11): 189-190 (Nov).
_____. 1965. CO₂ Enrichment. *Orchid Review* 73: 108.
Arditti, J. ed. 1977 *Orchid Biology: Reviews and Perspectives I*. Ithaca, NY: Cornell University Press. 310 pp.

- _____. 1979. Aspects of Orchid Physiology. *Adv. Bot. Res.* 7: 421-655. London, Academic Press.
- _____. 1992. *Fundamentals of Orchid Biology*. New York: John Wiley & Sons. 691 pp.
- Arosema G., A., and Roberto Estrada G., Cecilia de Jurado, and Max Konanz M. 1988. *Orquídeas de la Costa del Ecuador*. Guayaquil, Ecuador: Asociación Ecuatoriana de Orquideología. 129 pp.
- Arnold, R. E. 1928. Some *Stanhopea* Species. *Orchid Review* 36 (419): 138-142 (May)
- Atwood, J. T. 1989. *Orchids of Costa Rica*. part 1. Fasicle 14. plates 1301-1400 (10 November).
- Avadhani, P. N. and Chong Jin Goh, Adishesappa Nararaja Rao, and Joseph Arditti. Carbon Fixation in Orchids, in J. Arditti, ed. 1982. *Orchid Biology: Reviews and Perspectives II*. Ithaca, NY, Cornell University Press. pp. 173-193.
- Bechtel, H., and Phillip Cribb and Edmund Launert. 1992. *The Manual of Cultivated Orchid Species*. Cambridge, Massachusetts: The MIT Press. 585 pp.
- Beer, J. G. 1863. Beiträge zur morphologie und biologie der familie der orchideen. Vienna; Druck und Verlag von Carl Gerold's sohn.
- Borg, F. 1965. Some experiments in growing *Cymbidium* seedlings. *Orchid Review* 73: 278-280.
- BSCS Administrative Staff. 1987. *Biology—An Ecological Approach*. Green Version. Dubuque, IA: The Kendall/Hunt Publishing Company.
- Burberry, H. A. 1895. Calendar of Operations for September. *Orchid Review* 3 (33): 278-283 (Sept)
- _____. 1898. Calendar of Operations for May. *Orchid Review* 6 (65): 148-153 (May)
- Campbell, N. A. 1990. *Biology*. 2nd. ed. Redwood City, CA: The Benjamin Cummings Publishing Company.
- Chavez, A. A., and Silvia Cappello García. 1988. *Orquídeas de Tabasco*. Villahermosa, México, Gobierno del Estado de Tabasco; Instituto Nacional de Investigaciones Sobre Recursos Bióticos. 84 pp.
- Cogniaux, C. A., and A. Goossens. 1899. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 1, Avril, 1899; re: *S. madouiana* Cogn.)
- _____. 1900. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 2, Janvier, 1900; re: *S. wardii* Lindl.)
- _____. 1902. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio *Stanhopea* pl. 3 & aquarelle *Stanhopea* pl. 4; folio dated Février, 1902; re: *S. reichenbachiana* Roezel)
- _____. 1902a. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 4, Décembre, 1902; re: *S. graveolens* Lindley)
- _____. 1903. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 5, Décembre, 1903; re: *S. longilabia* Cogn.)
- _____. 1904. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 2b, Mars, 1904; re: *S. wardii* var. *froebeiana* Cogn.)
- _____. 1906a. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 6, Janvier, 1906; re: *S. oculata* Lindley)
- _____. 1906b. Géne *Stanhopea* in Genres sans Farde Speciale, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 7, Avril, 1906; re: *S. tigrina* Batem.)
- Cooper, E. 1931. *Stanhopea guttulata*. *Orchid Review* 39 (457): 202-203 (July) (re: comparaison between *S. guttulata* and *S. oculata*)
- Curry, K. J., and William Louis Stern and Lorraine M. McDowell. 1988. Osmophore development in *Stanhopea arfakia* and *S. pulla*. (Orchidaceae). *Lindleyana* 3 (4): 212-220 (Dec).

- _____. 1979. Aspects of Orchid Physiology. *Adv. Bot. Res.* 7: 421-655. London, Academic Press.
- _____. 1992. *Fundamentals of Orchid Biology*. New York: John Wiley & Sons. 691 pp.
- Arosemena G., A., and Roberto Estrada G., Cecilia de Jurado, and Max Konanz M. 1988. *Orquídeas de la Costa del Ecuador*. Guayaquil, Ecuador: Asociación Ecuatoriana de Orquideología. 129 pp.
- Arnold, R. E. 1928. Some *Stanhopea* Species. *Orchid Review* 36 (419): 138-142 (May)
- Atwood, J. T. 1989. *Orchids of Costa Rica*, part 1. Fascicle 14. plates 1301-1400 (10 November).
- Avadhani, P. N. and Chong Jin Goh. Adisheshappa Narasaja Rao, and Joseph Arditti. Carbon Fixation in Orchids., in J. Arditti, ed. 1982. *Orchid Biology: Reviews and Perspectives II*. Ithaca, NY, Cornell University Press. pp. 173-193.
- Bechtel, H., and Phillip Cribb and Edmund Launert. 1992. *The Manual of Cultivated Orchid Species*. Cambridge, Massachusetts: The MIT Press. 585 pp.
- Bier, J. G. 1863. Beiträge zur morphologie und biologie der familie der orchideen. Vienna; Druck und Verlag von Carl Gerold's sohn.
- Borg, F. 1965. Some experiments in growing *Cymbidium* seedlings. *Orchid Review* 73: 278-280.
- BSCS Administrative Staff. 1987. *Biology—An Ecological Approach*. Green Version. Dubuque, IA; The Kendall/Hunt Publishing Company.
- Burberry, H. A. 1895. Calendar of Operations for September. *Orchid Review* 3 (33): 278-283 (Sept)
- _____. 1898. Calendar of Operations for May. *Orchid Review* 6 (65): 148-153 (May)
- Campbell, N. A. 1990. *Biology*. 2nd. ed. Redwood City, CA: The Benjamin Cummings Publishing Company.
- Chavez, A. A., and Silvia Cappello García. 1988. *Orquídeas de Tabasco*. Villahermosa, México, Gobierno del Estado de Tabasco; Instituto Nacional de Investigaciones Sobre Recursos Bióticos. 84 pp.
- Cogniaux, C. A., and A. Goossens. 1899. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 1, Avril, 1899; re: *S. madagascariensis* Cogn.)
- _____. 1900. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 2, Janvier, 1900; re: *S. wardii* Lodd.)
- _____. 1902. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio *Stanhopea* pl. 3 & aquarelle *Stanhopea* pl. 4; folio dated Février, 1902; re: *S. reichenbachiana* Roezl)
- _____. 1902a. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 4, Décembre, 1902; re: *S. graveolens* Lindley)
- _____. 1903. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 5, Décembre, 1903; re: *S. longilabia* Cogn.)
- _____. 1904. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 2b, Mars, 1904; re: *S. wardii* var. *fruebeliana* Cogn.)
- _____. 1906a. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 6, Janvier, 1906; re: *S. oculata* Lindley)
- _____. 1906b. Genre *Stanhopea* in *Genres sans Farde Speciale*, L.—Z. in *Dictionnaire Iconographique des Orchidées*. Brux. Imp. X Havermans. (Folio & aquarelle: *Stanhopea* pl. 7, Avril, 1906; re: *S. tigrina* Batem.)
- Cooper, E. 1931. *Stanhopea guttulata*. *Orchid Review* 39 (457): 202-203 (July) (re: comparisons between *S. guttulata* and *S. oculata*)
- Curry, K. J., and William Louis Stern and Lorraine M. McDowell. 1988. Osmophore development in *Stanhopea confusa* and *S. pulla*. (Orchidaceae). *Lindleyana* 3 (4): 212-220 (Dec).

- Curtis, C. H. 1910. *Orchids For Everyone*. with coloured illustrations by T. Ernest Waltham. London: J. M. Dent & Sons, Ltd. 234 pp.
- Darwin, C. R. 1859. *The Origin of Species*. London. New Mentor ed. 1958. New York: Signet, Signet Classics, Mentor, Plume, Meridian, and NAL Books. 479 pp.
- Davidson, O. W. 1967. Question Box. Amer. Orch. Soc. Bull. 36 (9): 811 (Sept.).
- Dobzhansky, Th. 1935. A critique of the species concept in biology. *Phil. Sci.* 2: 344-345.
- Dodson, C. H., and Grady P. Frymire. 1961. Preliminary Studies in the Genus *Stanhopea* (Orchidaceae). *Ann. Mo. Bot. Gard.* 48: 137-172.
- Dodson, C. H. 1962. The importance of pollination in the evolution of the orchids of tropical America. *Amer. Orch. Soc. Bull.* 31: 731-735 (Sept.).
- _____. 1963. The Mexican Stanhopeas. *Amer. Orch. Soc. Bull.* 32 (2): 115-129 (Feb.).
- _____. 1975a. Clarification of some Nomenclature in the genus *Stanhopea* (Orchidaceae). *Selbyana* 1 (1): 46-55.
- _____. 1975b. Orchids of Ecuador: *Stanhopea*. *Selbyana* 1 (2): 114-129.
- Dodson and Gillespie. 1967. Dodson, C. H. 1975. Clarification of some Nomenclature in the genus *Stanhopea* (Orchidaceae). *Selbyana* 1 (1): 46-55.
- Dodson, C. H., and P. M. Dodson. 30 December, 1980a. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 1. plates 001-100.
- _____, and P. M. Dodson. 30 December, 1980b. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 2. plates 101-200.
- _____, and P. M. Dodson. 30 December, 1980c. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 3. plates 201-300.
- _____, and P. M. Dodson. 30 December, 1980d. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 4. plates 301-400.
- _____. 1980., and P. M. Dodson. 30 December, 1980e. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 10. plates 901-1000.
- _____, and Piedad Marmol de Dodson. 30 October, 1982. Orchids of Ecuador. Fasicle 5. plates 401-500.
- Dressler, R. L. 1968. Observations on Orchids and euglossine bees in Panama and Costa Rica. *Rev. Biol. Trop.* 15: 143-183.
- _____. 1993. *Phylogeny and Classification of The Orchid Family*. Portland OR: Dioscorides Press. 314 pp.
- Dunsterville, G. C. K., and Leslie A. Garay. 1959. *Venezuelan Orchids Illustrated*. vol. 1. Amsterdam: Drukkerij Holland N. V. 448 pp.
- _____. 1976. *Venezuelan Orchids Illustrated*. vol VI. Cambridge Massachusetts: Harvard University Printing Office. 463 pp.
- Ferry, R. J. Sr. 1988 (unpubl. paper). *Spiranthes parksii* Correll, its propagation and ecology. Austin. The University of Texas.
- Fowlie, J. A. 1967. Orchid Collecting in the Colombian Andes. *Orchid Digest* 31 (5): 138-142 (May).
- _____. 1970. *The Genus Lycaste*. Pomona, California: Day Printing Corp. 132 pp.
- Friese, K. 1899. Monographie der Beinengattung Euglossa. *Termesztrajzi Fuzetek* 22: 136. (*Euglossa viridissima* as pollinator of *S. tigrina*).
- Futuyma, D. J. 1998. *Evolutionary Biology*. 3rd ed. Sunderland, MA, Sinauer Associates, Inc. 763 pp.
- Gerste, A. 1910. Note sur la médecine et la botanique des anciens mexicains. 2nd ed. *Imprimerie Polyglotte Vaticanne*, Rome.
- Goeze, E. 1916. Bei den cretideen. *Orchis* 10: 190-201.
- Grant, V. 1971, 1981. *Plant Speciation*. New York: Columbia University Press. 563 pp.
- Hallé, N. 1977. Orchidacées. In *Flor de La Nouvelle Calédonie et Dépendances*. Ed. A. Aubréville, J.-F. Leroy. Paris: Muséum National d'histoire Naturelle.
- Hamer, F. 1974. *Las Orquídeas De El Salvador*. San Salvador, El Salvador. Ministerio de Educación. vol II. 427 pp.

- Curtis, C. H. 1910. *Orchids For Everyone*. with coloured illustrations by T. Ernest Waltham. London: J. M. Dent & Sons, Ltd. 234 pp.
- Darwin, C. R. 1859. *The Origin of Species*. London. New Mentor ed. 1958. New York: Signet, Signet Classics, Mentor, Plume, Mentor, and NAL Books. 479 pp.
- Davidson, O. W. 1967. Question Box. *Amer. Orch. Soc. Bull.* 36 (9): 811 (Sept.).
- Dobzhansky, Th. 1935. A critique of the species concept in biology. *Phil. Sci.* 2: 344-345.
- Dodson, C. H., and Grady P. Frymire. 1961. Preliminary Studies in the Genus *Stanhopea* (Orchidaceae). *Ann. Mo. Bot. Gard.* 48: 137-172.
- Dodson, C. H. 1962. The importance of pollination in the evolution of the orchids of tropical America. *Amer. Orch. Soc. Bull.* 31: 731-735 (Sept.).
- _____. 1963. The Mexican Stanhopeas. *Amer. Orch. Soc. Bull.* 32 (2): 115-129 (Feb.).
- _____. 1975a. Clarification of some Nomenclature in the genus *Stanhopea* (Orchidaceae). *Selbyana* 1 (1): 46-55.
- _____. 1975b. Orchids of Ecuador. *Stanhopea*. *Selbyana* 1 (2): 114-129.
- Dodson and Gillespie. 1967. Dodson, C. H. 1975. Clarification of some Nomenclature in the genus *Stanhopea* (Orchidaceae). *Selbyana* 1 (1): 46-55.
- Dodson, C. H., and P. M. Dodson. 30 December, 1980a. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 1. plates 001-100.
- _____, and P. M. Dodson. 30 December, 1980b. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 2. plates 101-200.
- _____, and P. M. Dodson. 30 December, 1980c. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 3. plates 201-300.
- _____, and P. M. Dodson. 30 December, 1980d. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 4. plates 301-400.
- _____, and P. M. Dodson. 30 December, 1980e. Orchids of Ecuador. *Icones Plantarum Tropicarum*. Fasicle 10. plates 901-1000.
- _____, and Piedad Marmol de Dodson. 30 October, 1982. Orchids of Ecuador. Fasicle 5. plates 401-500.
- Dressler, R. L. 1968. Observations on Orchids and euglossine bees in Panama and Costa Rica. *Rev. Biol. Trop.* 15: 143-183.
- _____. 1993. *Phylogeny and Classification of The Orchid Family*. Portland OR: Dioscorides Press. 314 pp.
- Dunsterville, G. C. K., and Leslie A. Garay. 1959. *Venezuelan Orchids Illustrated*. vol 1. Amsterdam: Drukkenij Holland N. V. 448 pp.
- _____. 1976. *Venezuelan Orchids Illustrated*. vol VI. Cambridge Massachusetts: Harvard University Printing Office. 463 pp.
- Ferry, R. J. Sr. 1988 (unpubl. paper). *Spiranthes parkii* Correll, its propagation and ecology. Austin, The University of Texas.
- Fowlie, J. A. 1967. Orchid Collecting in the Colombian Andes. *Orchid Digest* 31 (5): 138-142 (May).
- _____. 1970. *The Genus Lycaste*. Pomona, California: Day Printing Corp. 132 pp.
- Fricke, K. 1899. Monographie der Beinengattung *Euglossa*. *Termeszettrajzi Fuzetek* 22: 136. (re *Euglossa viridissima* as pollinator of *S. tigrina*).
- Futuyma, D. J. 1998. *Evolutionary Biology*. 3rd ed. Sunderland, MA, Sinauer Associates, Inc. 763 pp.
- Gerste, A. 1910. Note sur la médecine et la botanique des anciens mexicains. 2nd ed. *Imprimerie Polyglotte Vaticanne*, Rome.
- Goeze, E. 1916. Bei den orchideen. *Orchis* 10:190-201.
- Grant, V. 1971, 1981. *Plant Speciation*. New York: Columbia University Press. 563 pp.
- Hallé, N. 1977. Orchidacées. In *Flor de La Nouvelle Calédonie et Dépendances*. Ed. A. Aubréville, J.-F. Leroy. Paris: Muséum National d'histoire Naturelle.
- Hamer, F. 1974. *Las Orquídeas De El Salvador*. San Salvador, El Salvador: Ministerio de Educación. vol II. 427 pp.

- _____. 1982. Orchids of Nicaragua. part 1. Fascicle 7. plates 601-700 (31 October).
- _____. 1983a. Orchids of Nicaragua. part 2. Fascicle 8. plates 701-800 (15 March)
- _____. 1983b. Orchids of Nicaragua. part 3. Fascicle 9. plates 801-900 (15 March).
- Harvey, J. C. 1903. Orchids in The Sub-Alpine Cordilleras of South Mexico. *Orchid Review* 11 (132): 354-358 (Dec)
- Hawkes, A. D. 1961. *ORCHIDS: Their Botany and Culture*. New York: Harper & Brothers, Publishers.
- _____. 1965. *Encyclopedia of Cultivated Orchids*. London: Faber and Faber Ltd. 602 pp.
- Heinrich, B. 1979. *Bumblebee Economics*. Cambridge, Massachusetts: Harvard University Press. 245 pp.
- Hermesssen, J. L. 1916. Notes on the Ecology of Orchids. *Orchid Review* 24 (279): 77-79 (Mar)
- Holloway, P. J. 1980. Structure and histochemistry of plant cuticular membranes: an overview. In: D. F. Cutler, K. L. Alvin, and C. E. Price eds. *The Plant Cuticle*. Academic Press, New York. pp. 1-32.
- Horich, C. K. 1974. The Costa Rican *Stanhopea* spcs. *Orchid Digest* 38 (3): 108-113 (May-June)
- Internet. 1998a. http://www.geocities.com/RainForest/1289/1289/stanhopea_candida.html page 3; 2/19/98 13:21.
- _____. 1998b. http://www.geocities.com/RainForest/1289/1289/stanhopea_ecornuta.html page 1 of 1; 2/19/98 13:42.
- _____. 1998c. http://www.geocities.com/RainForest/1289/1289/stanhopea_grandiflora.html page 2 of 2; 2/19/98 13:51.
- Jenny, R. 1993a. The Genus *Stanhopea* in Colombia. *Orchid Digest* 57 (1): 17-31 (Jan-Feb-Mar).
- Jones, S. B. Jr., and Arlene E. Luchsinger. 1979. *Plant Systematics*. New York: McGraw-Hill Book Company. 388pp.
- Kennedy, G. C. 1974. *Stanhopea fregeana* Rehb. f. Discovered North of San Antonio, Texas. *Orchid Digest* 38 (3) 89 & 95 (May-June)
- _____. 1977. Two Confused *Stanhopea* Species... *Stanhopea tigrina* and *Stanhopea nigrovioletacea*. *Orchid Digest* 41 (6): 878-880 (Nov-Dec).
- Kerr, R. 1992a. High Impact Tied to Mass Extinction. *Science* 257: 954-958 (14 Aug. 1992).
- _____. 1992b. When Climate Twitches, Evolution Takes Great Leaps. *Science* 257: 1622-1624 (18 Sept.).
- Kimmach, M. 1957. The Cultivation of *Stanhopea* and Its Allies. *Amer. Orch. Soc. Bull.* 26 (2): 75-81 (Feb)
- _____. 1978. The Cultivation of *Stanhopea* and Its Allies. *Amer. Orch. Soc. Bull.* 47 (9): 784-794 (Sept.)
- Koch, P. L., J. C. Zachos, P. D. Gingerich. 1992. Correlation Between Isotope records in Marine and Continental Carbon Reservoirs Near the Palaeocene/Eocene Boundary. *Nature* 358-359.
- Klotzsch, J. F. 1852. *Stanhopea andreae* comb. nov. *Allgem. Gartenz.* 20:273.
- Kolattukudy, P. E. 1980a. Cutin, suberin, and waxes. In: P. K. Stumpf ed. *Lipids, structures and functions. The biochemistry of plants*. vol. 4. Academic Press, New York. pp. 571-645.
- _____. 1980b. Biopolyester membranes of plants: cutin and suberin. *Ann. rev. of plant physiology* 32: 539-567.
- Lankester, C. H. 1918. Orchids of Costa Rica. *Orchid Review* 26 (306): 128 (Jun) (re: *Stanhopeas* beginning to flower)
- Lawler, L. J. 1984. Ethnobotany of the Orchidaceae. In: J. Arditti, ed. *Orchid Biology—Reviews and Perspectives III*. Ithaca, NY, Cornell University Press. pp. 27-147.
- Linden, J., and Lucien Linden, Emile Rodrigas, and Robert A. Rolfe. Vol III: 1891-1894. *LINDENIA Iconography of Orchids*. Turniers, France: Naturalia Publications. 1993. 510 pp.
- Lindley, J. 1830-1840 (1963 Asher reprint). *The Genera and Species of Orchidaceous Plants*. 553 pp. (specif pp. 157-158).
- _____. 1876. *The Treasury of Botany*. part II—L to Z. London: Longmans, Green, and Co. 1,352 pp. (specif. p. 1,091.)

- _____. 1982. Orchids of Nicaragua. part 1. Fascicle 7. plates 601-700 (31 October).
- _____. 1983a. Orchids of Nicaragua. part 2. Fascicle 8. plates 701-800 (15 March)
- _____. 1983b. Orchids of Nicaragua. part 3. Fascicle 9. plates 801-900 (15 March).
- Harvey, J. C. 1903. Orchids in The Sub-Alpine Cordilleras of South Mexico. *Orchid Review* 11 (132): 354-358 (Dec).
- Hawkes, A. D. 1961. *ORCHIDS: Their Botany and Culture*. New York: Harper & Brothers, Publishers.
- _____. 1965. *Encyclopedia of Cultivated Orchids*. London: Faber and Faber Ltd. 602 pp.
- Heinrich, B. 1979. *Bumblebee Economics*. Cambridge, Massachusetts: Harvard University Press. 245 pp.
- Hermesssen, J. L. 1916. Notes on the Ecology of Orchids. *Orchid Review* 24 (279): 77-79 (Mar).
- Holloway, P. J. 1980. Structure and histochemistry of plant cuticular membranes: an overview. In: D. F. Cutler, K. L. Alvin, and C. E. Price eds. *The Plant Cuticle*. Academic Press, New York. pp. 1-32.
- Horich, C. K. 1974. The Costa Rican *Stanhopea* spcs. *Orchid Digest* 38 (3): 108-113 (May-June).
- Internet. 1998a. http://www.geocities.com/RainForest/1289/1289/stanhopea_candida.html page 3; 2/19/98 13:21.
- _____. 1998b. http://www.geocities.com/RainForest/1289/1289/stanhopea_ecomuta.html page 1 of 1; 2/19/98 13:42.
- _____. 1998c. http://www.geocities.com/RainForest/1289/1289/stanhopea_grandiflora.html page 2 of 2; 2/19/98 13:51.
- Jenny, R. 1993a. The Genus *Stanhopea* in Colombia. *Orchid Digest* 57 (1): 17-31 (Jan-Feb-Mar).
- Jones, S. B. Jr., and Arlene E. Luchsinger. 1979. *Plant Systematics*. New York: McGraw-Hill Book Company. 388pp.
- Kennedy, G. C. 1974. *Stanhopea fregeana* Rehb. f. Discovered North of San Antonio, Texas. *Orchid Digest* 38 (3) 89 & 95 (May-June).
- _____. 1977. Two Confused *Stanhopea* Species... *Stanhopea tigrina* and *Stanhopea nigrovioletacea*. *Orchid Digest* 41 (6): 878-880 (Nov-Dec).
- Kerr, R. 1992a. High Impact Tied to Mass Extinction. *Science* 257: 954-958 (14 Aug, 1992).
- _____. 1992b. When Climate Twitches, Evolution Takes Great Leaps. *Science* 257: 1622-1624 (18 Sept).
- Kimnach, M. 1957. The Cultivation of *Stanhopea* and Its Allies. *Amer. Orch. Soc. Bull.* 26 (2): 75-81 (Feb).
- _____. 1978. The Cultivation of *Stanhopea* and Its Allies. *Amer. Orch. Soc. Bull.* 47 (9): 784-794 (Sept).
- Koch, P. L., J. C. Zachos, P. D. Gingerich. 1992. Correlation Between Isotope records in Marine and Continental Carbon Reservoirs Near the Palaeocene/Eocene Boundary. *Nature* 358:359.
- Klotzsch, J. F. 1852. *Stanhopea amoena* comb. nov. *Allgem. Gartenz.* 20:273.
- Kolattukudy, P. E. 1980a. Cutin, suberin, and waxes. In: P. K. Stumpf ed. *Lipids, structures and functions. The biochemistry of plants*. vol. 4. Academic Press, New York. pp. 571-645.
- _____. 1980b. Biopolyester membranes of plants: cutin and suberin. *Annu. rev. of plant physiology* 32: 539-567.
- Lankester, C. H. 1918. Orchids of Costa Rica. *Orchid Review* 26 (306): 128 (Jun) (re: Stanhopeas beginning to flower).
- Lawler, L. J. 1984. Ethnobotany of the Orchidaceae. In: J. Arditti, ed. *Orchid Biology—Reviews and Perspectives III*. Ithaca, NY, Cornell University Press. pp. 27-147.
- Linden, J., and Lucien Linden, Émile Rodigas, and Robert A. Rolfe. Vol III: 1891-1894. *LINDENIA Iconography of Orchids*. Turners, France: Naturalia Publications. 1993. 510 pp.
- Lindley, J. 1830-1840 (1963 Aher reprint). *The Genera and Species of Orchidaceous Plants*. 553 pp. (specif pp. 157-158).
- _____. 1876. *The Treasury of Botany*. part II—L to Z. London: Longmans, Green, and Co. 1,352 pp. (specif. p. 1,091.)

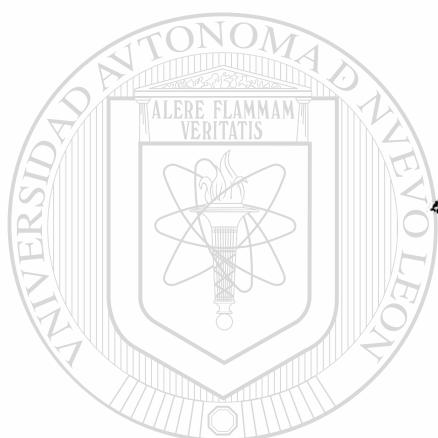
- Linnaeus, C. 1735. *Fundamenta Botanica*. Upsalla.
- _____. 1737. *Genera Plantarum*. Upsalla.
- Luer, C. A. 1972. *The Native Orchids of Florida*. New York: The New York Botanical Garden. 293 pp.
- _____. 1975. *The Native Orchids of The United States and Canada excluding Florida*. New York, The New York Botanical Garden. 361 pp.
- Malgruth, R. 1901. Biologische Eigentümlichkeiten der Früchte epiphytischer Orchideen. Ph.D. Thesis, Breslau.
- Margulis, L., and Kathleen V. Swartz. 1988. *Five Kingdoms*. New York: W. H. Freeman and Company.
- Mayr, E. 1942. *Systematics and the Origin of Species*. New York, Columbia University Press.
- McVaugh, R. ed. 1985. *Flora novo-Galiciana*. vol. 16. Orchidaceae. Ann Arbor, Michigan, The University of Michigan Press. 363 pp
- Missouri Botanical Garden. 1946 (Feb), vol XXXIII. *Flora of Panama*. Part III, Fascicle 2 (Orchidaceae, in part). Robert E. Woodson, Jr., Robert W. Schery, and collaborators. pp. 1-140. (Facsimile reprint, 1965. New York: Stechert-Hafner Service Agency, Inc.)
- _____. 1980. *Systematic Botany*. vol 14: 389-394 (Nov).
- Miwa, A. 1937. Carbon dioxide content of the atmospheric air of the greenhouse. *Orchid Review* 45 (527): 146-152 (May).
- Mora de Retana and John T. Atwood. 1992a. Orchids of Costa Rica. part 2. Fascicle 15. plates 1401-1500 (01 January).
- _____. 1992b. . Orchids of Costa Rica. part 3. Fascicle 16. plates 1501-1600 (01 October).
- Morgan, W. J. 1909. Calendar of Operations for June. *Orchid Review* 17 (198): 163-166 (Jun) (specif. pp. 164-165).
- Nash, N. 1997. *Orchid Conservation* 97. *Orchids* 66:1187-1191.
- de Oca, M. 1963. *Colibríes Y Orquídeas De México*. Mexico: Editorial Fournier, S. A. 34 pp.
- Ossian, C. R. 1994. Origin of the Orchidaceae - the geological evidence. In: A. M. Bridgen, ed. *Proceedings of the 14th World Orchid Conference*. J. Thompson Colour Printers, Glasgow. Pp. 105-114.
- Pabst, G. F. J., and Fritz Dungs. 1975. *Orchidaceae Brasiliensis*. Band I. Gesamtherstellung: Hagemann-ruck, Hildesheim. 408 pp.
- _____. 1977. *Orchidaceae Brasiliensis*, Band II. Hildesheim: Brüke-Verlag. 418 pp.
- Petroski, R. J. 1965. Clonal identification by means of leaf epidermal characters. *Orchidata* 5(4):191-193.
- Pilj, L., van der, and Calaway H. Dodson. 1966. *ORCHID FLOWERS Their Pollination and Evolution*. Coral Gables Fla: University of Miami Press. 214 pp.
- Poddubnaya-Arnold. 1964. *Obshchaya embriologiya pokritosemennih rastenij* (General embryology of the angiosperms) Nauka, Moscow. (re: suspensor cells)
- Quis, P. 1980. CO₂-Ditung bei Orchideen. *Die Orchidee* 31: 62.
- Rauth, W., and W. Barthlott, and N. Ehler. 1975. Morphologie und Funktion der Testa staubförmiger Flugsamen. *Botanisches Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 96: 353-374.
- Rhodehamel, W. A. 1994. Green-capsule-culture Harvest Times. *Amer. Orch. Soc. Bull.* 63 (5): 540-541 (May) (specif: optimum green-pod harvest time for *S. wardii*)
- Rolfe, R.A. 1891-1894. in Linden, J. et al., vol III: 1891-1894. *LINDENIA Iconography of Orchids*. Turniers, France: Naturalia Publications. 1993.
- _____. 1910b. The Evolution of The Orchidaceae. *Orchid Review* 18 (215): 321-325 (Nov) (specifically pp. 321 and 323)
- _____. 1911. Orchids at Florence. *Orchid Review* 19 (223): 202-205 (Jul)
- Rosillo, J. 1984 description of *S. novogaliciana*, in McVaugh, R. ed. 1985. *Flora novo-Galiciana*. vol. 16. Orchidaceae. Ann Arbor, Michigan, The University of Michigan Press.

- Linnæus, C. 1735. *Fundamenta Botanica*. Upsala.
_____. 1737. *Genera Plantarum*. Uppsala.
- Luer, C. A. 1972. *The Native Orchids of Florida*. New York: The New York Botanical Garden. 293 pp.
_____. 1975. *The Native Orchids of The United States and Canada excluding Florida*. New York, The New York Botanical Garden. 361 pp.
- Malgruth, R. 1901. Biologische Eigenthümlichkeiten der Früchte epiphytischer Orchideen. Ph.D. Thesis, Breslau.
- Margulis, L., and Karlene V. Swartz. 1988. *Five Kingdoms*. New York: W. H. Freeman and Company.
- Mayr, E. 1942. *Systematics and the Origin of Species*. New York, Columbia University Press.
- McVaugh, R. ed. 1985. *Flora novo-Galiciano*. vol. 16. Orchidaceae. Ann Arbor, Michigan. The University of Michigan Press. 363 pp.
- Missouri Botanical Garden. 1946 (Feb). vol XXXIII. *Flora of Panama*. Part III, Fascicle 2 (Orchidaceae, in part). Robert E. Woodson, Jr., Robert W. Schery, and collaborators. pp. 1-140. (Facsimile reprint, 1965. New York: Stechert-Hafner Service Agency, Inc.)
_____. 1980. *Systematic Botany*. vol 14: 389-394 (Nov).
- Miwa, A. 1937. Carbon dioxide content of the atmospheric air of the greenhouse. *Orchid Review* 45 (527): 146-152 (May).
- Mora de Retana and John T. Atwood. 1992a. Orchids of Costa Rica. part 2. Fascicle 15. plates 1401-1500 (01 January).
_____. 1992b. Orchids of Costa Rica. part 3. Fascicle 16. plates 1501-1600 (01 October).
- Morgan, W. J. 1909. Calendar of Operations for June. *Orchid Review* 17 (198): 163-166 (Jun) (specif. pp. 164-165).
- Nash, N. 1997. *Orchid Conservation* 97. *Orchids* 66:1187-1191.
- de Oca, M. 1963. *Colibríes Y Orquídeas De México*. Mexico: Editorial Fournier, S. A. 34 pp.
- Ossian, C. R. 1994. Origin of the Orchidaceae - the geological evidence. In: A. M. Pridgen, ed. *Proceedings of the 14th World Orchid Conference*. J. Thompson Colour Printers, Glasgow. Pp. 105-114.
- Pabst, G. F. J., and Fritz Dungs. 1975. *Orchidaceae Brasiliensis*. Band I. Gesamtherstellung: Hagemann-ruck, Hildesheim. 408 pp.
_____. 1977. *Orchidaceae Brasiliensis*. Band II. Hildesheim: Brücke-Verlag. 418 pp.
- Petroski, R. J. 1965. Clonal identification by means of leaf epidermal characters. *Orchidata* 5(4):191-193.
- Pilj, L., van der, and Calaway H. Dodson. 1966. *ORCHID FLOWERS Their Pollination and Evolution*. Coral Gables Fla: University of Miami Press. 214 pp.
- Poddubnaya-Arnold. 1964. Obozreniya embryologija pokritosemenij rastenij (General embryology of the angiosperms) Nauka, Moscow. (re: suspensor cells)
- Quis, P. 1980. CO₂-Düngung bei Orchideen. *Die Orchidee* 31: 62.
- Raub, W., and W. Barthlott, and N. Ehler. 1975. Morphologie und Funktion der Testa staubförmiger Flugsamen. *Botanisches Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 96: 353-374.
- Rhodehamel, W. A. 1994. Green-capsule-culture Harvest Times. *Amer. Orch. Soc. Bull.* 63 (5): 540-541 (May) (specif: optimum green-pod harvest time for *S. wardii*)
- Rolfe, R.A. 1891-1894. in Linden, J. et al.. vol III: 1891-1894. *LINDENIA Iconography of Orchids*. Turriers, France: Naturalia Publications. 1993.
_____. 1910b. The Evolution of The Orchidaceae. *Orchid Review* 18 (215): 321-325 (Nov) (specifically pp. 321 and 323)
_____. 1911. Orchids at Florence. *Orchid Review* 19 (223): 202-205 (Jul)
- Rosillo, J. 1984 description of *S. novogaliciana*, in McVaugh, R. ed. 1985. *Flora novo-Galiciano*. vol. 16. Orchidaceae. Ann Arbor, Michigan, The University of Michigan Press.

- Salisbury, F. B. and C. W. Ross. 1992. Plant physiology, 4th ed. Wadsworth publishing company, Belmont, CA.
- Sander, C. F., and F. K. Sander and L. L. Sander. 1927. *Sanders' Orchid Guide*. St. Albans: Sanders. 451 pp.
- _____. 1996. *Sanders' List of ORCHID HYBRIDS. 5 year Addendum, 1991-1995*. London: The Royal Horticultural Society. 1070 pp.
- Schweinfurth, C. Orchids of Peru. *Fieldiana*. vol. 30, no. 1. Chicago Natural History Museum. April 9, 1958. pp. 1-260.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 2. Chicago Natural History Museum. March 27, 1959. pp. 261-531.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 3. Chicago Natural History Museum. June 13, 1960. pp. 533-786.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 4. Chicago Natural History Museum. March 31, 1961. pp. 787-1005.
- _____. First Supplement to Orchids of Peru. *Fieldiana*. vol. 33. Chicago Natural History Museum. December 30, 1970. pp. 1-80.
- Sinclair, R. 1990. Water relations in orchids. In: J. Arditti, ed. *Orchid Biology: Reviews and Perspectives*, vol. V. Timber Press Inc., Portland, OR. pp. 63-119.
- Smith, R. L. 1977. *Elements of Ecology and Field Biology*. New York, Harper & Rowe, Publishers. 497 pp.
- Soto-Arenas, M.A. 1993. Population studies in Mexican orchids. In A.M. Pridgeon. Proceedings of the 14th World Orchid Congress (Glasgow, 1993). HSMO 1994. Glasgow, J. Thomson Colour Printers.
- Stoddard, E.M. 1965. Identifying plants by leaf epidermal characters. Conn. Agr. Exp. Sta. New Haven circ. 227. 3-9. Illus.
- Swisher III, C. C., José M Grajales-Nishimura, Alessandro Montanari, Stanley V. Margolis, Philippe Claeys, Walter Alvarez, Paul Renée, Esteban Cedillo-Pardo, Florentin J-M. R. Maurasse, Garciiss H. Curtis, Jan Smit, Michael O. Williams. 1992. Coeval $^{40}\text{Ar}/^{39}\text{Ar}$ Ages of 65.0 Million Years Ago from Chicxulub Crater Melt Rock and Cretaceous-Tertiary Boundary Tektites. *Science* 257: 954-958 (14 Aug).
- Tsuchiya, I. 1935. Air fertilization of orchid seedlings. *Orchid Review* 46 (509): 330-346 (Nov).
- Urbina, M. 1903a. notas acerca de las tzauhtli u orquídeas mexicanas. *Ann. Mus. Nacion. Mex.*, ser. 2, 1:54-84.
- _____. 1903b. Notes about the tzauhtli. *Orchid J.* 1; 215, 1952. (An abbreviated translation of 1903a by R. Oberg.)
- Van Valen, L. 1976. Ecological species, multispecies, and oaks. *Taxon* 25: 233-239.
- Vasquez Ch., R., and Calaway H. Dodson. 31 October. 1982. *Orchids of Bolivia*. Fusicle 6. plates 501-600.
- Wiley, E. O. 1978. The evolutionary species concept reconsidered. *Syst. Zool.* 27: 17-26.
- Williams, B. S. 1894. *The Orchid Grower's Manual*. 7th edition. London: Victoria and Paradise Nurseries. 796pp.
- Williams, L. O. 1951. *The Orchidaceae of Mexico*. Tegucigalpa, Honduras: CEIBA 2 (1-4); Escuela Agrícola Panamericana. 321 pp.
- Williams, N. H. 1982. Orchids and Euglossine Bees., in J. Arditti, ed. *Orchid Biology. Reviews and Perspectives*. vol. III. Ithaca: Cornell University Press. 390 pp. (pp. 119-171).
- _____. and W. Mark Whitten. 1982b. Identification of Floral Fragrance Components of *Stanhopea embreei* and Attraction of Its Pollinators to Synthetic Fragrance Compounds. *Amer. Orch. Soc. Bull.* 51 (12): 1262-1266 (Dec).
- _____. and W. Mark Whitten. 1983. Orchid floral fragrances and male euglossine bees: methods and advances in the last sesquidecade. *Biol. Bull.* 164: 355-395.
- Wilson, G. 1921. *Stanhopea tigrina*. *Orchid Review* 29 (339): 69-70 (Sept).
- _____. 1923. *Orchids of Panama*. *Orchid Review* 31 (358):107-110.

- Salisbury, F. B. and C. W. Ross. 1992. Plant physiology, 4th ed. Wadsworth publishing company, Belmont, CA.
- Sander, C. F., and F. K. Sander and L. L. Sander. 1927. *Sanders' Orchid Guide*. St. Albans: Sanders. 451pp.
- _____. 1996. *Sanders' List of ORCHID HYBRIDS. 5 year Addendum, 1991-1995*. London: The Royal Horticultural Society. 1070 pp.
- Schweinfurth, C. Orchids of Peru. *Fieldiana*. vol. 30, no. 1. Chicago Natural History Museum. April 9, 1958. pp. 1-260.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 2. Chicago Natural History Museum. March 27, 1959. pp. 261-531.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 3. Chicago Natural History Museum. June 13, 1960. pp. 533-786.
- _____. Orchids of Peru. *Fieldiana*. vol. 30, no. 4. Chicago Natural History Museum. March 31, 1961. pp. 787-1005.
- _____. First Supplement to Orchids of Peru. *Fieldiana*. vol. 33. Chicago Natural History Museum. December 30, 1970. pp. 1-80.
- Sinclair, R. 1990. Water relations in orchids. In: J. Arditti, ed. *Orchid Biology: Reviews and Perspectives*, vol. V. Timber Press Inc., Portland, OR. pp.63-119.
- Smith, R. L. 1977. *Elements of Ecology and Field Biology*. New York, Harper & Rowe, Publishers. 497 pp.
- Soto-Arenas, M.A. 1993. Population studies in Mexican orchids. In A.M. Pridgeon. Proceedings of the 14th World Orchid Congress (Glasgow, 1993). HSMO 1994. Glasgow, J. Thomson Colour Printers.
- Stoddard, E.M. 1965. Identifying plants by leaf epidermal characters. Conn. Agr. Exp. Sta. New Haven circ. 227. 3-9. Illus.
- Swisher III, C. C., José M Grajales-Nishimura, Alessandro Montanari, Stanley V. Margolis, Philippe Claeys, Walter Alvarez, Paul Renec, Esteban Cedillo-Pardo, Florentin J-M. R. Maurrasse, Garniss H. Curtis, Jan Smit, Michael O. Williams. 1992. Coeval $^{39}\text{Ar}/^{37}\text{Ar}$ Ages of 65.0 Million Years Ago from Chicxulub Crater Melt Rock and Cretaceous-Tertiary Boundary Tektites. *Science* 257: 954-958 (14 Aug).
- Tsuchiya, I. 1935. Air fertilization of orchid seedlings. *Orchid Review* 46 (509): 330-346 (Nov).
- Urbina, M. 1903a. notas acerca de las tzauhtli o orquídeas mexicanas. *Ann. Mus. Nacion. Mex.*, ser. 2, 1:54-84.
- _____. 1903b. Notes about the tzauhtli. *Orchid J.* 1; 215, 1952. (An abbreviated translation of 1903a by R. Oberg.)
- Van Valen, L. 1976. Ecological species, multispecies, and oaks. *Taxon* 25: 233-239.
- Vasquez Ch., R., and Calaway H. Dodson. 31 October, 1982. *Orchids of Bolivia*. Fascicle 6. plates 501-600.
- Wiley, E. O. 1978. The evolutionary species concept reconsidered. *Syst. Zool.* 27: 17-26.
- Williams, B. S. 1894. *The Orchid Grower's Manual*. 7th edition. London: Victoria and Paradise Nurseries. 796pp.
- Williams, L. O. 1951. *The Orchidaceae of Mexico*. Tegucigalpa, Honduras: CEIBA 2 (1-4); Escuela Agrícola Panamericana. 321 pp.
- Williams, N. H. 1982. Orchids and Euglossine Bees., in J. Arditti, ed. *Orchid Biology, Reviews and Perspectives*, vol. III. Ithaca: Cornell University Press. 390 pp. (pp. 119-171).
- _____, and W. Mark Whitten. 1982b. Identification of Floral Fragrance Components of *Stanhopea embreei* and Attraction of Its Pollinators to Synthetic Fragrance Compounds. *Amer. Orch. Soc. Bull.* 51 (12): 1262-1266 (Dec).
- _____, and W. Mark Whitten. 1983. Orchid floral fragrances and male euglossine bees: methods and advances in the last sesquidecade. *Biol. Bull.* 164: 355-395.
- Wilson, G. 1921. *Stanhopea tigrina*. *Orchid Review* 29 (339): 69-70 (Sept).
- _____. 1923. *Orchids of Paruma*. *Orchid Review* 31 (358): 107-110.

- _____. 1928. Sunhopea Cultivation in 1838. *Orchid Review* 36 (420): 164-166 (Jun)
- Withner, C. L., ed. 1974. *THE ORCHIDS A Scientific Survey*. New York: The Ronald Press Company. 648 pp.
- _____. 1974. *THE ORCHIDS Scientific Studies*. New York: John Wiley & Sons. 603 pp.
- Wong, S. C., and Choy Sin Hew. 1975. Do Orchid Leaves Respire? *Amer. Orch. Soc. Bull.* 44 (10): 902-906 (Oct)
- Wright, D. 1967. Carbon dioxide enrichment for Cymbidiums. *Orchid Review* 75: 120-122.

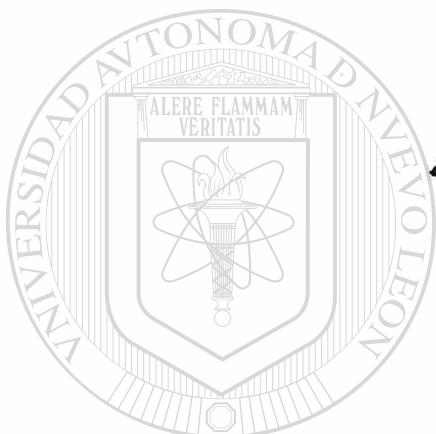


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- _____. 1928. Stanhopea Cultivation in 1838. *Orchid Review* 36 (420): 164-166 (Jun)
- Withner, C. L. ed. 1974. *THE ORCHIDS A Scientific Survey*. New York: The Ronald Press Company. 648 pp.
- _____. 1974. *THE ORCHIDS Scientific Studies*. New York: John Wiley & Sons. 603 pp.
- Wong, S. C., and Choy-Sin Hew. 1975. Do Orchid Leaves Respire? *Amer. Orch. Soc. Bull.* 44 (10): 902-906 (Oct)
- Wright, D. 1967. Carbon dioxide enrichment for Cymbidiums. *Orchid Review* 75: 120-122.

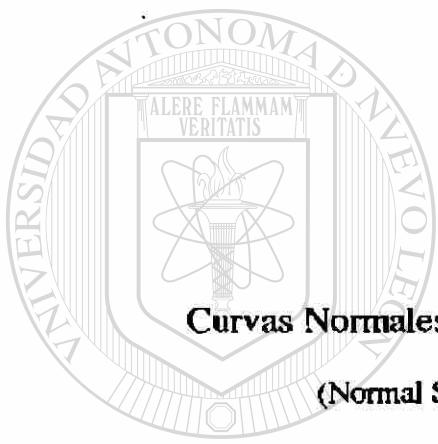


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Anexo I

Curvas Normales Estándar de los Ejemplares Individuales

(Normal Standard Curves of Individual Samples)

A I - 1 — A I - 68

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Cuadro 1. Datos estadísticos de C01 S. saccata.

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidary Cells)										
	Largo (L) Indice	Ancho (A) Indice	Área μm²	Largo (L) Indice	Ancho (A) Indice	Área μm²	Largo (L) Indice	Ancho (A) Indice	Área μm²	Largo (L) Indice	Ancho (A) Indice	Área μm²								
	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]								
1	0.70	75.38	0.45	48.46	3653.25	0.60	64.62	0.32	34.46	2226.75	0.50	53.85	0.20	21.54	1159.76	0.80	86.15	0.32	34.46	2968.99
2	0.60	64.62	0.38	40.92	2644.26	0.75	80.77	0.32	34.46	2783.43	0.50	53.85	0.30	32.31	1739.64	0.51	54.92	0.30	32.31	1774.44
3	0.85	91.54	0.35	37.69	3450.30	0.50	53.85	0.40	43.08	2319.53	0.42	45.23	0.30	32.31	1461.30	0.60	64.62	0.32	34.46	3226.75
4	0.72	77.34	0.40	43.08	3340.12	0.65	70.00	0.32	34.46	2412.31	0.40	43.08	0.30	32.31	1391.72	0.55	59.25	0.50	33.85	3189.35
5	0.70	75.38	0.36	38.77	2922.60	0.75	80.77	0.35	37.69	3044.38	0.45	48.46	0.25	26.92	1304.73	0.70	75.38	0.36	38.77	2922.60
6	0.65	70.00	0.40	43.08	3015.38	0.45	48.46	0.25	26.92	1304.73	0.35	37.69	0.20	21.54	811.83	0.55	59.23	0.25	26.92	1594.67
7	0.90	96.92	0.38	40.92	3966.39	0.60	64.62	0.38	40.92	2644.26	0.45	48.46	0.30	32.31	1565.68	0.65	70.00	0.30	32.31	2261.54
8	0.80	85.15	0.45	48.46	4175.15	0.75	80.77	0.30	32.31	2609.47	0.35	37.69	0.20	21.54	811.83	0.52	56.00	0.40	43.08	2412.31
9	0.68	73.23	0.30	32.31	2365.92	0.42	45.23	0.30	32.31	1461.30	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.25	26.92	1739.64
10	0.90	96.92	0.35	37.69	3653.25	0.60	64.62	0.38	40.92	2644.26	0.45	48.46	0.30	32.31	1565.68	0.51	54.92	0.20	21.54	1182.96
11	0.68	73.23	0.45	48.46	3548.88	0.70	75.38	0.40	43.08	3247.34	0.50	53.85	0.35	37.69	2029.59	0.60	64.62	0.20	21.54	1391.72
12	0.70	75.38	0.30	32.31	2435.50	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68	0.65	70.00	0.30	32.31	2261.54
13	0.70	75.38	0.35	37.69	2841.42	0.58	62.46	0.28	30.15	1883.46	0.50	53.83	0.30	32.31	1739.64	0.70	75.38	0.50	53.85	4059.17
14	0.75	80.77	0.35	37.69	3044.38	0.55	59.25	0.30	32.31	1913.61	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
15	0.65	70.00	0.36	38.77	2713.85	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.30	32.31	1565.68	0.70	75.38	0.35	37.69	2841.42
16	0.58	60.31	0.38	40.92	2467.98	0.50	53.85	0.30	32.31	1739.64	0.45	48.46	0.30	32.31	1565.68	0.85	70.00	0.25	26.92	1884.62
17	0.65	70.00	0.45	48.46	3392.31	0.48	31.69	0.30	32.31	1670.06	0.41	44.15	0.30	32.31	1426.51	0.50	53.85	0.30	32.31	1739.64
18	1.10	118.46	0.40	43.08	5102.96	0.60	64.62	0.30	32.31	2087.37	0.41	44.15	0.25	26.92	1188.79	0.70	75.38	0.20	21.54	1623.67
19	0.45	48.46	0.55	59.23	2870.41	0.60	64.62	0.30	32.31	2087.37	0.40	43.08	0.30	32.31	1912.72	0.60	64.62	0.20	21.54	1391.72
20	0.60	64.62	0.30	32.31	2087.37	0.50	53.85	0.40	43.08	2319.53	0.49	52.77	0.34	36.62	1982.17	0.60	64.62	0.20	21.54	1391.72
21	0.60	64.62	0.35	37.69	2435.50	0.45	48.46	0.38	40.92	1983.19	0.41	44.15	0.36	38.77	1711.81	0.68	73.23	0.20	21.54	1577.28
22	0.82	88.31	0.50	52.31	2853.02	0.80	86.15	0.40	43.08	3711.24	0.41	44.15	0.35	37.69	1664.26	0.58	62.46	0.25	26.92	1681.66
23	0.52	56.00	0.40	43.08	2412.31	0.50	53.85	0.35	37.69	2029.59	0.50	53.85	0.25	26.92	1449.70	0.60	64.62	0.25	26.92	1739.64
24	0.62	66.77	0.40	43.08	2876.21	0.52	56.00	0.35	37.69	2110.77	0.49	52.77	0.30	32.31	1704.85	0.40	43.08	0.40	43.08	1855.62
25	0.78	84.00	0.55	37.69	3166.15	0.55	59.23	0.35	37.69	2232.54	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
Suma	1904.00	1024.15	77435.07		1529.25		902.46	55481.91	10.94	1178.15	7.25	780.77	36973.38		1610.00		786.15	50612.06		
Promedio	76.16	40.97	3077.46		61.17		36.10	351.52	0.44	47.13	0.29	31.23	286.51		64.40		31.45	2024.48		
D.E. (σ)	14.81	6.31	675.48		12.40		4.65	580.79	0.05	5.00	0.04	4.67	286.51		9.63		9.53	704.80		

Promedio del área de las células del haz: 3097.40
 Promedio del área de las células del envés: 2219.28
 El promedio de las células del haz es:
 El promedio del largo de las células guardia es:
 El promedio del largo de las células subsidiarias es:

322.85 células/mm cuadradas
 450.60 células/mm cuadradas
 1.40 veces el promedio de las células del envés.
 1.51 veces el promedio del ancho.
 2.05 veces el promedio del ancho.

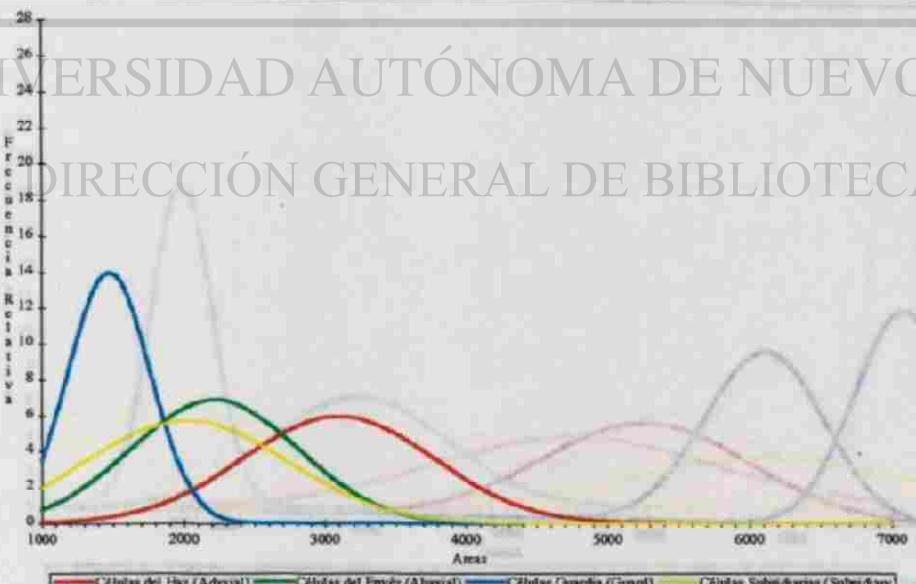


Fig. 1. Curvas normales estándar del ejemplar C01 S. saccata.

Cuadro 2. Datos estadísticos de C02 S. saccata.

C02 S. saccata (Osmf) Pl#290496-4 El Salvador y norte hasta Guatemala(I) y México																				
#	Células del Haz (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidary Cells)										
	Largo (Ls) Índice	Ancho (As) μm	Área μm²	Largo (Ls) Índice	Ancho (As) μ	Área μm²	Largo (Lg) Índice	Ancho (Ag) μ	Área μm²	Largo (Ls) Índice	Ancho (As) μ	Área μm²								
	μ	μ	μm²	μ	μ	μm²	μ	μ	μm²	μ	μ	μm²								
1	0.50	53.85	0.45	48.46	2609.47	0.55	59.23	0.30	32.31	1913.61	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.72	77.54	5427.69
2	0.65	70.00	0.30	32.31	2261.54	0.50	53.85	0.30	32.31	1739.64	0.35	37.69	0.25	26.92	1014.79	0.60	64.62	0.50	53.85	3479.29
3	0.60	64.62	0.35	37.69	2435.50	0.50	53.85	0.30	32.31	1739.64	0.40	43.08	0.20	21.54	927.81	0.55	59.23	0.30	32.31	1913.61
4	0.75	80.77	0.35	37.69	3044.38	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.35	37.69	1623.67	0.70	75.38	0.30	32.31	2435.50
5	0.80	86.15	0.30	32.31	2783.43	0.55	59.23	0.30	32.31	1913.61	0.40	43.08	0.25	26.92	1159.76	0.60	64.62	0.20	21.54	1391.72
6	0.70	75.38	0.25	26.92	2829.59	0.50	53.85	0.35	37.69	2029.59	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.60	64.62	4175.15
7	0.72	77.54	0.30	32.31	2505.09	0.90	56.92	0.32	34.46	3340.12	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.20	21.54	1139.76
8	0.85	91.54	0.25	26.92	2464.50	0.65	70.00	0.30	32.31	2261.54	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.35	59.23	3308.28
9	0.65	70.00	0.43	48.46	3392.31	0.55	59.23	0.35	37.69	2292.54	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.30	32.31	1391.72
10	0.90	96.92	0.32	34.46	3340.12	0.55	59.23	0.40	43.08	2551.48	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.25	26.92	1304.73
11	0.68	75.23	0.30	32.31	2365.92	0.60	64.62	0.38	40.92	2644.26	0.35	37.69	0.25	26.92	1014.79	0.50	53.85	0.35	59.23	3189.35
12	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.35	37.69	2455.50	0.35	37.69	0.20	21.54	811.83	0.55	59.23	0.45	48.46	2870.41
13	0.55	59.23	0.40	43.08	2551.48	0.50	53.85	0.45	48.46	2609.47	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.40	43.08	2551.48
14	0.75	80.77	0.35	37.69	3044.38	0.60	64.62	0.35	37.69	2435.50	0.30	32.31	0.20	21.54	695.86	0.45	48.46	0.30	32.31	1565.68
15	0.65	70.00	0.48	51.69	3618.46	0.35	37.69	0.42	45.23	1704.85	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.25	26.92	1304.73
16	0.90	96.92	0.38	40.92	3966.39	0.50	53.85	0.40	43.08	2319.53	0.50	53.85	0.30	32.31	1759.64	0.40	43.08	0.25	26.92	1139.76
17	0.90	96.92	0.45	48.46	4697.04	0.60	64.62	0.38	40.92	2644.26	0.30	32.31	0.25	26.92	869.82	0.40	43.08	0.20	21.54	927.81
18	0.58	62.46	0.45	48.46	3026.58	0.45	48.46	0.35	37.69	1826.63	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.25	26.92	1449.70
19	0.80	86.15	0.48	51.69	4453.49	0.45	48.46	0.30	32.31	1563.68	0.40	43.08	0.25	26.92	1159.76	0.60	64.62	0.30	32.31	2087.57
20	0.80	86.15	0.32	34.46	2968.59	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.40	43.08	2319.53
21	0.70	75.38	0.30	32.31	2455.50	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.28	30.15	1623.67
22	0.55	59.23	0.35	37.69	2292.54	0.45	48.46	0.35	37.69	1826.63	0.50	53.85	0.30	32.31	1759.64	0.42	45.23	0.25	26.92	1217.75
23	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.35	37.69	2029.59	0.50	53.85	0.35	37.69	2029.59	0.45	48.46	0.40	43.08	2087.57
24	0.82	88.31	0.35	37.69	3328.32	0.50	53.85	0.35	37.69	2029.59	0.35	37.69	0.20	21.54	811.83	0.40	43.08	0.30	32.31	1391.72
25	0.65	70.00	0.35	37.69	2688.46	0.50	53.85	0.35	37.69	2029.59	0.45	48.46	0.30	32.31	1563.68	0.60	64.62	0.20	21.54	1391.72
Suma	191.652	999.38	76022.47		1453.85		958.46	55477.27	9.70	1044.62	6.95	748.46	31601.55		1386.00	936.92	53325.91			
Promedio	76.68	39.98	3030.98		58.15		38.34	2310.03	0.39	41.78	21.03	29.94	1264.1		55.44	37.48	2133.04			
D.E. (σ)	17.45	8.38	782.53		10.54		4.62	413.71	0.05	5.87	0.05	4.94	330.48		9.15	15.22	1109.53			

Promedio del área de las células del haz: 3040.90
 Promedio del área de las células del envéz: 2219.09
 El promedio del largo de las células del haz es:
 El promedio del largo de las células guarda es:
 El promedio del largo de las células subsidiarias es:

328.85 células/mm cuadradas
 450.64 células/mm cuadradas
 1.37 veces el promedio de las células del envéz.
 1.40 veces el promedio del ancho.
 1.48 veces el promedio del ancho.



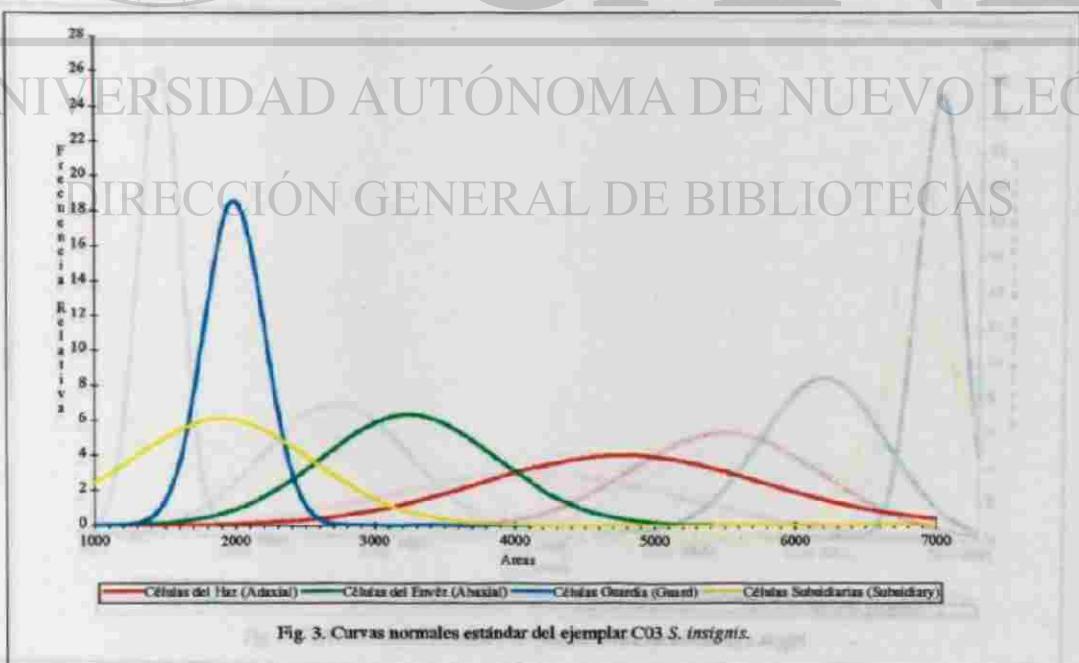
Cuadro 3. Datos estadísticos de C03 *S. insignis*.

C03 <i>S. insignis</i> (Coll.) PB#120777-2A Colombia																			
#	Células del Haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdiarias (Subsidiary Cells)									
	Largo (L) Índice	Ancho (A) Índice	Área μm^2	Largo (L) Índice	Ancho (A) Índice	Área μm^2	Largo (L) Índice	Ancho (A) Índice	Área μm^2	Largo (L) Índice	Ancho (A) Índice	Área μm^2							
	1 1.10	118.46	0.50	53.85	6378.70	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.39	42.00	2261.54	0.55	59.23	0.30	32.31
2 0.95	102.31	0.45	48.46	4957.99	0.70	75.38	0.55	59.23	4465.09	0.42	45.23	0.36	38.77	1753.56	0.55	59.23	0.25	26.92	1564.67
3 0.65	70.00	0.31	33.38	2336.92	0.68	73.23	0.42	45.23	3312.28	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.30	32.31	2087.57
4 0.88	94.77	0.40	43.08	4082.37	0.60	64.62	0.40	43.08	2788.45	0.48	51.69	0.35	37.69	1948.40	0.55	59.23	0.20	21.54	1275.74
5 1.00	107.69	0.40	43.08	4639.05	0.65	70.00	0.45	48.46	3392.31	0.50	53.85	0.40	43.08	2319.33	0.60	64.62	0.20	21.54	1391.72
6 0.70	75.38	0.40	43.08	3247.34	0.78	84.00	0.40	43.08	3618.46	0.46	49.54	0.38	40.92	2027.27	0.55	59.23	0.35	37.69	2232.54
7 1.05	113.08	0.40	43.08	4871.01	0.50	53.85	0.30	32.31	1789.64	0.52	56.00	0.42	45.23	2512.92	0.65	70.00	0.20	21.54	1507.69
8 0.63	70.00	0.50	33.38	3769.25	0.68	73.23	0.42	45.23	3312.28	0.50	53.85	0.40	43.08	2319.53	0.50	53.85	0.30	32.31	1739.64
9 0.63	70.00	0.50	33.38	3769.25	0.62	66.77	0.38	40.92	2752.40	0.48	51.69	0.36	38.77	2004.07	0.45	48.46	0.25	26.92	1364.75
10 0.75	80.77	0.50	33.38	4349.11	0.65	70.00	0.50	53.85	3769.23	0.45	48.46	0.40	43.08	2087.57	0.50	53.85	0.28	30.15	1623.67
11 0.90	96.92	0.46	49.54	4801.42	0.70	75.38	0.42	45.23	3409.70	0.46	49.54	0.36	38.77	1920.57	0.55	59.23	0.30	32.31	1913.61
12 0.89	86.15	0.50	33.38	4639.05	0.52	56.00	0.45	48.46	2713.85	0.48	51.69	0.40	43.08	2226.75	0.55	59.23	0.20	21.54	1275.74
13 0.85	91.54	0.50	33.38	4928.99	0.58	62.46	0.38	40.92	2556.12	0.44	49.54	0.35	37.69	1867.22	0.45	48.46	0.20	21.54	1043.79
14 0.80	86.15	0.50	33.38	4639.05	0.61	65.69	0.48	51.69	3393.79	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.40	43.08	1855.62
15 0.70	75.38	0.55	59.23	4465.09	0.60	64.62	0.45	48.46	3131.36	0.48	51.69	0.40	43.08	2226.75	0.50	53.85	0.40	43.08	2319.53
16 1.04	112.00	0.50	33.38	6030.77	0.55	59.23	0.40	43.08	2551.48	0.45	48.46	0.35	37.69	1826.63	0.65	70.00	0.30	32.31	2361.54
17 0.90	96.92	0.48	51.69	5010.18	0.60	64.62	0.45	48.46	3131.36	0.45	48.46	0.36	38.77	1878.82	0.45	48.46	0.30	32.31	1565.68
18 1.10	118.46	0.52	56.00	6633.85	0.50	53.85	0.45	48.46	2609.47	0.46	49.54	0.35	37.69	1867.22	0.50	53.85	0.50	53.85	2899.41
19 0.70	75.38	0.55	59.23	4463.09	0.67	72.13	0.40	43.08	3108.17	0.45	48.46	0.36	38.77	1878.82	0.48	51.69	0.35	39.23	3061.77
20 0.82	88.31	0.58	62.46	5515.83	0.65	70.00	0.45	48.46	3392.31	0.44	47.38	0.38	40.92	1939.12	0.50	53.85	0.25	26.92	1449.70
21 0.95	102.31	0.52	56.00	5729.23	0.58	62.46	0.50	53.85	3363.31	0.44	47.38	0.35	37.69	1786.04	0.45	48.46	0.30	32.31	1565.68
22 0.75	80.77	0.45	48.46	3914.20	0.82	38.31	0.50	53.85	4755.08	0.42	45.23	0.38	40.92	1850.98	0.55	59.23	0.60	64.62	3827.22
23 1.00	107.69	0.50	33.38	5788.82	0.62	66.77	0.40	43.08	2876.21	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.40	43.08	2319.53
24 0.76	81.85	0.50	33.38	4407.10	0.70	73.38	0.43	48.46	3653.25	0.45	48.46	0.35	37.69	1826.63	0.50	33.83	0.40	43.08	2319.53
25 0.92	99.08	0.55	59.23	5868.46	0.68	73.23	0.50	53.85	3543.19	0.48	51.69	0.35	37.69	1948.40	0.40	43.08	0.25	26.92	1159.76
Suma	2301.38	1294.46	119248.01	1705.85		1184.62	81195.02	11.53	1241.65	9.30	1001.54	49836.18		1392.46	859.38	47509.70			
Promedio	92.06	51.78	4780.92	68.73		47.38	2507.98	0.46	49.67	0.37	40.06	2004.07		55.70	34.38	1900.39			
D.E. (s)	15.51	6.54	598.85	8.36		5.75	631.54	0.03	3.00	0.02	2.47	215.54		7.14	11.76	655.69			

Promedio del área de las células del haz: 4769.92
 Promedio del área de las células del envés: 3247.80

El promedio del largo de las células del haz es:
 El promedio del largo de las células guardia es:
 El promedio del largo de las células subdiarias es:

3363.85 micras cuadradas
 3769.25 micras cuadradas
 3392.31 micras cuadradas
 1.47 veces el promedio de las células del envés.
 1.24 veces el promedio del ancho.
 1.62 veces el promedio del ancho.



Cuadro 4. Datos estadísticos de C04 S. hernandezii.

C04 S. hernandezii (Méx) P#290995-3 Guatemala y México (I)

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidiary Cells)										
	Largo (Lh) Índice	Ancho (Ah) Índice	Área μm²	Largo (Lc) Índice	Ancho (Ac) Índice	Área μm²	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm²	Largo (Ls) Índice	Ancho (As) Índice	Área μm²								
	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]								
1	0.50	33.85	0.60	64.02	3479.29	0.62	66.77	0.25	26.92	1797.63	0.38	40.92	0.30	32.31	1322.13	0.48	51.69	0.30	32.31	1670.06
2	0.62	66.77	0.52	56.00	3739.08	0.68	73.23	0.45	48.46	3548.88	0.38	40.92	0.32	34.46	1410.27	0.50	53.85	0.30	32.31	1739.64
3	0.70	75.38	0.28	30.15	2273.14	0.60	64.62	0.25	26.92	1739.64	0.48	51.69	0.28	30.15	1558.72	0.48	51.69	0.30	32.31	1670.06
4	0.55	59.23	0.40	43.08	2351.48	0.62	66.77	0.32	34.46	2300.97	0.48	51.69	0.30	32.31	1670.06	0.50	53.85	0.30	32.31	1739.64
5	0.45	48.46	0.40	43.08	2087.57	0.60	64.62	0.28	36.15	1948.40	0.35	37.69	0.25	26.92	1014.79	0.40	43.08	0.30	32.31	1391.72
6	0.50	33.85	0.40	43.08	2519.33	0.60	64.62	0.30	32.31	2087.57	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
7	0.70	75.38	0.40	43.08	3247.34	0.50	53.85	0.35	37.69	2029.59	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.30	32.31	1565.68
8	0.60	64.62	0.45	48.46	3131.36	0.85	91.54	0.25	26.92	2464.50	0.35	37.69	0.28	30.15	1136.57	0.45	48.46	0.25	26.92	1304.73
9	0.42	45.23	0.42	45.23	2045.82	0.50	53.85	0.30	32.31	1739.64	0.40	43.08	0.25	26.92	1159.76	0.40	43.08	0.20	21.54	927.81
10	0.45	48.46	0.40	43.08	2087.57	0.48	51.69	0.30	32.31	1670.06	0.35	37.69	0.25	26.92	1014.79	0.40	43.08	0.20	21.54	927.81
11	0.45	48.46	0.33	37.69	1826.63	0.55	59.23	0.32	34.46	2041.18	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.35	37.69	1826.63
12	0.50	33.85	0.50	64.02	3479.29	0.70	75.38	0.30	32.31	2435.50	0.40	43.08	0.25	26.92	1159.76	0.42	45.23	0.25	26.92	1217.75
13	0.70	75.38	0.35	37.69	2841.42	0.75	80.77	0.25	26.92	2174.56	0.35	37.69	0.28	30.15	1136.57	0.50	53.85	0.30	32.31	1739.64
14	0.70	75.38	0.60	64.62	4871.01	0.78	84.00	0.30	32.31	2713.85	0.38	40.92	0.30	32.31	1322.13	0.38	40.92	0.30	32.31	1322.13
15	0.65	70.00	0.40	43.08	3015.38	0.35	37.69	0.35	37.69	1420.71	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.20	21.54	927.81
16	0.62	66.77	0.40	43.08	2876.21	0.55	59.23	0.35	37.69	2232.54	0.35	37.69	0.30	32.31	1717.75	0.40	43.08	0.30	32.31	1391.72
17	0.72	77.54	0.32	34.46	2672.09	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.25	26.92	1014.79
18	0.55	59.23	0.40	43.08	2551.48	0.50	53.85	0.32	34.46	1855.62	0.40	43.08	0.25	26.92	1159.76	0.42	45.23	0.25	26.92	1217.75
19	0.62	66.77	0.35	37.69	2516.69	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68
20	0.60	64.62	0.48	51.69	3340.12	0.60	64.62	0.32	34.46	2226.75	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68
21	0.50	33.85	0.40	43.08	2319.53	0.45	48.46	0.35	37.69	1826.63	0.38	40.92	0.30	32.31	1322.13	0.40	43.08	0.35	37.69	1826.67
22	0.70	73.38	0.35	37.69	2841.42	0.45	48.46	0.45	48.46	2348.52	0.38	40.92	0.30	32.31	1322.13	0.45	48.46	0.40	43.08	2087.57
23	0.50	33.82	0.40	43.08	2319.53	0.55	59.23	0.30	32.31	1913.61	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
24	0.55	59.23	0.50	53.85	3189.35	0.50	53.85	0.40	43.08	2319.53	0.35	37.69	0.28	30.15	1136.57	0.35	37.69	0.25	26.92	1014.79
25	0.42	45.23	0.40	43.09	1948.40	0.40	43.08	0.40	43.08	1855.62	0.38	40.92	0.28	30.15	1233.99	0.40	43.08	0.25	26.92	1159.76
Suma		1536.77		1138.31	69570.71		1516.31		878.77	52402.74	9.64	1088.15	7.72	777.54	32296.65		1150.15	738.85	34932.07	
Promedio		61.47		45.33	3782.83		60.65		35.15	3996.1	0.39	41.53	0.29	31.10	1177.7		46.01	30.15	1397.28	
D.E. (c)		10.69		9.10	687.45		13.19		6.20	443.59	0.04	3.81	0.02	2.63	158.24		4.69	5.38	329.58	

Promedio del área de las células del haz: 2782.83

Promedio del área de las células del envés: 2096.11

El promedio de las células del haz es:

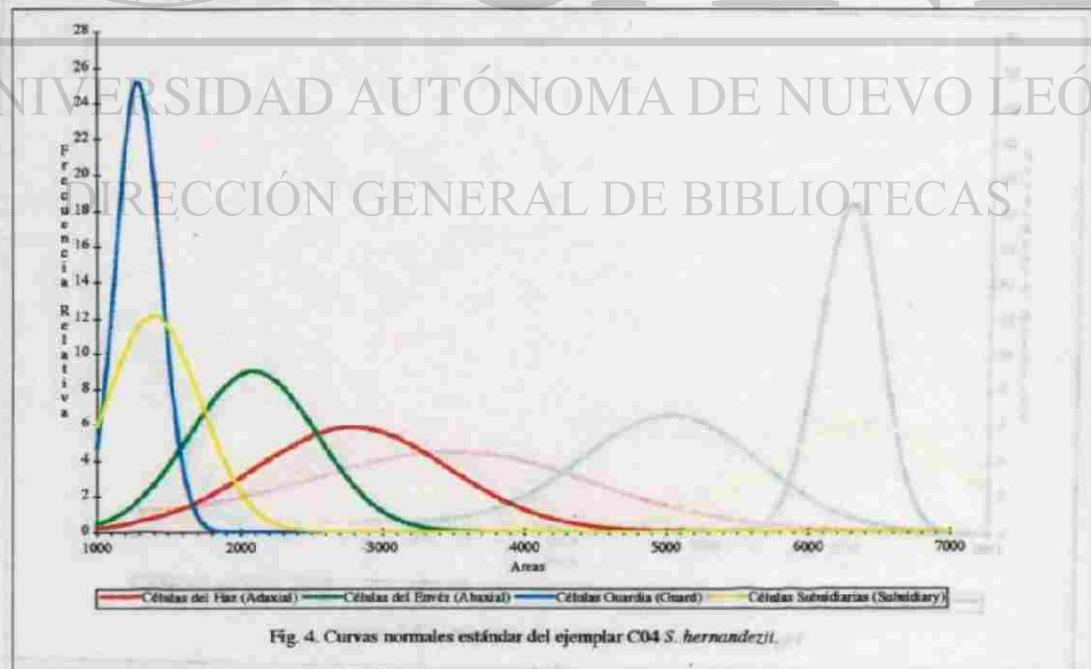
El promedio del largo de las células guarda es:

El promedio del largo de las células subsidiarias es:

133 veces el promedio de las células del envés.

134 veces el promedio del ancho.

133 veces el promedio del ancho.



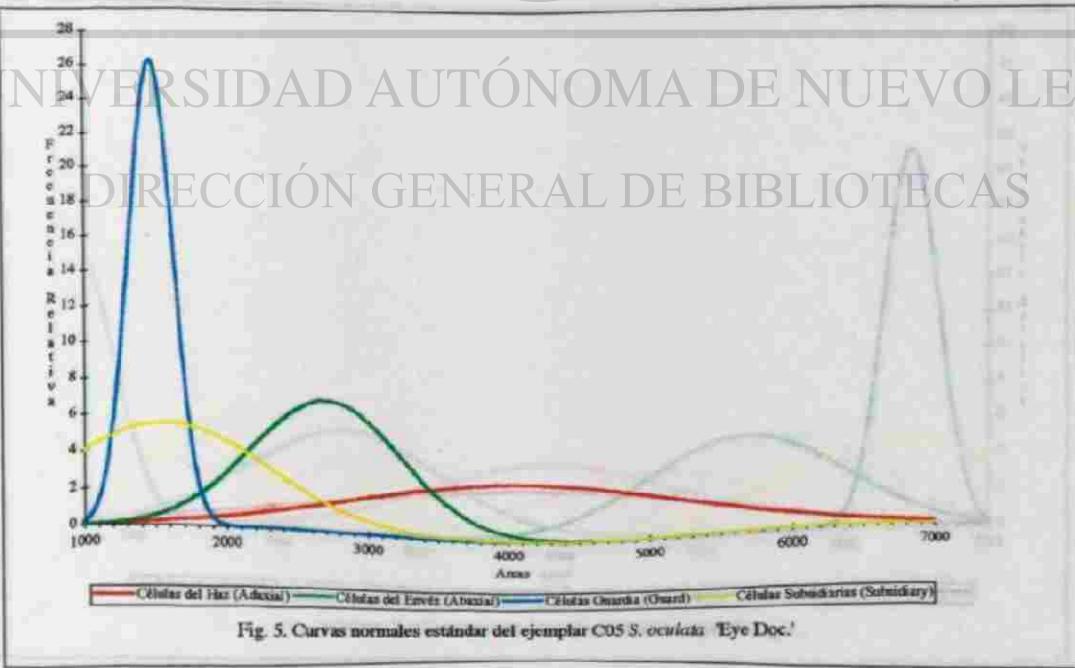
Cuadro 5. Datos estadísticos de C05 S. oculata: 'Eye Doc.'

C05 S. oculata Eye Doc' (PmL) PI#011095-7. El Valle, Panamá (1) y todos los países al norte incl. México

#	Células del Ház (Adaxial Cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)			
	Largo (Lh)	Ancho (Ah)	Área	Índice	Largo (Lc)	Ancho (Ac)	Área	Índice	Largo (Lg)	Ancho (Ag)	Área	Índice	Largo (La)	Ancho (Al)	Área	Índice
	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm]	[μm²]	[μm]
1	0.75	80.77	0.45	48.46	3914.20	0.86	92.02	0.35	37.69	3499.89	0.39	42.00	0.31	33.38	1402.15	0.50
2	0.65	70.00	0.40	43.08	3015.38	0.52	56.00	0.30	32.31	1809.23	0.40	43.08	0.31	33.38	1438.11	0.40
3	0.78	84.00	0.42	45.23	3799.38	0.52	56.00	0.38	40.92	2291.69	0.38	40.92	0.30	32.31	1322.13	0.40
4	1.08	116.31	0.45	48.46	5696.45	0.80	86.15	0.42	45.23	3896.80	0.46	43.08	0.32	34.46	1484.50	0.45
5	0.70	75.38	0.50	53.85	4059.17	0.74	78.69	0.32	34.46	2746.32	0.39	42.00	0.32	34.46	1447.38	0.40
6	0.75	80.77	0.50	53.85	4349.11	0.50	53.85	0.30	32.31	1739.64	0.39	42.00	0.31	33.38	1402.15	0.40
7	0.65	70.00	0.48	51.69	3618.46	0.70	75.38	0.36	38.77	2922.60	0.39	42.00	0.30	32.31	1356.92	0.40
8	0.65	70.00	0.45	48.46	3392.31	0.61	65.69	0.38	40.92	2688.33	0.41	44.15	0.33	35.54	1569.16	0.40
9	0.80	86.15	0.40	43.08	3711.24	0.60	64.62	0.40	43.08	2783.43	0.39	42.00	0.30	32.31	1356.92	0.45
10	0.78	84.00	0.45	48.46	4070.77	0.45	48.46	0.32	34.46	1670.06	0.39	42.00	0.32	34.46	1447.38	0.40
11	0.70	75.38	0.40	43.08	3247.34	0.80	86.15	0.36	38.77	3340.12	0.42	45.23	0.37	39.85	1802.27	0.40
12	0.75	80.77	0.45	48.46	3914.20	0.63	70.00	0.31	33.38	2336.92	0.40	43.08	0.31	33.38	1438.11	0.40
13	0.72	77.54	0.50	53.85	4175.15	0.55	55.23	0.42	45.23	2679.95	0.42	45.23	0.32	34.46	1558.72	0.40
14	0.60	64.62	0.52	56.00	3618.46	0.80	86.15	0.35	37.69	3247.34	0.40	43.08	0.30	32.31	1391.72	0.40
15	0.60	64.62	0.40	43.08	2783.43	0.67	72.15	0.32	34.46	2486.53	0.43	46.31	0.37	39.85	1845.18	0.45
16	0.70	73.38	0.45	48.46	3633.25	0.71	76.46	0.35	37.69	2882.01	0.42	45.23	0.31	33.38	1510.01	0.55
17	0.72	77.54	0.50	53.85	4175.15	0.65	70.00	0.40	43.08	3015.38	0.41	44.15	0.31	33.38	1474.06	0.55
18	1.10	118.46	0.40	43.08	5102.96	0.70	75.38	0.40	43.08	3247.34	0.41	44.15	0.32	34.46	1521.61	0.32
19	0.90	96.92	0.80	86.15	2505.29	0.62	66.77	0.35	37.69	2516.69	0.39	42.00	0.30	32.31	1356.92	0.32
20	0.75	80.77	0.59	53.85	4349.11	0.70	73.38	0.35	37.69	2841.42	0.39	42.00	0.31	33.38	1402.15	0.32
21	1.00	107.89	0.35	57.69	4059.17	0.50	53.85	0.45	48.46	2609.47	0.38	40.92	0.30	32.31	1322.13	0.35
22	0.65	70.00	0.38	49.92	2864.61	0.75	80.77	0.35	37.69	3044.38	0.42	45.23	0.28	30.15	1363.88	0.35
23	1.00	107.89	0.35	57.69	4059.17	0.65	70.00	0.30	32.31	2261.54	0.40	43.08	0.30	32.31	1391.72	0.35
24	0.70	75.38	0.50	53.85	4059.17	0.70	75.38	0.33	35.54	2679.05	0.39	42.00	0.32	34.46	1477.38	0.50
25	0.88	94.77	0.50	53.85	5102.96	0.78	84.00	0.34	36.62	3075.69	0.46	49.54	0.33	37.69	1867.22	0.50
Suma	2084.93	1298.46	103080.91		1780.15		959.54	68301.93	10.07	1084.46	7.89	849.69	36919.90		1115.69	877.69
Promedio	83.40	49.54	412.91		71.21		38.58	531.96	0.40	43.38	0.32	33.99	1671.15		44.63	35.11
D.E. (σ)	15.26	9.37	1103.11		11.85		4.43	534.93	0.02	1.93	0.02	2.26	151.79		7.09	13.02

Promedio del área de las células del haz: 4123.24
 Promedio del área de las células del envéz: 2752.08
 El promedio de las células del haz es:
 El promedio del largo de las células guardia es:
 El promedio del largo de las células subsidiarias es:

máximas cuadradas
 máximas cuadradas
 1.51 veces el promedio de las células del envéz.
 1.28 veces el promedio del ancho.
 1.27 veces el promedio del ancho.



Cuadro 6. Datos estadísticos de C06 *S. ocellata*.

Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subidiarias (Subsidiary Cells)											
#	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²								
1	0.70	75.38	0.60	64.62	4871.03	0.70	75.38	0.35	38.77	2922.50	0.50	53.85	0.30	32.31	1739.64	0.60	64.62	0.65	70.00	4523.08
2	0.55	59.28	0.48	51.69	3061.77	0.90	96.92	0.38	40.92	3966.39	0.42	45.23	0.30	32.31	1461.30	0.65	70.00	0.42	45.23	3166.15
3	0.51	54.92	0.50	53.85	2957.40	0.75	80.77	0.35	37.69	3044.38	0.49	52.77	0.30	32.31	1704.85	0.45	48.46	0.25	26.92	1304.75
4	0.80	86.15	0.40	43.99	3711.34	0.60	64.62	0.30	32.31	2087.57	0.49	52.77	0.30	32.31	1704.85	0.40	43.08	0.25	26.92	1159.76
5	0.60	64.62	0.44	47.38	3061.77	0.70	75.38	0.32	34.46	2597.87	0.48	51.69	0.35	37.69	1948.40	0.40	43.08	0.25	26.92	1159.76
6	0.90	96.92	0.35	37.69	3653.25	0.79	85.08	0.35	37.69	3206.75	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.40	43.08	1855.62
7	1.05	113.08	0.38	40.92	4627.45	0.55	59.28	0.45	48.46	2870.41	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.15	16.15	695.86
8	0.90	96.92	0.40	43.08	4175.15	0.75	80.77	0.32	34.46	2783.43	0.42	45.23	0.29	31.23	1412.59	0.35	37.69	0.30	32.31	1217.75
9	0.50	53.85	0.65	70.00	3769.23	0.58	62.46	0.32	34.46	2152.32	0.48	51.69	0.30	32.31	1670.06	0.45	48.46	0.30	32.31	1565.68
10	0.65	70.00	0.55	59.28	4146.15	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
11	0.70	75.38	0.45	48.46	3653.25	0.60	64.62	0.40	43.08	2783.43	0.42	45.23	0.35	37.69	1704.85	0.40	43.08	0.25	26.92	1159.76
12	0.50	53.85	0.45	48.46	2609.47	0.45	48.46	0.35	37.69	1826.63	0.40	43.08	0.33	35.54	1580.89	0.45	48.46	0.20	21.54	1043.79
13	0.50	53.85	0.50	53.85	2899.41	0.95	102.31	0.40	43.08	4407.10	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.40	43.08	2087.57
14	0.70	75.38	0.60	64.62	4871.01	0.85	91.54	0.30	32.31	2957.40	0.45	48.46	0.39	42.00	2033.38	0.50	53.85	0.50	53.85	2899.41
15	1.00	107.69	0.65	70.00	7538.46	0.65	70.00	0.35	37.69	2638.46	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.20	21.54	1159.76
16	0.58	62.46	0.50	53.85	3363.31	0.40	43.08	0.32	34.46	1484.50	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.40	43.08	2087.57
17	0.60	64.62	0.50	53.85	3479.29	0.79	85.08	0.32	34.46	2931.88	0.38	40.92	0.30	32.31	1322.13	0.50	53.85	0.30	32.31	1739.64
18	0.75	80.77	0.40	43.08	3479.29	0.89	86.15	0.35	37.69	3247.34	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.30	32.31	1391.72
19	0.50	53.85	0.50	53.85	2899.41	0.74	79.69	0.39	42.00	3347.08	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.25	26.92	1449.70
20	0.63	70.00	0.50	53.85	3769.23	0.70	73.38	0.42	45.23	3409.70	0.45	48.46	0.28	30.15	1461.30	0.50	53.85	0.20	21.54	1159.76
21	0.70	75.38	0.65	70.00	3276.92	0.70	75.38	0.35	37.69	2841.42	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.91
22	0.80	86.15	0.65	70.00	6030.77	0.55	59.23	0.35	37.69	2232.54	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
23	0.60	64.62	0.65	70.00	4523.08	0.39	42.00	0.39	42.00	1764.00	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.25	26.92	1304.75
24	0.70	75.38	0.65	70.00	5276.92	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.32	34.46	1484.50	0.40	43.08	0.30	32.31	1391.72
25	0.88	94.77	0.65	70.00	5693.85	0.79	85.08	0.38	40.92	3481.61	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.30	32.31	1565.68
	Suma			1865.23	1403.38	10433.09	1774.77		971.38	68696.75	10.38	139.38	7.92	852.91	38835.54		1211.54		820.62	40800.47
	Promedio			74.61	56.22	1173.39	70.99		38.86	27.67	0.42	45.58	0.32	34.12	152.39		48.46		32.82	1632.02
	D.E. (σ)			17.23	10.85	1240.10	17.51		4.20	717.38	0.04	4.24	0.03	2.83	187.90		7.29		11.71	823.79

Promedio del área de las células del haz: 4175.52
 Promedio del área de las células del envéz: 2747.85
 El promedio de las células del haz es:

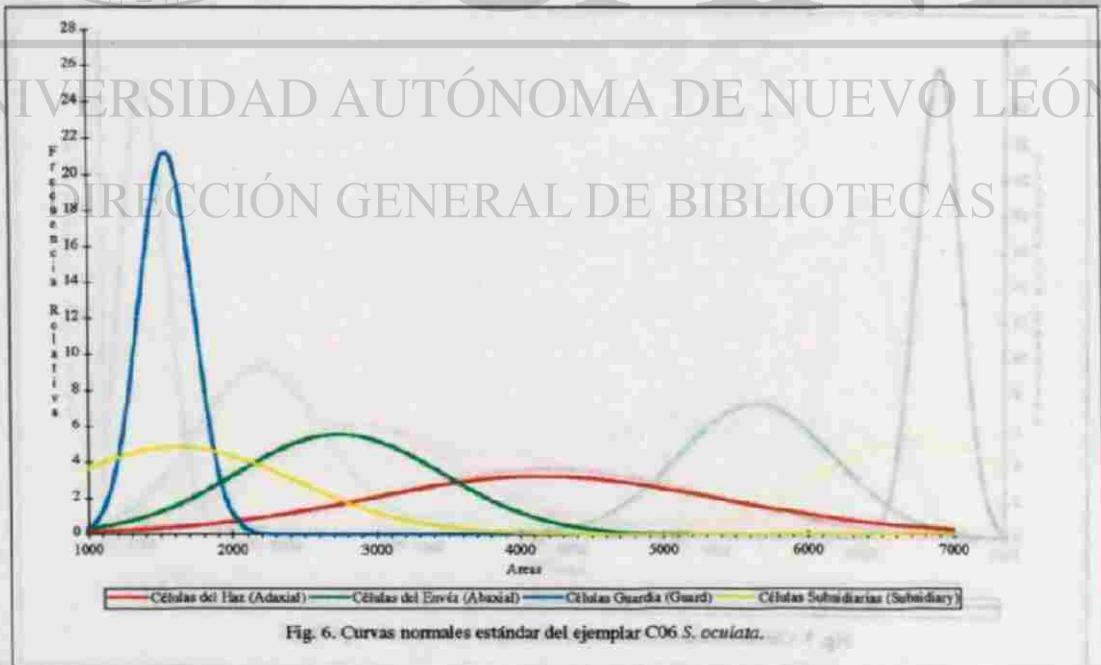
1.32 veces el promedio de las células del envéz.

El promedio del largo de las células guardia es:

1.34 veces el promedio del ancho.

El promedio del largo de las células subidiarias es:

1.48 veces el promedio del ancho.



Cuadro 7. Datos estadísticos de C07 S. tigrina.

#	Células del Hx (Adaxial Cells)			Células del Envíz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subidiarias (Subsidary Cells)		
	Largo (Lh)	Ancho (Ah)	Área	Largo (Le)	Ancho (Ae)	Área	Largo (Lg)	Ancho (Ag)	Área	Largo (La)	Ancho (As)	Área
	Índice	Índice	[mm]	Índice	Índice	[mm]	Índice	Índice	[mm]	Índice	Índice	[mm]
1	0.64	68.92	0.60	64.62	4453.49	0.65	70.00	0.50	53.85	3769.23	0.35	37.69
2	0.82	88.31	0.55	59.23	5230.53	0.65	70.00	0.40	43.08	3015.38	0.35	37.69
3	0.60	64.62	0.55	59.23	3827.22	0.40	43.08	0.45	48.46	2087.57	0.30	32.31
4	0.85	91.54	0.50	53.85	4928.99	0.55	59.23	0.45	48.46	2870.41	0.30	32.31
5	0.92	99.08	0.55	59.23	5868.40	0.60	64.62	0.30	32.31	2087.57	0.30	21.54
6	0.70	73.38	0.65	70.00	5276.92	0.70	75.38	0.45	48.46	3653.25	0.40	43.08
7	0.70	75.38	0.55	59.23	4465.09	0.70	75.38	0.45	48.46	3653.25	0.30	32.31
8	0.75	80.77	0.60	64.62	5218.93	0.80	86.15	0.40	43.08	3711.24	0.30	32.31
9	0.70	75.38	0.50	53.85	4059.17	0.55	59.23	0.40	43.08	2551.48	0.25	26.92
10	0.60	64.62	0.50	53.85	3479.29	0.60	64.62	0.40	43.08	2763.43	0.30	32.31
11	0.50	53.85	0.72	77.54	4175.15	0.60	64.62	0.50	53.85	3479.29	0.30	32.31
12	0.50	53.85	0.70	73.38	4059.17	0.60	64.62	0.35	37.69	2433.50	0.30	32.31
13	0.75	80.77	0.60	64.62	5218.93	0.40	43.08	0.45	48.46	2087.57	0.35	37.69
14	0.80	86.15	0.45	48.46	4175.15	0.55	59.23	0.45	48.46	2870.41	0.35	37.69
15	0.65	70.00	0.45	48.46	3392.31	0.70	75.38	0.40	43.08	3247.34	0.30	32.31
16	0.70	75.38	0.55	59.23	4465.09	0.80	86.15	0.40	43.08	3711.24	0.40	21.54
17	0.65	70.00	0.45	48.46	3392.31	0.50	53.85	0.40	43.08	2319.53	0.40	43.08
18	0.70	75.38	0.50	53.85	4059.17	0.60	64.62	0.50	53.85	3479.29	0.35	37.69
19	0.75	80.77	0.50	53.85	4349.11	0.85	91.54	0.40	43.08	3943.19	0.30	32.31
20	0.50	53.85	0.45	48.46	3609.47	0.80	86.15	0.35	37.69	3247.34	0.20	21.54
21	0.60	64.62	0.45	48.46	3131.36	0.65	70.00	0.35	37.69	2638.46	0.40	43.08
22	0.70	75.38	0.55	59.23	4465.09	0.40	43.08	0.50	53.85	2319.53	0.40	43.08
23	0.75	80.77	0.65	70.00	5653.85	0.40	43.08	0.35	37.69	1623.67	0.35	37.69
24	0.60	64.62	0.45	48.46	3131.36	0.45	48.46	0.35	37.69	1826.63	0.50	53.85
25	0.65	70.00	0.45	48.46	3392.31	0.35	37.69	0.50	53.85	2079.59	0.30	32.31
Suma	1819.38		1450.62	106477.85		1599.23		1125.38	71441.41	8.35	899.23	
Promedio	73.58		58.02	4351.11		63.97		45.02	63.97	0.33	35.97	0.24
D.E. (n)	11.41		8.75	852.13		15.26		6.19	700.88	0.06	6.54	0.04
										4.14	260.27	9.48
												7.15
												631.11

Promedio del área de las células del hz: 4259.11

Promedio del área de las células del envíz: 2857.66

El promedio de las células del hz es:

El promedio del largo de las células guardia es:

El promedio del largo de las células subsidiarias es:

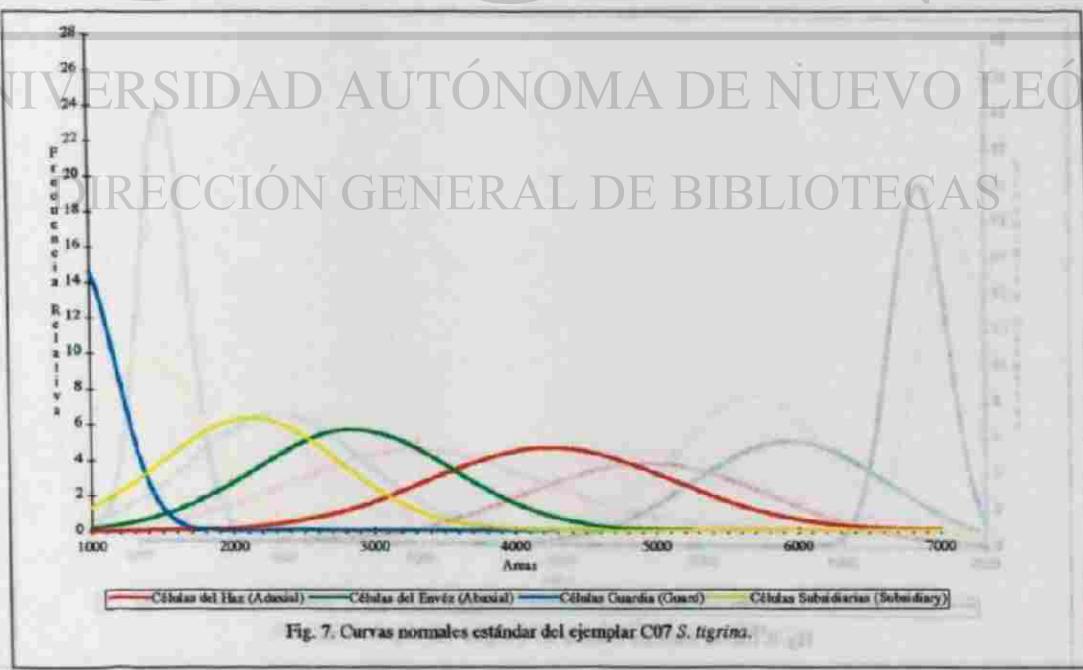
millas cuadradas

millas cuadradas

1.40 veces el promedio de las células del envíz.

1.42 veces el promedio del ancho.

1.50 veces el promedio del ancho.



Cuadro 8. Datos estadísticos de C08.S. graveolens.

C08.S. graveolens (Méjico) PI#311095-5 Honduras y todos los países al norte (incl. México (!))

#	Células del Hax (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _b) Indice	Ancho (A _b) Indice	Area μm ²	Largo (L _a) Indice	Ancho (A _a) Indice	Area μm ²	Largo (L _g) Indice	Ancho (A _g) Indice	Area μm ²	Largo (L _s) Indice	Ancho (A _s) Indice	Area μm ²								
	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]								
1	0.64	68.92	0.50	53.85	371.24	0.45	48.46	0.60	64.62	3131.36	0.43	46.31	0.30	32.31	1496.09	5.00	538.46	0.40	43.08	23195.26
2	0.71	76.46	0.68	73.23	5599.34	0.30	32.31	0.55	59.25	1913.61	0.42	45.23	0.35	37.69	1704.85	0.50	53.85	0.30	32.31	1739.64
3	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.45	48.46	2087.57	0.42	45.23	0.30	32.31	14613.0	0.50	53.85	0.30	32.31	1739.64
4	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.55	53.85	2319.53	0.41	44.15	0.30	32.31	1426.51	0.55	59.23	0.30	32.31	1913.61
5	0.54	58.15	0.48	51.69	3006.11	0.40	43.08	0.55	59.25	2551.48	0.40	43.08	0.36	38.77	1670.06	0.35	37.69	0.40	43.08	1623.67
6	0.49	52.77	0.42	45.23	2386.79	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.28	38.15	1298.93
7	0.72	77.54	0.57	61.38	4759.67	0.45	48.46	0.45	48.46	2348.32	0.35	37.69	0.28	30.15	1136.57	0.55	59.23	0.30	32.31	1913.61
8	0.50	53.85	0.43	48.46	2609.47	0.40	43.08	0.40	43.08	1855.62	0.42	45.23	0.34	36.62	1636.14	0.50	53.85	0.30	2899.41	
9	0.68	73.23	0.45	48.46	3548.88	0.50	53.85	0.55	59.25	3189.35	0.40	43.08	0.30	32.31	1391.72	0.30	32.31	0.65	70.00	2261.54
10	0.79	75.38	0.40	43.08	3247.34	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.34	36.62	1577.28	0.45	48.46	0.30	32.31	1565.66
11	0.67	72.15	0.50	53.85	3885.21	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.31	33.38	1438.11	0.50	53.85	0.25	26.92	1449.70
12	0.58	62.46	0.52	56.00	3497.85	0.50	53.85	0.45	48.46	2609.47	0.40	43.08	0.31	33.38	1438.11	0.50	53.85	0.35	37.69	2029.59
13	0.69	74.31	0.45	48.46	3601.06	0.40	43.08	0.40	43.08	1855.62	0.38	40.97	0.31	33.38	1366.20	0.75	80.77	0.45	48.46	3914.20
14	0.68	73.23	0.48	51.69	3783.47	0.45	48.46	0.45	48.46	2348.52	0.38	40.92	0.30	32.31	1322.13	0.55	59.23	0.45	48.46	2870.41
15	0.68	73.23	0.52	56.00	4100.92	0.45	48.46	0.45	48.46	2348.52	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.60	64.62	3479.29
16	0.64	68.92	0.61	65.69	4527.72	0.65	70.00	0.50	53.85	3769.23	0.40	43.08	0.35	37.69	1623.67	0.35	37.69	0.40	43.08	1623.67
17	0.53	57.08	0.49	52.77	3011.90	0.50	53.85	0.42	45.23	2435.50	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.50	53.85	3479.29
18	0.70	75.38	0.44	47.38	3572.07	0.45	48.46	0.20	21.54	1043.79	0.36	38.77	0.31	33.38	1294.30	0.50	53.85	0.35	37.69	2029.59
19	0.70	75.38	0.46	49.54	3734.44	0.50	53.85	0.50	53.85	2899.41	0.39	42.00	0.30	32.31	1536.97	0.55	59.23	0.25	26.92	1594.67
20	0.55	59.23	0.45	48.46	2870.41	0.30	32.31	0.45	48.46	1563.68	0.40	43.08	0.31	33.38	1438.11	0.40	43.08	0.30	32.31	1391.72
21	0.40	43.08	0.42	45.23	1948.40	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
22	0.60	64.62	0.40	43.08	2783.43	0.45	48.46	0.50	53.85	2609.47	0.45	48.46	0.35	37.69	1826.63	0.50	53.85	0.20	21.54	1159.76
23	0.50	53.85	0.56	38.77	2087.57	0.60	64.62	0.45	48.46	3131.36	0.36	38.77	0.25	26.92	1043.79	0.40	43.08	0.35	37.69	1623.67
24	0.58	62.46	0.45	48.46	3026.98	0.60	64.62	0.40	43.08	2783.43	0.40	43.08	0.38	40.92	1762.84	0.35	37.69	0.30	32.31	1212.75
25	0.68	73.23	0.55	59.23	4357.51	0.68	73.23	0.45	48.46	3548.88	0.40	43.08	0.27	29.06	1232.54	0.50	53.85	0.30	32.31	1739.64
Suma	1627.23	1286.92	84510.78		1230.92		1202.92	59304.49	10.02	1079.08	7.77	847.54	36685.63		1782.31	977.85	71493.60			
Promedio	65.09	51.48	3300.43		49.24		48.12	33.90		43.16	31.31	33.90	36685.63		71.29	39.11	2859.74			
D.E. (σ)	10.41		7.67		878.21		10.17		9.41		682.81	0.02	2.58	0.03	3.26	199.12	97.86	11.85	4301.08	

Promedio del área de las células del hax:

3380.43 micras cuadradas

Promedio del área de las células del envéz:

295.82 células/mm cuadrados

El promedio de las células del hax es:

421.55 células/mm cuadrados

El promedio del largo de las células guardia es:

1.43 veces el promedio de las células del envéz.

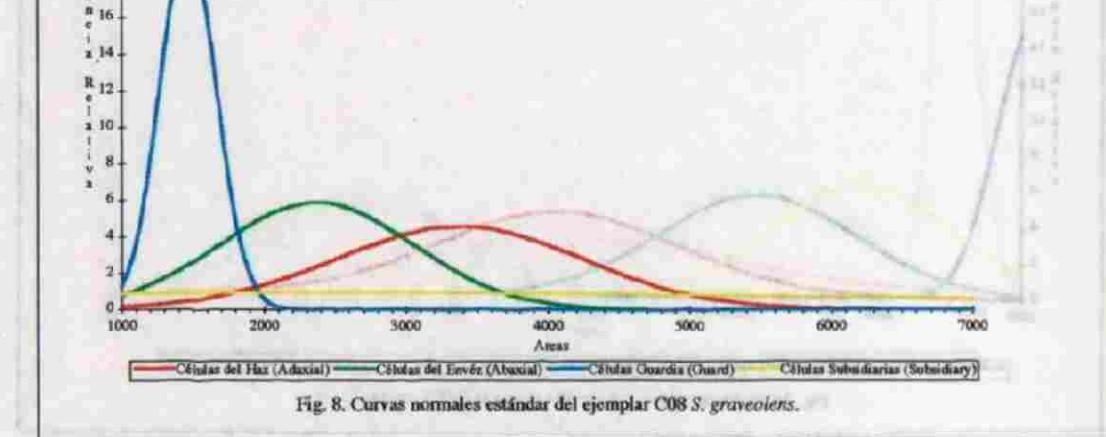
El promedio del largo de las células subsidiaria es:

1.27 veces el promedio del ancho.

1.82 veces el promedio del ancho.

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Cuadro 9. Datos estadísticos de C09 *S. graveolens*.

C09 *S. graveolens* (Méj) PH#290496-7 Honduras y todos los países al norte incl. México (!)

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células guarda (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (Lh)	Ancho (Ah)	Área	Largo (Le)	Ancho (Ae)	Área	Largo (Lg)	Ancho (Ag)	Área	Largo (Ls)	Ancho (As)	Área
	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice
1	0.75	80.77	0.45	48.46	3914.20	0.55	59.25	0.30	32.31	1913.61	0.36	40.92
2	1.06	116.31	0.40	43.08	5010.18	0.30	32.31	0.30	32.31	1043.79	0.39	42.00
3	0.52	56.00	0.40	43.08	2412.31	0.40	43.08	0.40	43.08	1855.62	0.40	43.08
4	0.60	64.62	0.50	53.85	3479.29	0.30	32.31	0.35	37.69	1217.75	0.42	45.23
5	0.80	86.15	0.45	48.46	4175.15	0.60	64.62	0.40	43.08	2783.41	0.40	43.08
6	0.55	59.23	0.35	37.69	2232.54	0.57	61.38	0.45	48.46	1974.79	0.38	40.92
7	0.60	64.62	0.35	37.69	2435.50	0.60	64.62	0.50	53.85	3479.29	0.40	43.08
8	0.60	64.62	0.40	43.08	2783.43	0.50	53.85	0.50	53.85	2899.41	0.40	43.08
9	0.82	88.31	0.40	43.08	3804.02	0.60	64.62	0.40	43.08	2783.43	0.41	44.15
10	0.70	75.38	0.45	43.08	3247.34	0.50	53.85	0.40	43.08	2319.53	0.42	45.23
11	1.00	107.69	0.45	48.46	5218.99	0.61	65.69	0.40	43.08	2829.82	0.40	43.08
12	0.75	80.77	0.50	53.85	4349.11	0.45	48.46	0.52	56.00	2713.85	0.43	46.51
13	0.80	86.15	0.40	43.08	3711.24	0.50	53.85	0.45	48.46	2609.47	0.40	43.08
14	0.78	84.00	0.42	45.23	3799.38	0.50	53.85	0.40	43.08	2319.53	0.42	45.23
15	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.50	53.85	2319.53	0.38	40.92
16	0.60	64.62	0.38	40.92	2644.26	0.65	70.00	0.33	37.69	2638.46	0.35	37.69
17	0.80	86.15	0.38	40.92	3525.68	0.55	59.23	0.35	37.69	2232.54	0.41	44.15
18	0.50	53.85	0.45	48.46	2609.47	0.60	64.62	0.35	37.69	2435.50	0.40	43.08
19	0.50	53.85	0.55	57.69	2029.59	0.50	32.31	0.40	43.08	1391.72	0.37	39.85
20	0.90	96.92	0.40	43.08	4175.15	0.85	70.00	0.30	32.31	2261.54	0.40	43.08
21	0.65	70.90	0.40	43.08	3015.38	0.55	59.23	0.36	38.77	2296.33	0.42	45.23
22	0.50	53.85	0.40	43.08	2319.53	0.55	37.69	0.40	43.08	1623.67	0.45	48.46
23	0.48	51.69	0.48	51.69	2672.09	0.32	34.46	0.40	43.08	1484.50	0.32	34.46
24	0.70	75.38	0.38	40.92	3084.97	0.52	56.00	0.45	48.46	2713.85	0.40	43.08
25	0.70	75.38	0.40	43.08	3247.34	0.56	60.31	0.40	43.08	2997.87	0.41	44.15
Suma	1850.15	1108.15	82215.61		1338.52	1080.15	57738.81	10.04	1081.25	8.20	877.69	37968.44
Promedio	74.01	44.35	522.54		53.54	43.21	5366.98	0.40	43.25	0.33	35.11	1400.99
D.E. (n)	17.47		4.51		12.25	6.72	600.76	0.02	2.19	0.03	3.38	8.78
												9.47
												408.39

Promedio del área de las células del haz: 3288.62

Promedio del área de las células del envéz: 2809.55

El promedio de las células del haz es:

El promedio del largo de las células guarda es:

El promedio del largo de las células subsidiarias es:

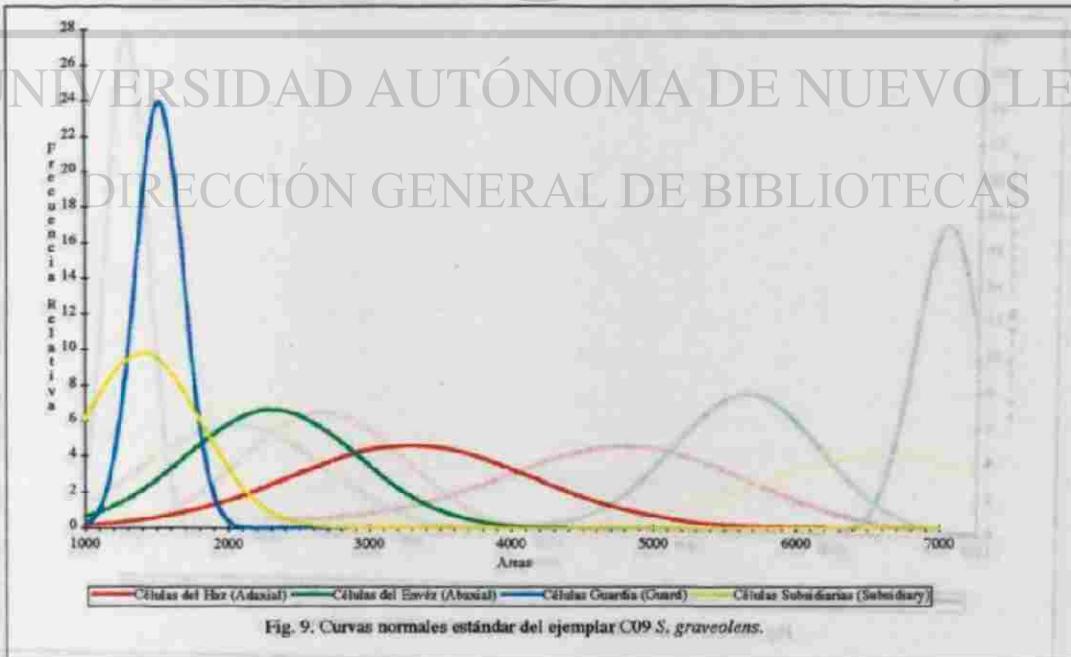
304.08 células/mm cuadrados

303.98 células/mm cuadrados

142 veces el promedio de las células del envéz.

123 veces el promedio del ancho.

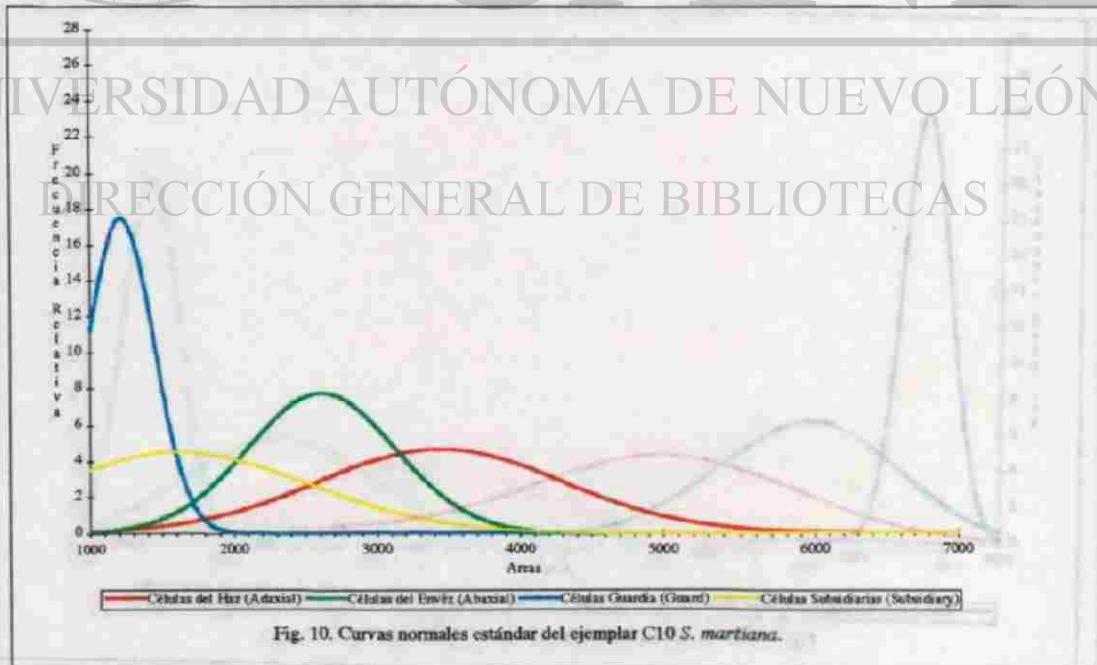
1.60 veces el promedio del ancho.



Cuadro 10. Datos estadísticos de C10. *S. martiana*.

C10. <i>S. martiana</i> (Morf) PI#090995-2. Mísero (1)																				
#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _b)	Área	Largo (L _a)	Ancho (A _b)	Área	Largo (L _a)	Ancho (A _b)	Área	Largo (L _a)	Ancho (A _b)	Área								
	Índice	μ_m	Índice	μ_m	Índice	μ_m	Índice	μ_m	Índice	Índice	μ_m	Índice								
1	0.95	102.31	0.49	52.77	0.55	59.25	0.38	40.92	2423.90	0.35	37.69	0.30	32.31	1217.75	0.52	56.90	0.40	43.08	2412.21	
2	0.58	62.46	0.46	49.54	3064.25	0.45	48.46	0.40	43.08	2087.57	0.42	45.23	0.25	26.92	1217.75	0.42	45.23	0.42	45.23	2045.82
3	0.59	63.54	0.35	37.69	2394.91	0.48	51.69	0.34	36.62	1892.73	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.45	48.46	2609.47
4	0.64	68.92	0.48	51.69	3562.79	0.56	60.31	0.42	45.23	2727.76	0.40	43.08	0.25	26.92	1159.76	0.60	64.62	0.58	62.46	4035.98
5	0.49	52.77	0.41	44.15	2329.96	0.52	56.00	0.38	40.92	2291.69	0.35	37.69	0.25	26.92	1014.79	0.65	70.00	0.35	37.69	2638.46
6	0.89	55.85	0.46	49.54	4748.07	0.65	70.00	0.35	37.69	2638.46	0.40	43.08	0.25	26.92	1159.76	0.55	59.23	0.30	32.31	1913.61
7	0.70	75.38	0.48	51.69	3896.80	0.54	68.92	0.40	43.08	2968.99	0.40	43.08	0.25	26.92	1159.76	0.40	43.08	0.35	37.69	1623.67
8	0.60	64.62	0.40	43.08	2783.43	0.56	60.31	0.42	45.23	2727.76	0.45	48.46	0.30	32.31	1565.68	0.30	32.31	0.40	43.08	1391.72
9	0.63	67.85	0.50	53.85	3653.25	0.40	43.08	0.40	43.08	1855.62	0.38	40.92	0.25	26.92	1101.77	0.50	53.85	0.40	43.08	2319.53
10	0.58	62.46	0.35	37.69	2354.32	0.58	62.46	0.42	45.23	2825.18	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.60	64.62	2789.43
11	0.77	82.92	0.42	45.23	3750.67	0.50	53.85	0.40	43.08	2319.33	0.35	37.69	0.30	32.31	1217.75	0.58	62.46	0.38	46.92	2556.12
12	0.58	62.46	0.39	42.00	2623.38	0.71	76.46	0.40	43.08	3293.73	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.38	46.92	2203.55
13	0.67	72.15	0.35	37.69	2719.64	0.52	56.00	0.40	43.08	2412.31	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.35	37.69	1623.67
14	0.59	63.54	0.52	56.00	3558.15	0.85	91.54	0.35	37.69	3450.30	0.42	45.23	0.30	32.31	1461.30	0.35	37.69	0.20	21.54	811.85
15	0.60	64.62	0.35	37.69	2485.50	0.50	53.85	0.40	43.08	2319.33	0.40	43.08	0.20	21.54	927.81	0.40	43.08	0.25	26.92	1159.76
16	0.80	86.15	0.42	45.23	3896.80	0.35	37.69	0.41	44.15	1664.26	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
17	0.70	75.38	0.43	46.31	3490.89	0.60	64.62	0.35	37.69	2435.50	0.45	48.46	0.35	37.69	1826.63	0.35	37.69	0.25	26.92	1014.79
18	0.60	64.62	0.40	43.08	2783.43	0.50	53.85	0.35	37.69	2029.59	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.30	32.31	1217.75
19	0.81	87.23	0.52	56.00	4884.92	0.65	70.00	0.30	32.31	2261.54	0.38	40.92	0.20	21.54	881.42	0.30	32.31	0.15	16.15	521.89
20	0.72	77.54	0.50	53.85	4175.15	0.59	63.54	0.40	43.08	2737.04	0.40	43.08	0.20	21.54	927.81	0.30	32.31	0.15	16.15	521.89
21	0.69	74.31	0.42	45.23	3360.99	0.70	75.38	0.40	43.08	3247.34	0.40	43.08	0.25	26.92	1159.76	0.35	37.69	0.25	26.92	1014.79
22	0.60	64.62	0.43	46.31	2992.19	0.65	70.00	0.45	48.46	3392.31	0.35	37.69	0.25	26.92	1014.79	0.40	43.08	0.20	21.54	927.81
23	0.80	86.15	0.52	56.00	4824.61	0.78	84.00	0.38	40.92	3427.54	0.35	37.69	0.30	32.31	1217.75	0.30	32.31	0.20	21.54	695.86
24	0.64	68.92	0.46	49.54	3414.34	0.35	59.23	0.44	47.38	2806.63	0.40	43.08	0.20	21.54	927.81	0.35	37.69	0.25	26.92	1014.79
25	0.64	68.92	0.40	43.08	2968.99	0.64	68.92	0.40	43.08	2968.99	0.40	43.08	0.30	32.31	1391.72	0.30	32.31	0.20	21.54	695.86
Suma		1815.69			1174.92	86096.18			1559.38		1048.92	63215.80	9.70	1044.62	6.75	726.92	30380.00			1127.54
Promedio		72.63			47.00	3443.55			62.38		41.96	300.	0.39	41.78	0.27	29.08	1111.77			45.10
D.E. (e)		11.79			6.02	861.02			12.20		3.65	514.27	0.03	3.33	0.04	4.56	228.60			11.12
																				13.04
																				891.22

Promedio del área de las células del haz: 3443.85
 Promedio del área de las células del envéz: 2908.65
 El promedio de las células del haz es 1.32 veces el promedio de las células del envéz.
 El promedio de las células guardia es 1.44 veces el promedio del ancho.
 El promedio del largo de las células subsidiarias es 1.32 veces el promedio del ancho.



Cuadro 11. Datos estadísticos de C11 *S. intermedia*.

C11 *S. intermedia* (Máx.) PI090995-1 México (I)

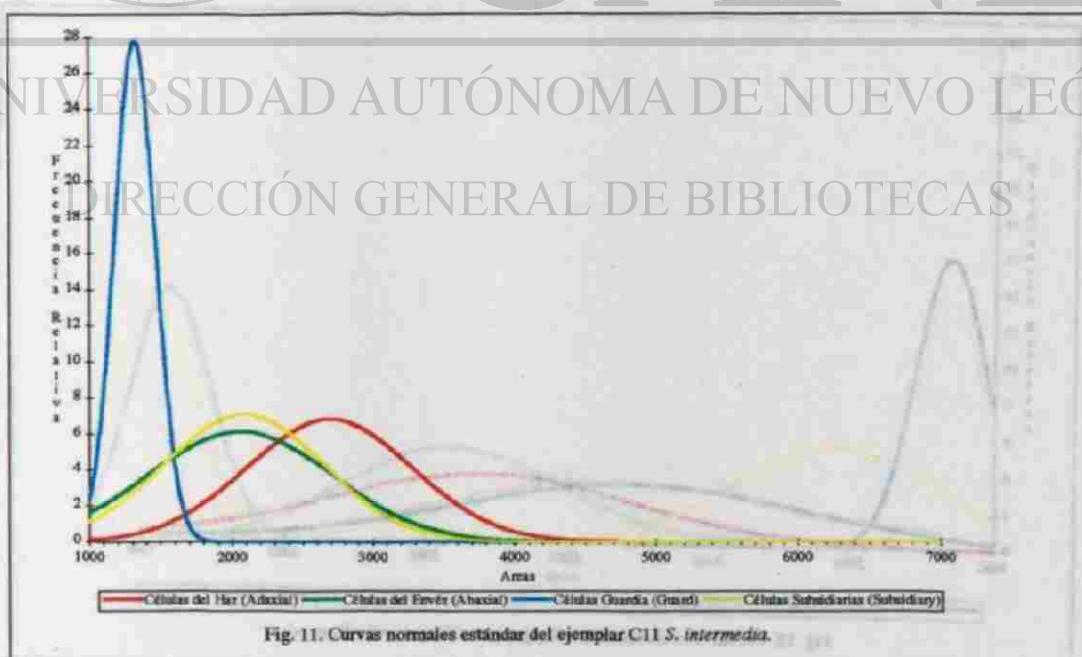
#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdiarias (Subsidiary Cells)										
	Largo (Lz)	Ancho (Ax)	Área	Largo (Lz)	Ancho (Ax)	Área	Largo (Lz)	Ancho (Ax)	Área	Largo (Lz)	Ancho (Ax)	Área								
	Índice $\frac{Lz}{Ax}$	Índice $\frac{Ax}{Lz}$	$\frac{Lz}{Ax} \cdot Ax$	Índice $\frac{Lz}{Ax}$	Índice $\frac{Ax}{Lz}$	$\frac{Lz}{Ax} \cdot Ax$	Índice $\frac{Lz}{Ax}$	Índice $\frac{Ax}{Lz}$	$\frac{Lz}{Ax} \cdot Ax$	Índice $\frac{Lz}{Ax}$	Índice $\frac{Ax}{Lz}$	$\frac{Lz}{Ax} \cdot Ax$								
1	0.58	62.46	0.35	37.69	2354.32	0.35	37.69	0.50	53.85	2029.59	0.40	43.08	0.25	26.92	1159.76	0.30	32.31	0.35	37.69	1217.75
2	0.70	75.38	0.35	37.69	2841.42	0.35	37.69	0.50	53.85	2029.59	0.40	43.08	0.28	30.15	1298.93	0.50	53.85	0.35	37.69	2029.59
3	0.65	70.00	0.40	43.08	3015.38	0.50	53.85	0.50	53.85	2899.41	0.42	45.23	0.28	30.15	1363.88	0.50	53.85	0.30	32.31	1739.64
4	0.68	75.25	0.48	51.66	3785.47	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.55	59.72	3189.35
5	0.53	59.23	0.45	48.46	2870.41	0.30	32.31	0.45	48.46	1563.88	0.40	43.08	0.25	26.92	1159.76	0.30	32.31	0.35	37.69	1217.75
6	0.50	53.85	0.45	48.46	2609.47	0.30	32.31	0.55	59.23	1913.61	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
7	0.50	53.85	0.42	45.23	2435.50	0.30	32.31	0.50	53.85	1793.64	0.42	45.23	0.30	32.31	1461.30	0.40	43.08	0.40	43.08	1855.62
8	0.75	80.77	0.45	48.46	3914.20	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.45	48.46	2087.57
9	0.45	48.46	0.38	40.92	1988.19	0.38	40.92	0.50	53.85	2201.55	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.60	64.62	3131.36
10	0.40	43.08	0.40	43.08	1855.02	0.32	34.46	0.50	53.85	1855.02	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.45	48.46	2348.52
11	0.50	53.85	0.40	43.08	2319.53	0.55	59.23	0.55	59.23	3508.28	0.40	43.08	0.32	34.46	1484.50	0.50	53.85	0.35	37.69	2029.59
12	0.45	48.46	0.40	43.08	2087.57	0.30	32.31	0.50	53.85	1793.64	0.40	43.08	0.28	30.15	1298.93	0.45	48.46	0.50	53.85	2629.47
13	0.75	80.77	0.35	37.69	3044.38	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.28	30.15	1298.93	0.40	43.08	0.35	37.69	1623.67
14	0.57	61.38	0.29	31.23	1917.09	0.32	34.46	0.50	53.85	1855.02	0.42	45.23	0.25	26.92	1217.75	0.45	48.46	0.25	26.92	1504.75
15	0.45	48.46	0.62	66.77	3235.74	0.55	59.23	0.35	37.69	2232.34	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.50	53.85	2609.47
16	0.45	48.46	0.60	64.62	3131.36	0.35	37.69	0.35	37.69	1420.71	0.32	34.46	0.30	32.31	1113.37	0.45	48.46	0.30	32.31	1565.68
17	0.50	53.85	0.40	43.08	2319.53	0.60	64.62	0.42	45.23	2922.60	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.35	37.69	2029.59
18	0.52	54.00	0.50	53.85	3015.38	0.39	40.92	0.30	32.31	1321.13	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
19	0.52	56.00	0.45	48.46	2713.65	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.45	48.46	2609.47
20	0.68	73.23	0.35	37.69	2760.24	0.30	32.31	0.45	48.46	1563.68	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
21	0.50	53.85	0.35	37.69	2029.59	0.65	70.00	0.30	32.31	2261.54	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
22	0.45	48.46	0.38	40.92	1988.19	0.60	64.62	0.30	32.31	2087.57	0.30	32.31	0.25	26.92	869.82	0.50	53.85	0.40	43.08	2319.53
23	0.60	64.62	0.45	48.46	3131.36	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.28	30.15	1298.93	0.40	43.08	0.50	53.85	2319.53
24	0.63	67.85	0.49	52.77	3360.19	0.31	33.38	0.21	22.62	755.01	0.45	48.46	0.25	26.92	1304.73	0.45	48.46	0.60	64.62	3131.36
25	0.45	48.46	0.45	48.46	2348.52	0.70	75.38	0.40	43.08	3247.34	0.45	48.46	0.30	32.31	1363.98	0.35	37.69	0.40	43.08	1623.67
Suma	1484.00	1142.82	67282.50		1137.23		1150.15	51506.24	9.98	1074.77	7.12	766.77	32973.23		1206.15		1082.31	52131.35		
Promedio	59.36	45.70	591.33		45.49		46.01	5066.35	0.40	42.99	0.28	30.67	1032.34		48.25		43.29	2085.25		
D.E. (σ)	11.06		8.19		13.49			10.20	651.90	0.03	3.30	0.02	2.37	143.69		6.68		10.57	564.51	

Promedio del área de las células del haz: 259.130
 Promedio del área de las células del envés: 2606.25
 El promedio de las células del haz es:
 El promedio del largo de las células guardia es:
 El promedio del ancho de las células guardia es:
 El promedio del largo de las células subdiarias es:
 El promedio del ancho de las células subdiarias es:

131 veces el promedio de las células del envés.

140 veces el promedio del ancho.

1.11 veces el promedio del ancho.



Cuadro 12. Datos estadísticos de C12. *S. wardii* 'Dozen.'

C12. *S. wardii* 'Dozen' (Gmel) Pl#311095 2 Colombia, Venezuela y todo los países al norte incl. Guatemala (!), pero no en México.

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidarias (Subsidiary Cells)			
	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²	
	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	
1	0.95	102.31	0.50	53.85	5508.87	0.80	86.15	0.60	64.62	5566.86	0.30	32.31	
2	0.70	75.38	0.60	64.62	4871.01	0.60	64.62	0.50	53.85	3479.29	0.40	43.08	
3	0.65	70.00	0.60	64.62	4523.08	0.80	86.15	0.55	59.23	5102.96	0.40	43.08	
4	0.85	91.54	0.55	59.23	5421.89	0.90	96.92	0.55	59.23	5740.83	0.40	43.08	
5	0.95	102.31	0.50	53.85	5508.87	0.80	86.15	0.50	53.85	4639.05	0.35	37.69	
6	0.85	91.54	0.50	53.85	4928.99	0.70	75.38	0.40	43.08	3247.34	0.40	43.08	
7	0.65	70.00	0.50	53.85	3769.23	0.85	91.54	0.40	43.08	3943.19	0.45	48.46	
8	0.55	59.23	0.60	64.62	3827.22	0.60	64.62	0.50	53.85	3479.29	0.45	48.46	
9	0.70	75.38	0.60	64.62	4871.01	0.70	75.38	0.40	43.08	3247.34	0.40	43.08	
10	0.60	64.62	0.60	64.62	4175.15	0.70	75.38	0.55	37.69	2841.42	0.45	48.46	
11	0.50	53.85	0.55	59.23	3189.35	0.50	53.85	0.50	32.31	1759.64	0.40	43.08	
12	0.60	64.62	0.55	59.23	3827.22	0.90	96.92	0.45	48.46	4697.04	0.45	48.46	
13	0.60	64.62	0.55	59.23	3827.22	0.90	96.92	0.50	53.85	5218.93	0.40	43.08	
14	0.80	86.15	0.50	53.85	4639.05	0.60	64.62	0.35	37.69	2485.50	0.40	43.08	
15	0.80	86.15	0.65	70.00	6036.77	0.75	80.77	0.40	43.08	3479.29	0.35	37.69	
16	0.60	64.62	0.60	64.62	4175.15	0.90	96.92	0.50	53.85	5218.93	0.40	43.08	
17	0.65	70.00	0.60	64.62	4523.08	0.55	59.23	0.30	32.31	1913.61	0.45	48.46	
18	0.85	91.54	0.66	71.08	6506.27	0.65	70.00	0.40	43.08	3015.38	0.35	37.69	
19	0.70	75.38	0.65	70.00	5276.92	0.65	70.00	0.30	32.31	2261.54	0.35	37.69	
20	0.60	64.62	0.60	64.62	4175.15	0.60	64.62	0.35	37.69	2485.50	0.30	32.31	
21	0.50	53.85	0.50	53.85	2899.41	0.65	70.00	0.30	32.31	2261.54	0.35	37.69	
22	0.95	102.31	0.55	59.23	6059.76	0.50	53.85	0.35	37.69	2029.59	0.40	43.08	
23	0.90	96.92	0.56	60.31	5845.21	0.60	64.62	0.40	43.08	2783.43	0.30	32.31	
24	0.75	80.77	0.25	59.23	4784.02	0.90	96.92	0.40	43.08	4175.15	0.32	34.46	
25	0.30	92.31	0.55	59.23	1913.61	0.80	86.15	0.40	43.08	3711.34	0.35	37.69	
Suma	1890.00	1526.00	115077.50		1927.69				1125.38	89663.89	9.57	1030.62	
Promedio	75.60	61.04	4683.10		77.11				45.02	55.06	0.38	41.22	0.29
D.E. (σ)	17.55		5.39		1071.84		14.22		9.31	1217.37	0.05	5.25	0.03

Promedio del área de las células del haz: 4605.10

millas cuadradas

217.24 células/mm cuadrados

Promedio del área de las células del envéz: 3546.56

millas cuadradas

281.96 células/mm cuadrados

El promedio de las células del haz es:

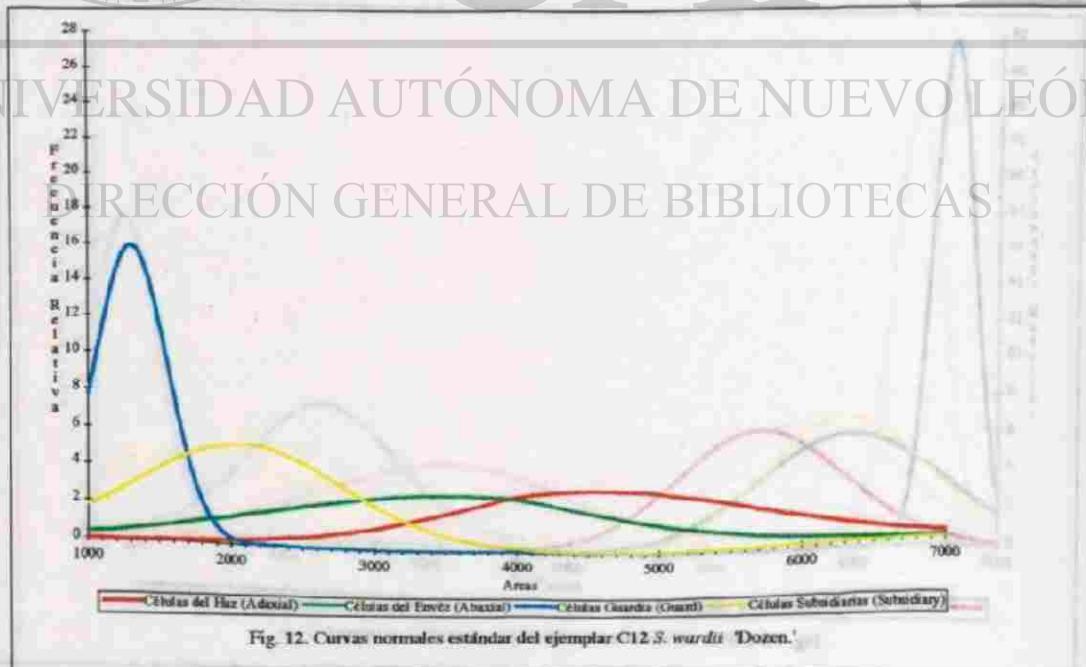
1.30 veces el promedio de las células del envéz.

El promedio del largo de las células guardia es:

1.31 veces el promedio del ancho.

El promedio del largo de las células subsidarias es:

1.47 veces el promedio del ancho.

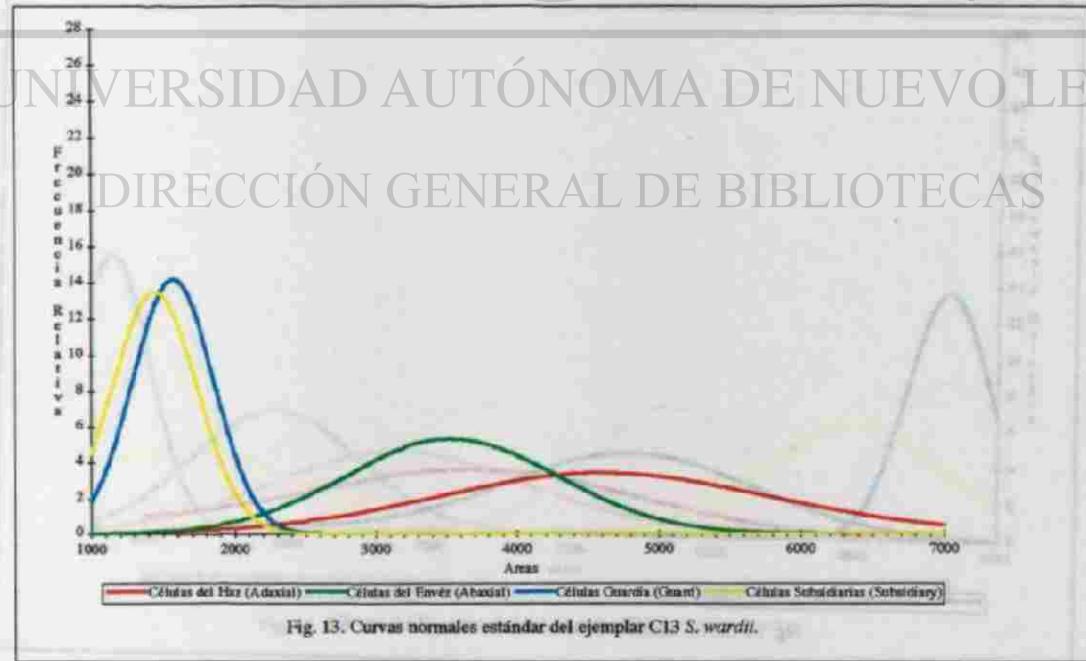


Cuadro 13. Datos estadísticos de C13 *S. wardii*.

#	Células del haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células guarda (Guard Cells)			Células subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área	Largo (L _e)	Ancho (A _e)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área								
	Indice	μ_{\pm}	μ_{\pm}	Indice	μ_{\pm}	μ_{\pm}	Indice	μ_{\pm}	μ_{\pm}	Indice	μ_{\pm}	μ_{\pm}								
1	1.00	107.69	0.55	59.23	6378.70	0.60	64.62	0.60	64.62	4175.15	0.55	59.23	0.35	37.69	2231.54	0.50	53.85	0.25	26.92	1449.70
2	0.70	75.38	0.55	59.23	4465.09	0.55	59.23	0.65	70.00	4146.15	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.25	26.92	1449.70
3	0.65	70.00	0.50	53.85	3769.23	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.25	26.92	1014.79
4	0.40	43.08	0.50	53.85	2319.58	0.75	80.77	0.55	59.23	4784.02	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.20	21.54	811.83
5	0.68	73.23	0.50	53.85	2943.19	0.55	59.23	0.55	59.23	3508.28	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
6	0.60	64.62	0.55	59.23	3827.22	0.50	53.85	0.55	59.23	3189.35	0.44	47.38	0.32	34.46	1632.95	0.45	48.46	0.30	32.31	1565.68
7	1.10	118.46	0.55	59.23	7016.57	0.50	53.85	0.50	53.85	2899.41	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.25	26.92	1304.73
8	0.72	77.54	0.55	59.23	4592.66	0.70	75.38	0.60	64.62	4871.01	0.50	53.85	0.30	32.31	1739.64	0.50	53.85	0.25	26.92	1449.70
9	0.60	64.62	0.55	59.23	3827.22	0.60	64.62	0.50	53.85	5479.29	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.25	26.92	1449.70
10	0.35	59.23	0.45	48.46	2870.41	0.68	73.23	0.50	53.85	3943.19	0.35	40.92	0.28	30.15	1233.99	0.45	48.46	0.25	26.92	1304.73
11	0.65	70.00	0.45	48.46	3392.31	0.65	70.00	0.60	64.62	4523.08	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.25	26.92	1304.73
12	0.60	64.62	0.65	70.00	4523.08	0.70	75.38	0.50	53.85	4059.17	0.38	40.92	0.30	32.31	1322.13	0.45	48.46	0.30	32.31	1565.68
13	0.64	68.92	0.60	64.62	4453.49	0.58	62.46	0.55	59.23	3469.64	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.30	32.31	1565.68
14	0.75	80.77	0.70	75.38	6088.76	0.45	48.46	0.50	53.85	2609.47	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
15	0.70	75.38	0.70	75.38	5682.84	0.70	73.38	0.45	48.46	3653.23	0.45	48.46	0.35	37.69	1826.63	0.50	53.85	0.35	37.69	2029.59
16	0.60	64.62	0.60	64.62	4175.15	0.65	70.00	0.50	53.85	3769.23	0.45	48.46	0.30	32.31	1565.68	0.30	32.31	0.25	26.92	869.82
17	0.85	91.54	0.60	64.62	5914.79	0.70	75.38	0.55	59.23	4465.09	0.50	53.85	0.35	37.69	2029.59	0.35	37.69	0.25	26.92	1014.79
18	1.00	107.69	0.60	64.62	6598.58	0.55	59.23	0.45	48.46	2870.41	0.38	40.92	0.30	32.31	1322.13	0.40	43.08	0.35	37.69	1623.67
19	0.80	86.15	0.45	48.46	4175.15	0.50	53.85	0.40	53.85	2519.53	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.35	37.69	1623.67
20	0.70	75.38	0.60	64.62	4871.01	0.60	64.62	0.50	53.85	3479.29	0.48	31.69	0.40	43.08	2226.75	0.35	37.69	0.30	32.31	1217.75
21	0.75	80.77	0.55	59.23	4784.02	0.70	75.38	0.35	37.69	2841.42	0.32	34.46	0.30	32.31	1113.37	0.40	43.08	0.35	37.69	1623.67
22	0.60	64.62	0.55	59.23	3827.22	0.60	64.62	0.40	43.08	2783.43	0.45	48.46	0.30	32.31	1565.68	0.40	43.08	0.35	37.69	1623.67
23	0.95	102.51	0.40	43.08	4407.10	0.60	64.62	0.40	43.08	2783.43	0.45	48.46	0.35	37.69	1826.63	0.40	43.08	0.35	37.69	1623.67
24	0.55	59.23	0.55	59.23	3508.28	0.60	64.62	0.40	43.08	2783.43	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.35	37.69	1826.63
25	0.80	86.15	0.55	59.23	3102.96	0.45	48.46	0.45	48.46	2348.32	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.30	32.31	1217.75
Suma	1932.00		1486.15	114874.54		1621.85		1356.92	88139.40	10.78	1160.92	7.80	840.00	39208.11		1152.31		780.77	36010.65	
Promedio	77.28		59.45	4592.66		64.87		54.28	283.51	0.43	46.44	0.31	33.60	3284.1		46.09		31.23	1440.49	
D.E. (en)	17.54		7.85	1194.49		8.97		8.36	758.40	0.05	5.21	0.03	2.88	2823.1		6.61		4.92	297.77	

Promedio del área de las células del haz: 4594.98
 Promedio del área de las células del envés: 3526.38
 El promedio de las células del haz es:
 El promedio del largo de las células guarda es:
 El promedio del largo de las células subsidiarias es:

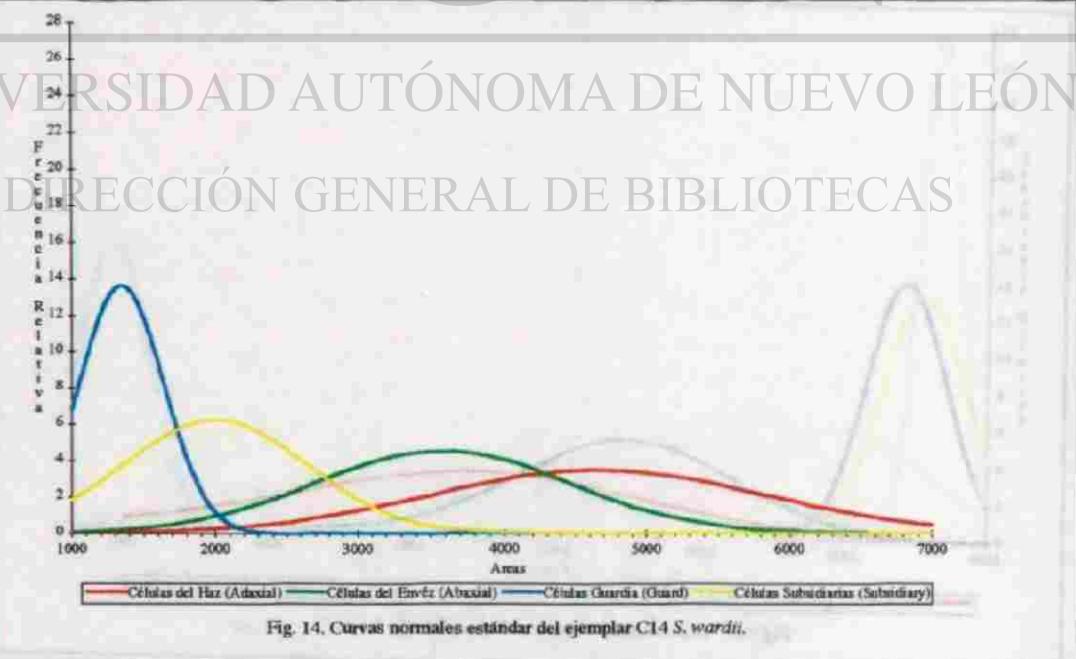
misma cuadradas
 misma cuadradas
 217.63 células/mm cuadrados
 283.58 células/mm cuadrados
 130 veces el promedio de las células del envés.
 138 veces el promedio del ancho.
 148 veces el promedio del ancho.



Cuadro 14. Datos estadísticos de C14. *S. wardii*.

C14. *S. wardii* PI020696-1 Colombia, Venezuela y los países al norte incl. Guatemala, pero no dentro de México

#	Células del haz (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²								
1	0.80	86.15	0.45	48.46	4175.15	0.75	80.77	0.70	75.38	6088.76	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.30	32.31	2087.57
2	0.70	75.38	0.70	75.38	5682.84	0.55	59.23	0.55	59.23	3508.28	0.32	34.46	0.30	32.31	1113.37	0.35	37.69	0.35	37.69	1420.71
3	0.70	75.38	0.65	70.00	5276.92	0.60	64.62	0.55	59.23	3827.22	0.32	34.46	0.30	32.31	1113.37	0.40	43.08	0.20	21.54	927.81
4	0.50	58.85	0.60	64.62	3479.29	0.50	53.85	0.55	59.23	3189.35	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.20	21.54	927.81
5	0.85	91.54	0.65	70.00	6407.69	0.65	70.00	0.50	53.85	3769.23	0.32	34.46	0.32	34.46	1187.60	0.55	59.23	0.30	32.31	1913.61
6	0.80	86.15	0.55	59.23	5102.96	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.40	43.08	1855.62	0.62	66.77	0.30	32.31	2157.16
7	0.80	86.15	0.55	59.23	5102.96	0.50	53.85	0.70	75.38	4059.17	0.40	43.08	0.38	40.92	1762.84	0.55	59.23	0.38	40.92	2423.90
8	0.55	59.23	0.55	59.23	3508.28	0.65	70.00	0.50	53.85	3769.23	0.40	43.08	0.40	43.08	1855.62	0.45	48.46	0.40	43.08	2087.57
9	0.68	75.38	0.60	66.77	4889.56	0.50	53.85	0.60	64.62	3479.29	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.35	37.69	1420.71
10	0.70	75.38	0.55	59.23	4465.09	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
11	0.65	70.00	0.62	66.77	4673.85	0.75	80.77	0.55	59.23	4784.02	0.38	46.92	0.38	40.92	1674.70	0.50	53.85	0.50	53.85	2899.41
12	0.70	75.38	0.65	70.00	5276.92	0.50	53.85	0.70	75.38	4059.17	0.38	46.92	0.32	34.46	1410.27	0.45	48.46	0.30	32.31	1565.68
13	0.55	59.23	0.65	70.00	4146.15	0.48	51.69	0.60	64.62	3340.12	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.40	43.08	2319.53
14	0.70	75.38	0.60	64.62	4871.01	0.50	53.85	0.58	62.46	3363.31	0.35	37.69	0.32	34.46	1298.93	0.60	64.62	0.42	45.23	2922.60
15	0.72	77.54	0.65	70.00	5427.69	0.55	59.23	0.60	64.62	3827.22	0.32	34.46	0.32	34.46	1187.60	0.45	48.46	0.30	32.31	1565.68
16	0.65	70.00	0.55	59.23	4146.15	0.48	51.69	0.49	48.46	2505.09	0.32	34.46	0.32	34.46	1187.60	0.55	59.23	0.55	59.23	3508.28
17	0.55	59.23	0.50	33.85	3189.35	0.52	56.00	0.60	64.62	3618.46	0.32	34.46	0.32	34.46	1187.60	0.32	34.46	0.30	32.31	1113.37
18	0.62	66.77	0.65	70.00	4673.85	0.48	51.69	0.50	53.85	2783.43	0.36	32.31	0.30	32.31	1043.79	0.40	43.08	0.40	43.08	1855.62
19	0.55	59.23	0.50	33.85	3189.35	0.60	64.62	0.65	70.00	4523.08	0.30	32.31	0.32	34.46	1113.37	0.45	48.46	0.45	48.46	2348.52
20	0.85	91.54	0.70	75.38	6900.59	0.58	62.46	0.58	42.46	3001.44	0.35	37.69	0.35	37.69	1420.71	0.42	45.23	0.35	37.69	1704.85
21	0.50	58.85	0.45	48.46	3609.47	0.65	70.00	0.60	64.62	4523.08	0.40	43.08	0.38	40.92	1762.84	0.50	53.85	0.45	48.46	2609.47
22	0.60	64.62	0.60	64.62	4175.15	0.50	53.85	0.60	64.62	3479.29	0.30	32.31	0.30	32.31	1043.79	0.55	59.23	0.40	43.08	2351.48
23	0.78	84.00	0.82	88.31	7417.85	0.55	59.23	0.40	43.08	2551.48	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.40	43.08	1855.62
24	0.70	75.38	0.50	53.85	4059.17	0.40	43.08	0.45	48.46	2087.57	0.32	34.46	0.32	34.46	1187.60	0.40	43.08	0.55	59.23	2551.48
25	0.70	75.38	0.45	48.46	3453.25	0.40	43.08	0.40	43.08	1855.62	0.36	32.31	0.30	32.31	1043.79	0.45	48.46	0.30	32.31	1565.68
D.E. (σ)	11.19	9.63	11.58	8.82		9.62		9.08	8.87	7.75	0.04	4.82	0.03	3.64	292.82		8.95		9.82	641.75
Suma	1820.00	1589.54	116500.53		1479.69		1498.00	80271.61	8.70	936.92	8.25	888.46	33598.34		1261.08		985.38	50043.78		
Promedio	72.90	63.58	4664.97		59.19		59.92	1.74	0.35	37.48	0.33	35.54	1.63	0.34	50.44		39.42	2001.75		



Cuadro 15. Datos estadísticos de C15. *S. nigroviolacea*.

C15 *S. nigroviolacea* (Mex.) PI#911095-4 Mexico (1)

#	Células del Ház (Axial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdiarias (Subsidiary Cells)										
	Largo (L) Índice	Ancho (A) Índice	Ara Índice	Largo (L) Índice	Ancho (A) Índice	Ara Índice	Largo (L) Índice	Ancho (A) Índice	Ara Índice	Largo (L) Índice	Ancho (A) Índice	Ara Índice								
	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]	[μm]								
1	0.70	75.38	0.42	45.23	3409.70	0.50	53.85	0.30	32.31	179.64	0.28	30.15	0.25	26.92	811.83	0.62	66.77	0.20	21.54	1488.11
2	0.65	70.00	0.38	40.92	2864.61	0.80	86.15	0.40	43.08	371.124	0.35	37.69	0.25	26.92	1014.79	0.55	59.23	0.20	21.54	1275.74
3	0.80	86.15	0.40	43.08	3711.34	0.40	43.08	0.40	43.08	1855.62	0.38	40.92	0.28	30.15	1233.99	0.58	62.46	0.30	32.31	2017.99
4	0.60	64.62	0.35	37.69	2435.50	0.50	53.85	0.35	37.69	2029.99	0.38	40.92	0.30	32.31	1322.13	0.30	32.31	0.20	21.54	695.86
5	0.80	86.15	0.32	34.46	2968.99	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
6	0.80	86.15	0.35	37.69	3247.34	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.32	34.46	2226.75
7	0.70	75.38	0.35	37.69	2841.42	0.50	53.85	0.25	26.92	1449.70	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.20	21.54	1043.79
8	0.90	96.92	0.35	37.69	3653.25	0.55	59.25	0.30	32.31	1913.61	0.35	37.69	0.25	26.92	1014.79	0.50	53.85	0.31	33.38	1797.63
9	0.70	75.38	0.30	32.31	2435.50	0.50	53.85	0.35	37.69	2029.99	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.35	37.69	2638.46
10	0.55	59.23	0.30	32.31	1913.61	0.45	48.46	0.40	43.08	2087.37	0.35	37.69	0.28	30.15	1136.57	0.60	64.62	0.20	21.54	1391.72
11	0.65	70.00	0.30	32.31	2261.54	0.50	53.85	0.40	43.08	2319.53	0.38	40.92	0.28	30.15	1233.99	0.60	64.62	0.20	21.54	1391.72
12	0.70	75.38	0.42	45.23	3409.70	0.70	75.38	0.40	43.08	3247.34	0.35	37.69	0.25	26.92	1014.79	0.55	59.23	0.60	64.62	3827.22
13	1.00	107.69	0.37	34.46	3711.34	0.60	64.62	0.45	48.46	3131.36	0.35	37.69	0.25	26.92	1014.79	0.60	64.62	0.15	16.15	1043.79
14	0.70	75.38	0.30	32.31	2435.50	0.52	56.00	0.35	37.69	2110.77	0.35	37.69	0.22	23.69	893.02	0.50	53.85	0.60	64.62	3479.29
15	0.70	75.38	0.25	26.92	2029.99	0.40	43.08	0.40	43.08	1855.62	0.38	40.92	0.28	30.15	1233.99	0.60	64.62	0.45	48.46	3131.36
16	0.70	75.38	0.35	37.69	2841.42	0.55	59.23	0.35	37.69	2232.54	0.35	37.69	0.30	32.31	1217.75	0.52	56.00	0.28	30.15	1688.62
17	0.70	75.38	0.30	32.31	2435.50	0.40	43.08	0.40	43.08	1855.62	0.30	32.31	0.20	21.54	695.86	0.50	53.85	0.25	26.92	1449.70
18	0.75	80.77	0.30	32.31	2609.47	0.55	59.25	0.30	32.31	1913.61	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.20	21.54	1043.79
19	0.65	70.00	0.35	37.69	2638.46	0.48	51.69	0.35	37.69	1948.40	0.30	32.31	0.25	26.92	869.82	0.40	45.08	0.40	43.08	1833.62
20	0.70	75.38	0.35	37.69	2841.42	0.60	64.62	0.40	43.08	2793.43	0.30	32.31	0.25	26.92	869.82	0.35	37.69	0.21	22.62	852.43
21	1.05	113.08	0.40	43.08	4871.01	0.70	75.38	0.40	43.08	3247.34	0.32	34.46	0.28	30.15	1089.15	0.60	64.62	0.10	10.77	695.86
22	0.80	86.15	0.30	32.31	2783.43	0.45	48.46	0.35	37.69	1826.63	0.32	34.46	0.25	26.92	927.81	0.50	53.85	0.15	16.15	869.82
23	0.90	96.92	0.40	43.08	4175.15	0.50	53.85	0.40	43.08	2319.53	0.30	32.31	0.25	26.92	869.82	0.50	53.85	0.10	10.77	579.88
24	0.90	96.92	0.38	40.92	3966.39	0.52	56.00	0.35	37.69	2110.77	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.10	10.77	579.88
25	1.10	118.46	0.45	48.46	5740.83	0.65	70.00	0.42	45.23	3166.15	0.40	43.08	0.40	43.08	1855.62	0.65	70.00	0.25	26.92	1884.62
Media	2067.69	935.85	7823.82		1412.92		998.31	56596.44	8.84	952.00	6.87	739.85	28446.67		1418.31		702.15	40059.38		
Promedio	82.71	37.43	91.79.27		56.52		39.93	2764.86	0.35	38.08	0.27	29.59	258.44		56.78		28.09	1602.38		
D.E. (σ)	14.90		5.31		892.58		11.23		4.99	590.48	0.04	4.11	0.04	258.48		9.60		14.51	886.17	

Promedio del área de las células del haz:

5129.27 μm cuadrados

319.56 células/mm cuadrados

Promedio del área de las células del envés:

2263.86 μm cuadrados

441.72 células/mm cuadrados

El promedio de las células del haz es:

1.38 veces el promedio de las células del envés.

El promedio de las células guarda es:

1.29 veces el promedio del ancho.

El promedio de las células subdiarias es:

1.02 veces el promedio del ancho.



Cuadro 16. Datos estadísticos de C16 S. insignis.

#	C16 S. insignis (Brit) Pl#290496-8 Brasil (I), Colombia, Ecuador, Las Guayanas, Perú, Venezuela																			
	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (Lh) Índice	Ancho (Ah) Índice	Área μm²	Largo (Lc) Índice	Ancho (Ac) Índice	Área μm²	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm²	Largo (La) Índice	Ancho (Aa) Índice	Área μm²								
1	0.80	86.15	0.45	48.46	4175.15	0.48	51.69	0.50	53.85	2783.43	0.40	43.08	0.20	21.54	927.81	0.45	48.46	0.45	48.46	2348.52
2	0.72	77.54	0.60	64.62	5010.18	0.70	75.38	0.52	56.00	4221.54	0.40	43.08	0.15	16.15	695.86	0.45	48.46	0.30	32.31	1565.68
3	1.00	107.69	0.80	86.15	9278.11	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.35	37.69	1623.67
4	0.70	75.38	0.50	53.85	4059.17	0.60	64.62	0.45	48.46	3131.36	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.50	53.85	2319.53
5	0.70	75.38	0.50	53.85	4059.17	0.68	73.23	0.40	43.08	3154.56	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.20	21.54	1043.79
6	0.82	88.31	0.48	51.69	4564.83	0.60	64.62	0.50	53.85	3479.29	0.40	43.08	0.20	21.54	927.81	0.40	43.08	0.50	53.85	2319.53
7	0.65	70.00	0.48	51.69	3418.46	0.62	66.77	0.40	43.08	2876.21	0.45	48.46	0.40	43.08	2087.57	0.45	48.46	0.50	53.85	2609.47
8	0.70	75.38	0.50	53.85	4059.17	0.85	91.54	0.40	43.08	3943.19	0.40	43.08	0.40	43.08	1855.62	0.45	48.46	0.50	53.85	2609.47
9	0.60	64.62	0.50	53.85	3479.29	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.65	70.00	3392.31
10	0.85	91.54	0.55	59.23	5421.89	0.55	59.23	0.50	53.85	3189.35	0.45	48.46	0.32	34.46	1670.06	0.35	37.69	0.45	48.46	1826.63
11	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.45	48.46	3131.36	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.35	37.69	1826.63
12	0.92	99.08	0.45	48.46	4801.42	0.75	80.77	0.52	56.00	4523.08	0.45	48.46	0.28	30.15	1461.30	0.45	48.46	0.20	21.54	1043.79
13	0.70	75.38	0.50	53.85	4059.17	0.70	75.38	0.40	43.08	3247.34	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.40	43.08	2319.53
14	0.65	70.00	0.50	53.85	3789.29	0.58	62.46	0.40	43.08	2690.65	0.30	32.31	0.20	21.54	695.86	0.40	43.08	0.45	48.46	2087.57
15	0.70	75.38	0.50	53.85	4059.17	0.45	48.46	0.50	53.85	2609.47	0.30	32.31	0.20	21.54	695.86	0.42	43.23	0.40	43.08	1948.40
16	0.68	73.23	0.55	59.23	4337.51	0.55	59.23	0.45	48.46	2870.41	0.40	43.08	0.30	32.31	1391.72	0.70	75.38	0.50	53.85	4059.17
17	1.00	107.69	0.58	62.46	6726.63	0.68	73.23	0.40	43.08	3154.56	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
18	0.80	86.15	0.55	59.23	5102.96	0.62	66.77	0.60	64.62	4314.32	0.35	37.69	0.25	26.92	1014.79	0.45	48.46	0.25	26.92	1304.73
19	0.58	62.46	0.60	64.62	4035.98	0.52	56.00	0.52	56.00	3136.00	0.35	37.69	0.30	32.31	1217.75	0.55	39.23	0.45	48.46	2870.41
20	0.92	99.08	0.58	62.46	6188.50	0.45	48.46	0.45	48.46	3248.52	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.40	43.08	2087.57
21	0.70	75.38	0.62	66.77	5083.37	0.50	53.85	0.55	59.23	3189.35	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.45	48.46	2087.57
22	0.82	88.31	0.52	56.00	4945.23	0.62	66.77	0.42	45.23	3020.02	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.45	48.46	2609.47
23	0.90	96.93	0.45	48.46	4697.04	0.70	75.38	0.42	45.23	3409.70	0.35	37.69	0.25	26.92	1014.79	0.40	43.08	0.20	21.54	927.81
24	0.70	75.38	0.55	59.23	4465.09	0.50	53.85	0.45	48.46	2609.47	0.30	32.31	0.15	16.15	521.89	0.40	43.08	0.20	21.54	927.81
25	0.75	80.77	0.60	64.62	5218.98	0.50	53.85	0.50	53.85	2899.41	0.25	26.92	0.20	21.54	579.88	0.45	48.46	0.30	32.31	1365.68
Total	2058.00	1444.15	119314.75		1610.00		1270.77	8129.98	9.75	1050.00	6.95	748.46	32183.43		1213.69		1033.85	50484.48		
Promedio	82.35	57.77	4796.98		64.40		50.83	5.39	42.00	0.28	29.94		34.46		48.55		41.35	2019.58		
D.E. (e)	12.43	8.01	1207.17		10.60		6.57	570.29	0.06	6.22	0.07	7.65	-460.87		7.24		13.35	774.35		

Promedio del área de las células del haz: 4780.59
 Promedio del área de las células del envéz: 3251.88
 El promedio de las células del haz es:

El promedio de las células garcia es:

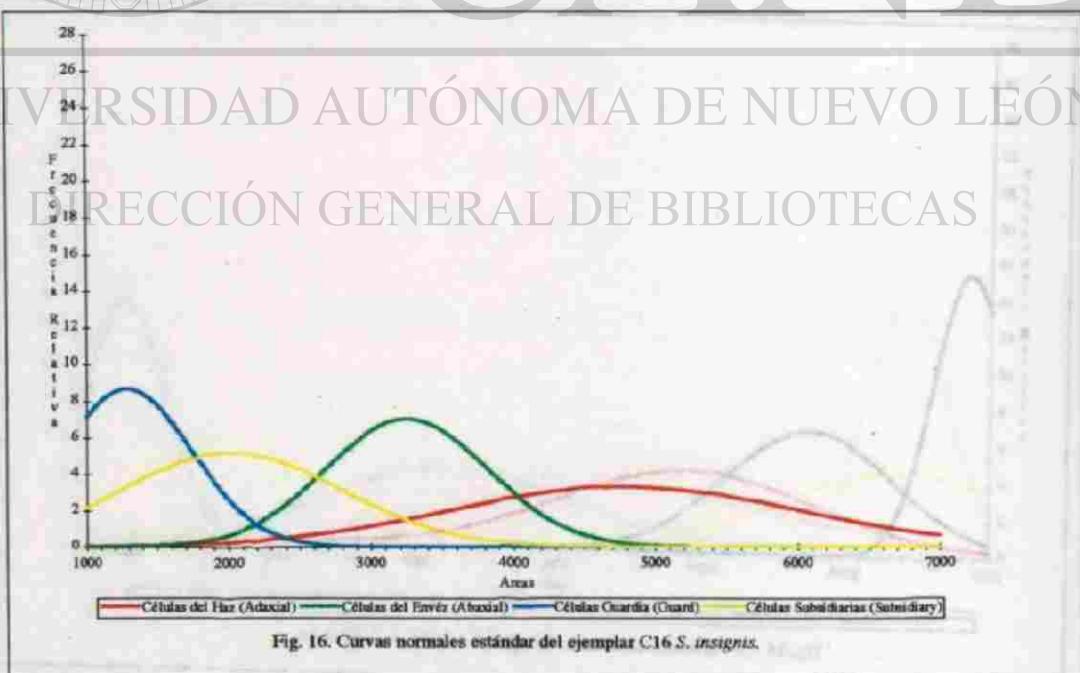
El promedio de las células subsidiarias es:

micras cuadradas
 micras cuadradas
 307.51 células/mm cuadrados

1.47 veces el promedio de las células del envéz.

1.40 veces el promedio del ancho.

1.17 veces el promedio del ancho.



Cuadro 17. Datos estadísticos de C17 S. costaricensis.

C17 S. costaricensis (CRaf) PI#200696-1 Costa Rica (1)

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidary Cells)										
	Largo (L _a)	Ancho (A _a)	Área	Largo (L _b)	Ancho (A _b)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área								
	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice								
1	0.62	66.77	0.50	53.85	3395.27	0.50	53.85	0.50	33.85	2899.41	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.20	21.54	1043.79
2	0.60	64.62	0.50	53.85	3479.29	0.35	37.69	0.40	43.08	1623.67	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.20	21.54	927.81
3	0.72	77.54	0.50	53.85	4175.15	0.55	59.23	0.60	64.62	3827.22	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.50	53.85	2609.47
4	0.74	79.69	0.50	53.85	4291.12	0.55	59.23	0.45	48.46	2870.41	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.40	43.08	2319.53
5	0.65	70.00	0.55	59.23	4146.15	0.65	70.00	0.50	53.85	3769.23	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.50	53.85	2319.53
6	0.67	72.15	0.52	56.00	4040.61	0.35	37.69	0.40	43.08	1623.67	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
7	0.60	64.62	0.52	56.00	3618.46	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.40	43.08	2087.57
8	0.66	71.08	0.50	53.85	3827.22	0.45	48.46	0.45	48.46	2348.52	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.25	26.92	1159.76
9	0.72	77.54	0.50	53.85	4175.15	0.60	64.62	0.45	48.46	3131.36	0.35	37.69	0.35	37.69	1420.71	0.50	53.85	0.45	48.46	2609.47
10	0.69	74.31	0.50	53.85	4001.18	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.30	32.31	2087.57
11	0.63	67.85	0.48	51.69	3307.12	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.36	38.34	1857.94
12	0.70	75.38	0.50	53.85	4059.17	0.50	53.85	0.45	48.46	2609.47	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.35	37.69	1826.63
13	0.69	74.31	0.50	59.23	4401.30	0.50	53.85	0.40	43.08	2319.53	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.50	53.85	2319.53
14	0.72	77.54	0.45	48.46	3757.63	0.70	75.38	0.40	43.08	3247.34	0.35	37.69	0.35	37.69	1420.71	0.50	53.85	0.45	48.46	2609.47
15	0.61	63.69	0.45	48.46	3183.55	0.60	64.62	0.40	43.08	2783.43	0.40	43.08	0.40	43.08	1855.62	0.60	64.62	0.30	33.85	3479.29
16	0.61	65.69	0.36	38.77	2546.84	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.45	48.46	2087.57	0.60	64.62	0.15	16.15	1043.79
17	0.71	76.46	0.48	51.69	3952.47	0.55	59.23	0.50	53.85	3189.35	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.30	32.31	2087.57
18	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.40	43.08	2783.43	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
19	0.64	68.97	0.55	59.23	4082.37	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
20	0.55	59.23	0.43	46.31	2742.84	0.35	37.69	0.50	53.85	2029.39	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.35	37.69	232.54
21	0.70	75.38	0.43	46.31	3496.88	0.60	64.62	0.50	53.85	3479.29	0.35	37.69	0.30	32.31	1217.75	0.60	64.62	0.35	37.69	2435.50
22	0.72	77.54	0.41	44.15	3423.62	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
23	0.67	72.15	0.42	45.23	3263.57	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.35	37.69	1623.67	0.55	59.23	0.35	37.69	232.54
24	0.78	78.62	0.48	51.69	4063.81	0.50	53.85	0.50	53.85	2899.41	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.35	37.69	2455.50
25	0.55	57.98	0.40	43.08	2458.70	0.40	43.08	0.50	53.85	2319.53	0.25	26.92	0.25	26.92	734.83	0.45	48.46	0.35	37.69	1826.63
Suma	1790.92	1290.15	92632.60		1305.38		1238.46	66222.48	9.45	1017.69	8.10	872.31	35691.71		1324.62	942.95	49990.12			
Promedio	71.64	51.61	37.55		55.42		49.54	49.54	0.38	40.71	0.32	34.89	34.89		52.98	37.72	1997.20			
D.E. (e)	6.41	5.28	543.05		10.93		5.82	610.02	0.04	4.68	0.04	4.43	277.13		8.18	10.77	626.00			

Promedio del área de las células del haz: 3705.30

Promedio del área de las células del envéz: 2648.90

El promedio de las células del haz es:

El promedio de las células guardia es:

El promedio de las células subadiarias es:

miáreas cuadradas

miáreas cuadradas

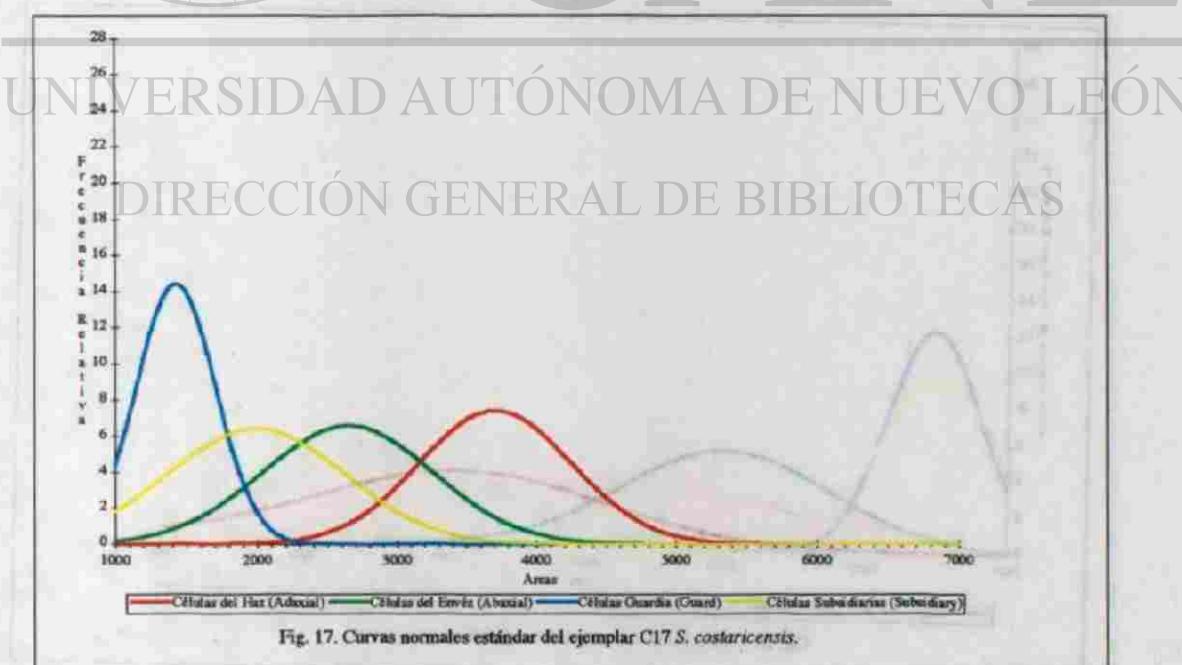
269.88 células/mm cuadrados

377.52 células/mm cuadrados

140 veces el promedio de las células del envéz.

117 veces el promedio del ancho.

140 veces el promedio del ancho.



Cuadro 18. Datos estadísticos de C18 S. pozoi.

C18 S. pozoi (Col) PI#200694-2 Colombia (!), Perú																				
#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdiarias (Subsidary Cells)										
	Largo (Lx)	Ancho (Ax)	Área [μm ²]	Largo (Lx)	Ancho (Ax)	Área [μm ²]	Largo (Lx)	Ancho (Ax)	Área [μm ²]	Largo (Lx)	Ancho (Ax)	Área [μm ²]								
	Índice	[μ]	[μm]	Índice	[μ]	[μm]	Índice	[μ]	[μm]	Índice	[μ]	[μm]								
1	0.78	84.00	0.66	71.08	5970.46	0.58	62.46	0.60	64.62	4035.98	0.50	53.85	0.35	37.69	2029.59	0.42	45.23	0.30	32.31	1461.30
2	1.00	107.69	0.60	64.62	6958.38	0.50	53.85	0.49	48.46	2609.47	0.45	48.46	0.28	30.15	1461.30	0.48	51.69	0.24	25.85	1336.05
3	0.92	99.08	0.58	62.46	6188.50	0.50	53.85	0.50	53.85	2899.41	0.50	53.85	0.35	37.69	2029.59	0.40	43.08	0.30	32.31	1291.72
4	0.72	77.54	0.52	56.00	4342.15	0.55	59.20	0.60	64.62	3827.22	0.48	51.69	0.28	30.15	1558.72	0.46	49.54	0.25	26.92	1333.73
5	0.68	73.23	0.45	48.46	3548.88	0.45	48.46	0.68	73.23	3548.88	0.35	37.69	0.25	26.92	1014.79	0.44	47.38	0.30	32.31	1550.89
6	0.80	86.15	0.45	48.46	4175.15	0.60	64.62	0.40	43.08	2785.43	0.45	48.46	0.30	32.31	1565.68	0.40	43.08	0.28	30.15	1298.93
7	0.85	91.54	0.60	64.62	3914.79	0.55	59.20	0.38	40.92	2423.90	0.50	53.85	0.33	37.69	2029.59	0.46	49.54	0.42	45.23	2240.66
8	0.60	54.62	0.60	64.62	4175.15	0.40	43.08	0.40	43.08	1855.62	0.45	48.46	0.30	32.31	1565.68	0.40	43.08	0.26	21.54	927.81
9	0.60	64.62	0.60	64.62	4175.15	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.28	30.15	1298.93
10	0.65	70.00	0.65	70.00	4900.00	0.45	48.46	0.45	48.46	2348.52	0.40	43.08	0.30	32.31	1391.72	0.46	49.54	0.24	25.85	1280.38
11	0.60	64.62	0.70	75.38	4871.01	0.78	84.00	0.50	32.31	2713.85	0.50	53.85	0.30	32.31	1739.64	0.40	43.08	0.22	23.69	1020.59
12	0.60	64.62	0.70	75.38	4871.01	0.55	59.20	0.45	48.46	2870.41	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.25	26.92	1304.73
13	0.65	70.00	0.60	64.62	4523.08	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.43	46.31	0.29	31.25	1446.22
14	0.60	64.62	0.60	64.62	4175.15	0.50	53.85	0.60	64.62	3479.29	0.40	43.08	0.25	26.92	1159.76	0.45	48.46	0.20	21.54	1043.79
15	0.85	91.54	0.75	80.77	7393.49	0.68	73.23	0.50	53.85	3943.19	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.31	33.38	1797.63
16	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.45	48.46	2087.57	0.40	43.08	0.28	30.15	1298.93	0.51	54.92	0.36	38.77	2129.33
17	0.80	86.15	0.65	70.00	6090.77	0.35	57.69	0.45	48.46	1806.63	0.42	45.23	0.30	32.31	1461.30	0.50	53.85	0.19	20.46	1101.77
18	0.62	66.77	0.60	64.62	4314.32	0.80	86.15	0.50	33.85	4639.05	0.45	48.46	0.30	32.31	1565.68	0.45	48.46	0.38	40.92	1983.19
19	0.75	80.77	0.60	64.62	5218.93	0.75	80.77	0.40	43.08	3479.29	0.55	59.23	0.30	32.31	1913.61	0.50	53.85	0.20	21.54	1159.76
20	0.70	75.38	0.55	59.23	4465.09	0.75	80.77	0.30	32.31	2609.47	0.50	53.85	0.40	43.08	2319.33	0.52	56.00	0.39	42.00	2352.00
21	0.55	59.23	0.55	59.23	3508.28	0.80	86.15	0.30	32.31	2785.43	0.40	43.08	0.25	26.92	1159.76	0.42	45.23	0.28	30.15	1363.88
22	0.70	75.38	0.58	62.46	4708.64	0.50	53.85	0.45	48.46	2609.47	0.40	43.08	0.25	26.92	1159.76	0.60	64.62	0.20	21.54	1391.72
23	0.70	75.38	0.62	64.62	5013.37	0.55	59.23	0.50	53.85	3189.35	0.42	45.23	0.30	32.31	1461.30	0.52	36.00	0.18	19.38	1083.54
24	0.70	75.38	0.60	64.62	4871.01	0.70	75.38	0.50	53.85	4059.17	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.36	38.77	2004.07
25	0.65	70.00	0.50	53.85	3769.23	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30	32.31	1391.72	0.58	62.46	0.30	32.31	2017.99
Suma	1902.92			1605.69	12227.31		1528.15		1344.92	74798.92	10.92	1176.00	7.44	801.23	38004.28		1252.46		745.23	37302.62
Promedio	76.12			64.23	6991.99		61.13		49.80	236.67	0.44	47.04	0.30	32.05	1525.77		50.10		29.81	1492.10
D.E. (σ)	12.21			7.56	1007.89		14.25		10.23	737.80	0.05	5.31	0.04	3.87	326.69		5.87		7.26	407.94

Promedio del área de las células del haz: 4891.09
 Promedio del área de las células del envéz: 2991.96
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subdiarias es:

104.45 células/mm cuadrados
 334.23 células/mm cuadrados
 1.63 veces el promedio de las células del envéz.
 1.47 veces el promedio del ancho.
 1.68 veces el promedio del ancho.

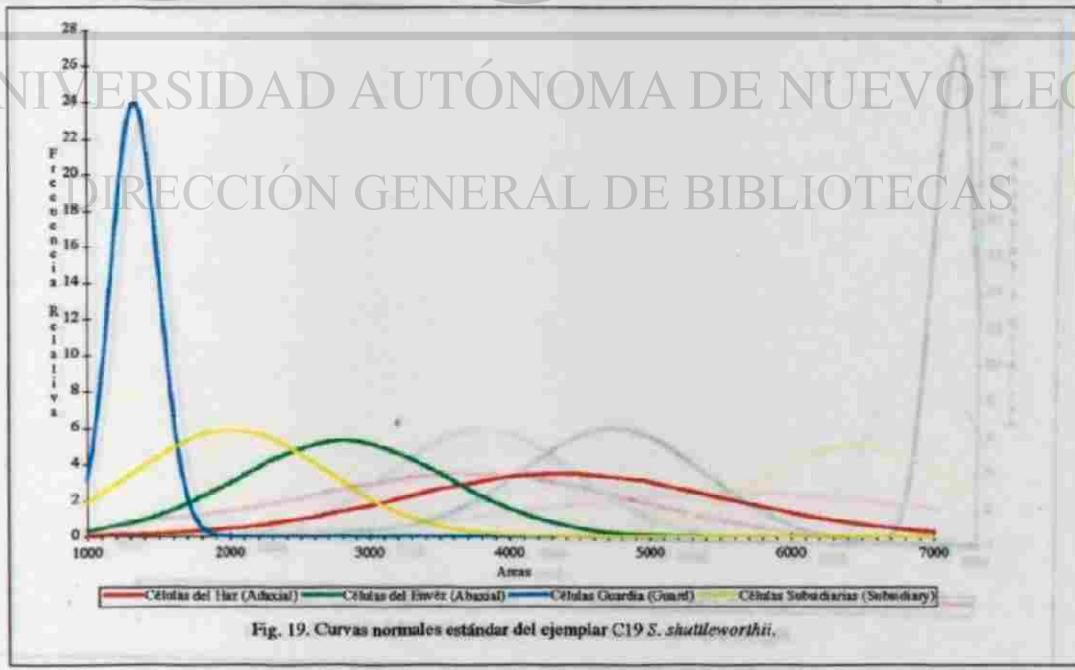


Cuadro 19. Datos estadísticos de C19 *S. shuttleworthii*.

C19 <i>S. shuttleworthii</i> (Coll.: Pla#00695-3 Colombia (1))																				
#	Células del Ház (Axial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _b)	Ara	Largo (L _c)	Ancho (A _d)	Ara	Largo (L _e)	Ancho (A _f)	Ara	Largo (L _g)	Ancho (A _h)	Ara								
	Indice	μ_m	μ_d	Indice	μ_m	μ_d	Indice	μ_m	μ_d	Indice	μ_m	μ_d								
1	0.95	102.31	0.50	53.85	5508.87	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.50	53.85	2899.41
2	0.90	96.92	0.50	53.85	5218.93	0.60	64.62	0.50	53.85	3479.29	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.30	32.31	1739.64
3	0.60	64.62	0.60	64.62	4175.15	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
4	0.75	80.77	0.50	53.85	4349.11	0.55	59.23	0.45	48.46	2870.41	0.35	37.69	0.32	34.46	1298.93	0.40	43.08	0.20	21.54	927.81
5	0.90	96.92	0.50	53.85	5218.93	0.55	59.23	0.45	48.46	2870.41	0.35	37.69	0.32	34.46	1298.93	0.45	48.46	0.50	53.85	2609.47
6	0.90	96.92	0.48	51.69	5010.18	0.70	75.38	0.60	64.62	4871.01	0.35	37.69	0.28	30.15	1136.57	0.45	48.46	0.50	53.85	2609.47
7	0.90	96.92	0.55	59.23	5740.83	0.45	48.46	0.40	43.08	2087.57	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.25	26.92	1449.70
8	0.58	62.46	0.45	48.46	3026.98	0.55	59.23	0.50	53.85	3189.35	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.20	21.54	1159.76
9	1.00	107.69	0.60	64.62	6958.58	0.40	43.08	0.45	48.46	2087.57	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.50	53.85	2609.47
10	0.75	80.77	0.40	43.08	3479.29	0.40	43.08	0.42	45.23	1948.40	0.35	37.69	0.28	30.15	1136.57	0.40	43.08	0.40	43.08	1855.62
11	1.00	107.69	0.40	43.08	4439.05	0.50	53.85	0.40	43.08	2919.53	0.38	40.92	0.25	26.92	1101.77	0.50	53.85	0.30	32.31	1739.64
12	0.80	86.15	0.45	48.46	4175.15	0.60	64.62	0.50	53.85	3479.29	0.35	37.69	0.35	37.69	1420.71	0.50	53.85	0.30	32.31	1739.64
13	0.90	96.92	0.50	53.85	5218.93	0.50	53.85	0.48	51.69	2783.43	0.35	37.69	0.35	37.69	1420.71	0.45	48.46	0.55	59.23	2807.41
14	0.70	75.38	0.45	48.46	3653.23	0.63	70.00	0.60	64.62	4323.08	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
15	0.80	86.15	0.40	43.08	3711.24	0.58	53.85	0.40	43.08	2319.53	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.20	21.54	1159.76
16	0.90	96.92	0.40	43.08	4175.15	0.50	53.85	0.40	43.08	2319.53	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.30	32.31	1913.61
17	0.80	86.15	0.40	43.08	3711.24	0.60	64.62	0.52	56.00	3618.46	0.40	43.08	0.35	37.69	1623.67	0.55	59.23	0.32	34.46	2041.18
18	0.75	80.77	0.40	43.08	3479.29	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.40	43.08	2783.48
19	0.70	75.38	0.50	64.62	4871.01	0.52	56.00	0.50	53.85	3015.38	0.35	37.69	0.30	32.31	1217.75	0.60	64.62	0.35	37.69	2435.50
20	0.80	86.15	0.75	80.77	6958.58	0.45	48.46	0.45	48.46	2348.52	0.35	37.69	0.35	37.69	1420.71	0.35	37.69	0.25	26.92	1014.79
21	0.65	70.00	0.40	43.08	3015.38	0.45	48.46	0.45	48.46	2348.52	0.35	37.69	0.35	37.69	1420.71	0.45	48.46	0.45	48.46	2348.52
22	0.70	75.38	0.40	43.08	3247.34	0.50	53.85	0.40	43.08	2319.53	0.38	40.92	0.25	26.92	1101.77	0.45	48.46	0.40	43.08	2087.57
23	0.70	75.38	0.35	37.69	2841.42	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.42	45.23	3166.15
24	0.55	59.23	0.45	48.46	2870.41	0.43	48.46	0.40	43.08	2087.57	0.40	43.08	0.28	30.15	1298.93	0.70	75.38	0.35	37.69	2841.42
25	0.80	86.15	0.45	48.46	4175.15	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.25	26.92	1449.70
Suma	2130.15	1279.36	109429.45		1402.15		1235.23	70223.66	9.31	1002.62	7.73	832.46	33466.39		1335.38		941.23	50409.11		
Promedio	85.21	51.18	8377.18		56.09		49.41	2888.07	0.37	40.10	0.31	33.30	32.31		53.42		37.65	2016.36		
D.E. (t)	13.58	9.71	1156.08		7.91		6.49	756.67	0.02	2.62	0.03	3.64	166.64		8.64		11.70	683.02		

Promedio del área de las células del haz: 4377.18
 Promedio del área de las células del envés: 2888.05
 El promedio de las células del haz es:
 El promedio de las células guarda es:
 El promedio de las células subsidiarias es:

mañas cuadradas
 mañas cuadradas
 1.56 veces el promedio de las células del envés.
 1.20 veces el promedio del ancho.
 1.42 veces el promedio del ancho.



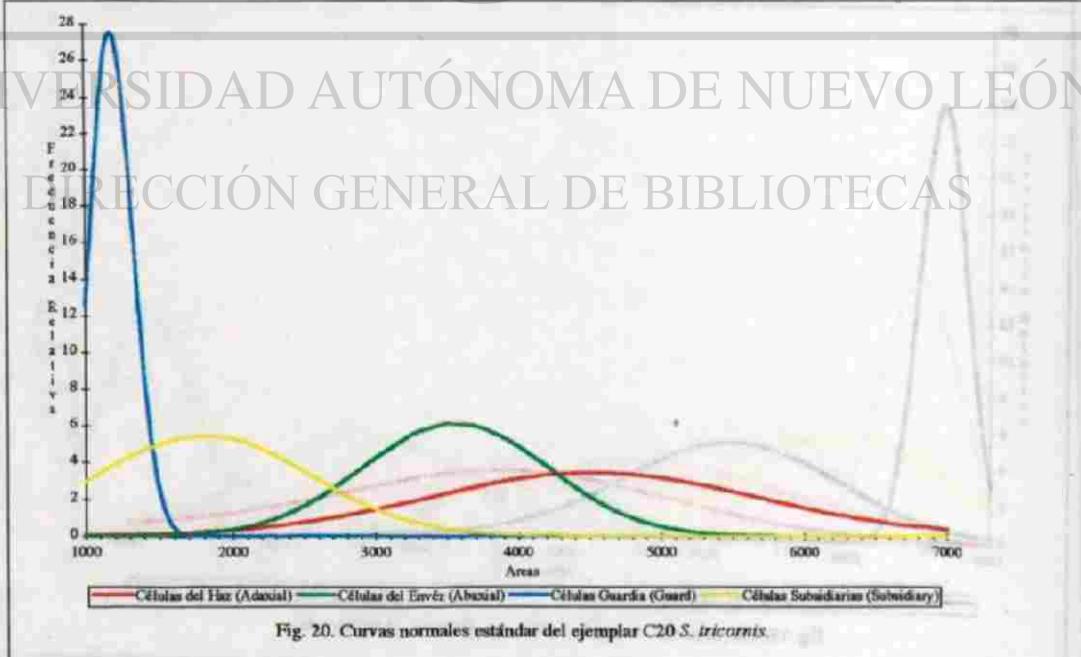
Cuadro 20. Datos estadísticos de C20. *S. tricornis*.

C20. *S. tricornis* (Cell). PH251195-2 Coleosbia (I). Ecuador. Perí.

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a) Indice μ _m	Ancho (A _a) Indice μ _m	Área μ _m ²	Largo (L _e) Indice μ _m	Ancho (A _e) Indice μ _m	Área μ _m ²	Largo (L _g) Indice μ _m	Ancho (A _g) Indice μ _m	Área μ _m ²	Largo (L _s) Indice μ _m	Ancho (A _s) Indice μ _m	Área μ _m ²								
1	0.70	75.38	0.70	75.38	5682.84	0.60	64.62	0.40	43.08	2783.43	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.45	48.46	2087.57
2	0.80	86.15	0.70	75.38	6494.67	0.62	66.77	0.40	43.08	2876.21	0.30	32.31	0.30	32.31	1043.79	0.30	32.31	0.75	86.77	2609.47
3	0.65	70.00	0.60	64.62	4523.08	0.80	86.15	0.40	43.08	3711.24	0.30	32.31	0.30	32.31	1043.79	0.55	59.23	0.55	59.23	3508.28
4	0.65	70.00	0.60	64.62	4523.08	0.75	80.77	0.42	45.23	3653.25	0.30	32.31	0.30	32.31	1043.79	0.45	48.46	0.55	59.23	2870.41
5	0.75	80.77	0.65	70.00	5653.85	0.74	79.69	0.42	45.23	3604.54	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.30	32.31	1391.77
6	0.60	64.62	0.55	59.23	3827.22	0.62	66.77	0.50	54.85	3393.27	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.20	21.54	1159.76
7	0.60	64.62	0.60	64.62	4175.15	0.75	70.77	0.45	48.46	3914.20	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.25	26.92	1449.70
8	0.60	64.62	0.50	53.85	3479.29	0.68	73.23	0.45	48.46	3548.88	0.30	32.31	0.30	32.31	1043.79	0.45	48.46	0.45	48.46	2348.52
9	0.55	59.23	0.55	59.23	3508.28	0.72	77.54	0.49	52.77	4091.64	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.45	48.46	2087.57
10	0.70	75.38	0.60	64.62	4871.01	0.54	58.15	0.40	43.08	2505.09	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.20	21.54	927.81
11	0.80	86.15	0.60	64.62	5566.86	0.65	70.00	0.45	48.46	3392.31	0.35	37.69	0.35	37.69	1420.71	0.45	48.46	0.25	26.92	1304.73
12	0.90	96.92	0.75	80.77	7828.40	0.63	70.00	0.55	59.23	4146.15	0.35	37.69	0.35	37.69	1420.71	0.65	70.00	0.40	43.08	3015.38
13	0.75	80.77	0.60	64.62	5218.93	0.43	48.46	0.50	53.85	2609.47	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.30	32.31	1391.72
14	0.55	59.23	0.55	59.23	3508.28	0.98	105.54	0.45	48.46	5114.56	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.35	37.69	2029.59
15	0.60	64.62	0.55	59.23	3827.22	0.58	62.46	0.48	51.69	3228.78	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.30	32.31	1913.61
16	0.60	64.62	0.60	64.62	4175.15	0.60	64.62	0.40	43.08	2783.43	0.35	37.69	0.30	32.31	1217.75	0.60	64.62	0.40	43.08	2783.43
17	0.50	53.85	0.50	53.85	2899.41	0.70	75.38	0.48	51.69	3896.80	0.35	37.69	0.30	32.31	1217.75	0.55	59.23	0.25	26.92	1294.67
18	0.70	75.38	0.60	64.62	4871.01	0.65	70.00	0.42	45.23	3164.15	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.25	26.92	1449.70
19	0.60	64.62	0.50	53.85	3479.29	0.60	64.62	0.54	58.15	3737.63	0.30	32.31	0.30	32.31	1043.79	0.45	48.46	0.30	32.31	1565.68
20	0.75	80.77	0.65	70.00	5653.85	0.70	75.38	0.50	53.85	4059.17	0.30	32.31	0.30	32.31	1043.79	0.30	32.31	0.35	37.69	1217.75
21	0.50	53.85	0.50	53.85	2899.41	0.79	85.08	0.52	56.00	4764.31	0.30	32.31	0.30	32.31	1043.79	0.50	32.31	0.20	21.54	695.86
22	0.60	64.62	0.60	64.62	4175.15	0.50	53.85	0.50	53.85	2899.41	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.55	59.23	2232.54
23	0.65	70.00	0.65	70.00	4900.00	0.70	75.38	0.45	48.46	3653.25	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.30	32.31	1799.64
24	0.70	75.38	0.45	48.46	3853.25	0.60	64.62	0.60	46.42	4175.15	0.35	37.69	0.30	32.31	1217.75	0.30	32.31	0.30	32.31	1043.79
25	0.75	80.77	0.45	48.46	3914.20	0.50	53.85	0.51	54.92	2957.40	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.20	21.54	927.81
Suma	1782.31		1572.31	113308.85		1773.69			1257.85	88807.73	8.20	88.08	7.75	84.62	29544.97		1200.77	953.08	43546.74	
Promedio	71.29		62.89	4512.33		70.95			50.31	3221.73	0.33	33.32	0.31	33.38	1000.70		48.03	38.12	1813.87	
D.E. (σ)	10.69		8.18	1166.20		12.13			5.83	652.70	0.03	2.73	0.02	2.20	143.28		10.30	14.90	752.12	

Promedio del área de las células del haz: 4532.35
 Promedio del área de las células del envéz: 3555.51
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:

1.27 veces el promedio de las células del envéz.
 1.06 veces el promedio del ancho.
 1.26 veces el promedio del ancho.



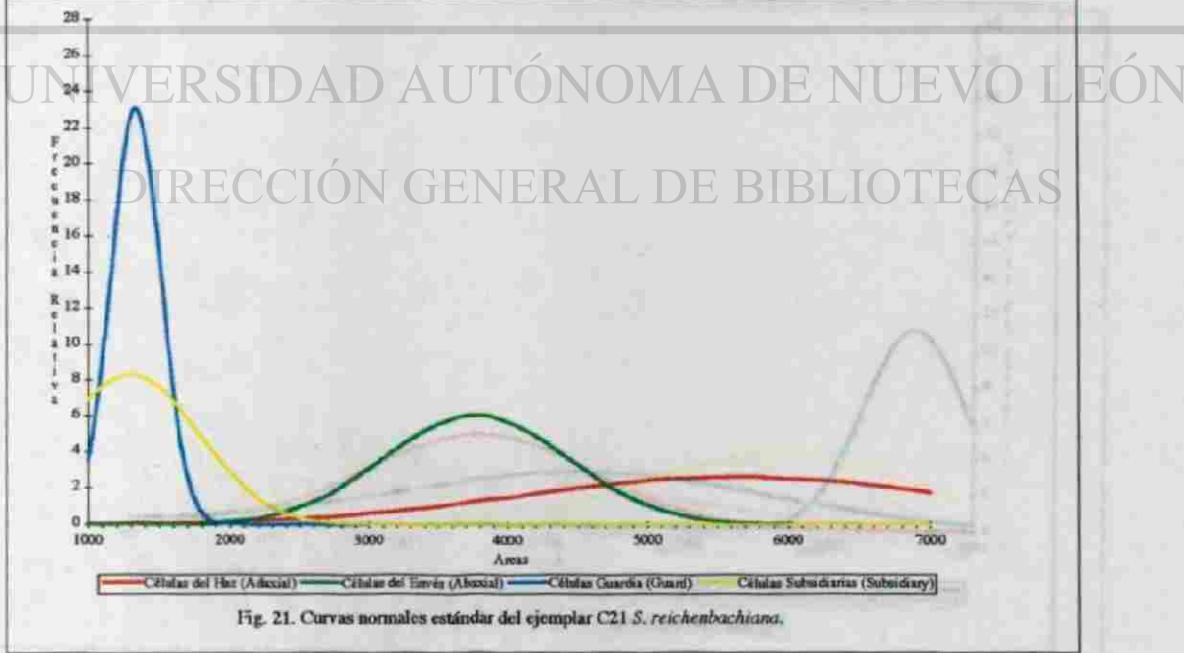
Cuadro 21. Datos estadísticos de C21 *S. reichenbachiana*.

C21 *S. reichenbachiana* (Coll) PI#251195-3 Colombia (1)

#	Células del Hitz (Adaxial Cells)			Células del Envío (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área (μm ²)	Largo (L _b)	Ancho (A _b)	Área (μm ²)	Largo (L _g)	Ancho (A _g)	Área (μm ²)	Largo (L _s)	Ancho (A _s)	Área (μm ²)								
	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice								
1	1.10	118.46	0.50	53.85	6378.70	0.60	64.62	0.56	60.31	3896.80	0.40	43.08	0.30	32.31	1391.72	0.62	64.62	0.40	43.08	2783.45
2	1.25	134.62	0.50	53.85	7248.52	0.60	92.62	0.46	49.54	4588.02	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68
3	1.10	118.46	0.65	70.00	8292.31	0.70	75.38	0.52	56.00	4221.54	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.40	43.08	1855.62
4	0.90	96.92	0.55	59.23	5740.85	0.85	91.34	0.39	42.00	5844.61	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.35	37.69	1826.63
5	0.90	96.92	0.50	53.85	5218.93	0.50	53.85	0.55	59.23	3189.35	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.35	37.69	1420.71
6	1.10	118.46	0.55	59.23	7016.57	0.82	88.31	0.45	48.46	4279.53	0.40	43.08	0.40	43.08	1855.62	0.50	53.85	0.35	37.69	2029.59
7	1.00	107.69	0.50	53.85	5798.82	0.60	64.62	0.53	57.08	3688.05	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.20	21.54	927.81
8	0.75	80.77	0.20	21.54	1759.64	0.80	86.15	0.36	38.77	3340.12	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.15	16.15	608.88
9	1.10	118.46	0.60	64.62	7654.44	0.65	70.00	0.46	49.54	3467.69	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
10	1.10	118.46	0.50	53.85	6378.70	0.50	53.85	0.42	45.23	2435.50	0.40	45.08	0.30	32.31	1391.72	0.45	48.46	0.25	26.92	1304.73
11	0.95	102.31	0.45	48.46	4957.99	0.60	64.62	0.50	53.85	3479.29	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
12	0.95	102.31	0.55	59.23	6059.76	0.55	59.23	0.36	38.77	2296.33	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
13	1.10	118.46	0.55	59.23	7016.57	0.70	75.38	0.45	48.46	3653.25	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.25	26.92	1159.76
14	1.05	113.09	0.60	64.62	7308.51	0.55	59.23	0.55	59.23	3508.28	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.20	21.54	811.85
15	0.90	96.92	0.60	64.62	6262.72	0.62	66.77	0.52	56.00	3739.08	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.20	21.54	927.81
16	1.00	107.69	0.35	37.69	4059.17	0.62	66.77	0.52	56.00	3739.08	0.30	32.31	0.30	32.31	1043.79	0.30	32.31	0.25	26.92	869.82
17	0.95	102.31	0.35	37.69	3856.21	0.90	96.92	0.55	59.23	5740.83	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.35	37.69	1420.71
18	1.00	107.69	0.40	43.08	4659.05	0.52	56.00	0.61	65.69	3678.77	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.20	21.54	1043.79
19	0.80	86.15	0.35	37.69	3247.34	0.60	64.62	0.55	59.23	3827.72	0.35	37.69	0.30	32.31	1420.71	0.40	43.08	0.20	21.54	927.81
20	1.00	107.69	0.35	37.69	4059.17	0.75	80.77	0.45	48.46	3914.20	0.40	43.08	0.20	21.54	927.81	0.40	43.08	0.25	26.92	1159.76
21	1.30	140.00	0.40	43.08	6030.77	0.70	75.38	0.48	51.69	3896.80	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
22	1.25	134.62	0.40	43.08	5798.82	0.63	65.69	0.58	62.46	4103.24	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.40	43.08	1855.62
23	0.95	102.31	0.55	59.23	6459.76	0.60	64.62	0.60	4175.15	3769.05	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.20	21.54	927.81
24	0.95	102.31	0.55	59.23	6059.76	0.55	56.73	0.52	56.00	3316.97	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.20	21.54	927.81
25	0.80	86.15	0.40	43.08	3711.24	0.65	70.00	0.55	59.23	4146.15	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.25	26.92	1159.76
Suma		2719.23		1281.54	140592.29		1766.15		1345.08	54165.81	9.55	1028.46	7.55	813.08	33430.17	1109.23		721.54	32386.39	
Promedio		108.77		51.26	5623.09		70.65		53.86	3700.00	0.38	41.14	0.30	32.52	1007.00	44.37		28.86	1295.46	
D.E. (σ)		14.91		11.54	1540.34		12.48		7.48	659.86	0.03	3.43	0.03	3.29	173.22	6.46		8.21	483.91	

Promedio del área de las células del hitz: 5623.09
 Promedio del área de las células del envío: 3700.00
 El promedio de las células del hitz es:
 El promedio de las células guardia es:
 El promedio de las células subdiarias es:

micras cuadradas
 micras cuadradas
 1.49 veces el promedio de las células del envío.
 1.26 veces el promedio del ancho.
 1.54 veces el promedio del ancho.

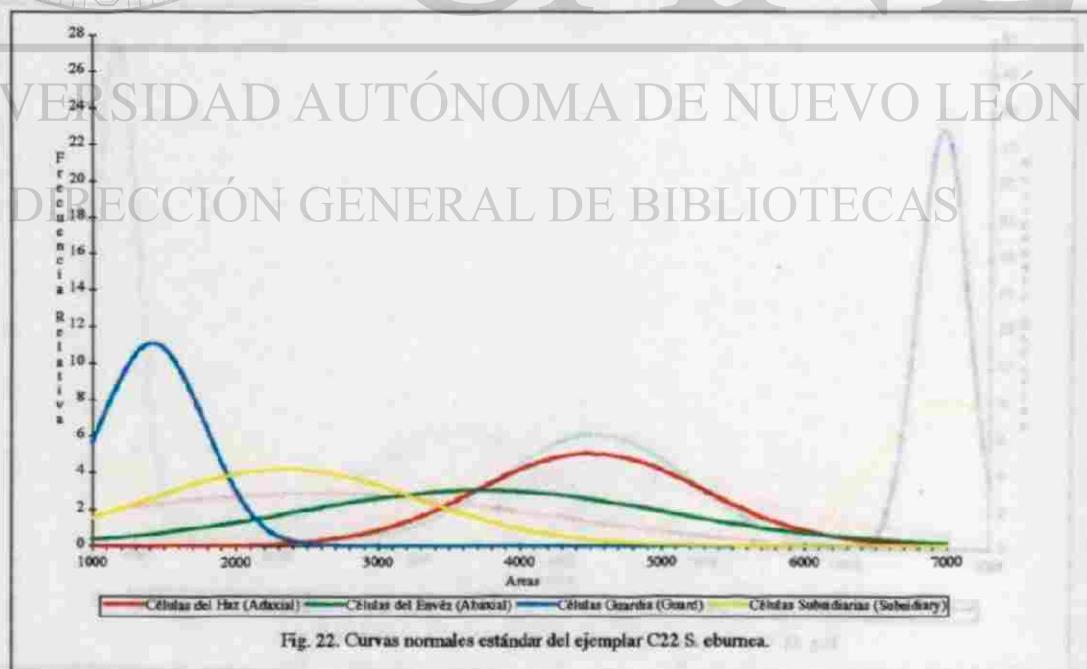


Cuadro 22. Datos estadísticos de *S. eburnea*.

#	Células del Ház (Adaxial Cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subadiarias (Subsidary Cells)							
	Largo (L _a) Índice [μ] _a	Ancho (A _b) Índice [μ] _b	Área [μ ²] _a	Largo (L _c) Índice [μ] _c	Ancho (A _d) Índice [μ] _d	Área [μ ²] _c	Largo (L _g) Índice [μ] _g	Ancho (A _g) Índice [μ] _g	Área [μ ²] _g	Largo (L _s) Índice [μ] _s	Ancho (A _s) Índice [μ] _s	Área [μ ²] _s	Largo (L _t) Índice [μ] _t	Ancho (A _t) Índice [μ] _t	Área [μ ²] _t					
1.	1.30	140.00	0.39	42.00	5880.00	0.90	96.92	0.45	48.46	4697.04	0.40	43.08	0.40	43.08	1855.62	0.60	64.62	0.35	37.69	2415.50
2.	0.75	80.77	0.45	48.46	3914.20	0.60	64.62	0.35	37.69	2415.50	0.30	32.31	0.25	26.92	869.02	0.35	37.69	0.35	37.69	1420.71
3.	0.95	102.31	0.40	43.08	4407.10	0.80	86.15	0.50	53.85	4639.05	0.40	43.08	0.40	43.08	1855.62	0.50	53.85	0.60	64.62	3479.29
4.	1.25	134.62	0.30	32.31	4349.11	0.80	86.15	0.25	26.92	2319.53	0.40	43.08	0.40	43.08	1855.62	0.50	53.85	0.25	26.92	1448.70
5.	0.85	91.54	0.50	53.85	4078.99	0.65	70.00	0.55	59.23	4146.15	0.40	43.08	0.40	43.08	1855.62	0.45	48.46	0.40	43.08	2087.57
6.	0.85	91.54	0.45	48.46	4436.09	0.55	59.23	0.35	37.69	2352.54	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.80	86.15	4639.25
7.	1.00	107.69	0.42	45.23	4871.91	0.95	102.31	0.40	43.08	4407.10	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.60	64.62	3131.36
8.	1.20	129.23	0.40	43.08	5566.86	0.60	64.62	0.55	59.23	3827.22	0.40	43.08	0.35	37.69	1623.67	0.60	64.62	0.40	43.08	2783.43
9.	0.80	86.15	0.48	51.69	4453.49	0.80	86.15	0.40	43.08	3711.34	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.50	53.85	2319.33
10.	0.85	91.54	0.40	43.08	3943.19	0.75	80.77	0.35	37.69	3044.38	0.40	43.08	0.40	43.08	1855.62	0.45	48.46	0.35	37.69	1826.63
11.	1.00	107.69	0.38	40.92	4407.10	0.65	70.00	0.45	48.46	3392.31	0.40	43.08	0.40	43.08	1855.62	0.50	53.85	0.40	43.08	2519.53
12.	0.60	64.62	0.50	53.85	3479.29	1.10	118.46	0.60	64.62	7634.44	0.40	43.08	0.38	40.92	1762.84	0.50	53.85	0.75	80.77	4349.11
13.	0.90	96.92	0.48	51.69	5010.18	0.50	53.85	0.45	48.46	2699.47	0.40	43.08	0.38	40.92	1762.84	0.55	59.23	0.40	43.08	2551.48
14.	1.08	116.31	0.30	32.31	3757.63	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.25	26.92	1159.76	0.40	43.08	0.20	21.54	927.81
15.	1.00	107.69	0.48	51.69	5566.86	0.70	75.38	0.65	70.00	576.92	0.40	43.08	0.25	26.92	1159.76	0.40	43.08	0.45	48.46	2087.57
16.	0.85	91.54	0.40	43.08	3943.19	1.00	107.69	0.40	43.08	4639.05	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.55	59.23	2551.48
17.	0.75	80.77	0.50	53.85	4349.11	0.45	48.46	0.45	48.46	2348.52	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.20	21.54	1159.76
18.	1.05	113.08	0.42	45.23	5114.56	0.60	64.62	0.50	53.85	3479.29	0.30	32.31	0.30	32.31	1043.79	0.55	59.23	0.20	21.54	1275.74
19.	0.75	80.77	0.40	43.08	3479.29	0.80	86.15	0.40	43.08	3711.34	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.55	59.23	3189.35
20.	0.60	64.62	0.48	51.69	3340.12	0.75	80.77	0.65	70.00	5633.85	0.30	32.31	0.30	32.31	1043.79	0.45	48.46	0.35	37.69	1826.63
21.	1.30	107.69	0.50	53.85	3794.92	0.50	53.85	0.40	43.08	2319.53	0.30	32.31	0.30	32.31	1043.79	0.40	43.08	0.40	43.08	1855.62
22.	0.70	75.38	0.50	53.85	4059.17	0.95	102.31	0.45	48.46	4957.99	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.20	21.54	1159.76
23.	0.70	75.38	0.40	43.08	3347.34	0.55	59.23	0.40	43.08	2351.48	0.30	32.31	0.30	32.31	1043.79	0.55	59.23	0.50	53.85	3189.35
24.	1.10	118.46	0.45	48.46	3740.83	0.60	64.62	0.55	59.23	3827.22	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
25.	0.95	102.31	0.40	43.08	4407.10	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.50	53.85	2899.41
Suma	2458.62	1160.92	112450.63		1890.00		1227.69	93157.97	9.10	980.00	831	894.92	35477.15		1292.31		1136.15	58655.02		
Promedio	98.34	46.44	5629.47		75.60		49.11	5796.31	0.36	39.20	0.33	35.80	3101.09		51.69		45.45	2346.20		
D.E. (σ)	20.33	6.77	794.55		19.38		10.46	1328.05	0.05	5.28	0.05	5.56	360.07		6.95		7.45	999.54		

Promedio del área de las células del haz: 4498.05
 Promedio del área de las células del envéz: 3726.32
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subadiarias es:

micras cuadradas
 micras cuadradas
 22.32 células/mm cuadrados
 268.36 células/mm cuadrados
 1.21 veces el promedio de las células del envéz.
 1.10 veces el promedio del ancho.
 1.14 veces el promedio del ancho.



Cuadro 23: Datos estadísticos de C23 *S. ecornuta*.

C23 *S. ecornuta* (Gm) - PH290496-3 Costa Rica, y norte: El Salvador (?), Nicaragua, Honduras, y Guatemala (?)

#	Células del haz (Axial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidary Cells)										
	Largo (L _b)	Ancho (A _b)	Área	Largo (L _e)	Ancho (A _e)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área								
	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice								
1	0.70	75.38	0.50	35.85	4059.17	0.78	84.00	0.30	32.51	2713.85	0.40	43.08	0.25	26.92	1159.76	0.45	48.46	0.80	86.15	4173.15
2	0.50	53.85	0.45	48.46	2609.47	0.65	70.00	0.32	34.46	2412.31	0.38	40.92	0.32	34.46	1410.27	0.50	53.85	0.52	56.00	3015.38
3	0.50	53.85	0.50	53.85	2899.41	0.90	96.92	0.39	42.00	4070.77	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.55	59.23	2232.54
4	0.91	98.00	0.49	52.77	5171.38	0.65	70.00	0.40	43.08	3015.38	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.50	53.85	2609.47
5	0.70	75.38	0.48	51.69	3896.80	0.55	59.23	0.35	37.69	2232.54	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.55	59.23	2551.48
6	0.70	75.38	0.48	51.69	3896.80	0.61	65.69	0.30	32.51	2122.97	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.65	70.00	3769.23
7	1.05	113.08	0.50	53.85	6088.76	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.50	53.85	2899.41
8	0.71	76.46	0.55	59.23	4528.88	0.64	68.92	0.40	43.08	2968.99	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.30	32.31	2087.57
9	0.84	90.46	0.42	43.23	4091.64	0.48	51.69	0.40	43.08	2226.75	0.30	32.31	0.25	26.92	869.82	0.40	43.08	0.40	43.08	1855.62
10	0.43	48.46	0.40	43.08	2087.57	0.70	75.38	0.30	32.31	2435.50	0.30	32.31	0.25	26.92	869.82	0.30	32.31	0.40	43.08	1391.72
11	1.00	107.69	0.75	80.77	8698.22	0.70	75.38	0.45	48.46	3653.25	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.25	26.92	1449.70
12	0.62	66.77	0.49	52.77	3523.36	0.50	53.85	0.42	45.23	2435.50	0.45	48.46	0.35	37.69	1826.63	0.55	59.23	0.30	32.31	1913.61
13	0.50	53.85	0.40	43.08	2819.53	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
14	0.46	49.54	0.40	43.08	2133.96	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.55	59.23	3189.35
15	0.62	66.77	0.48	51.69	3451.46	0.60	64.62	0.30	32.31	2087.57	0.45	48.46	0.35	37.69	1826.63	0.45	48.46	0.25	26.92	1304.73
16	0.54	38.15	0.40	43.08	2305.09	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.25	26.92	1304.73
17	0.50	53.85	0.45	48.46	2609.47	0.64	68.92	0.40	43.08	2968.99	0.40	43.08	0.35	37.69	1623.67	0.55	59.23	0.30	32.31	1913.61
18	0.60	64.62	0.43	45.23	2922.60	0.35	37.69	0.32	34.46	1298.93	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.20	21.54	1043.79
19	0.60	64.62	0.40	43.08	2783.43	0.80	86.15	0.40	43.08	3711.24	0.40	43.08	0.35	37.69	1623.67	0.55	59.23	0.20	21.54	1273.74
20	0.70	75.38	0.48	51.69	3896.80	0.55	59.23	0.40	43.08	2551.48	0.48	51.69	0.35	37.69	1948.40	0.30	33.85	0.25	26.92	1449.70
21	0.65	70.00	0.50	53.85	3769.23	0.92	99.98	0.42	45.23	4481.32	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.25	26.92	1449.70
22	0.60	64.62	0.49	51.69	3340.12	0.48	51.69	0.25	26.92	1391.72	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.35	37.69	1623.67
23	0.82	88.31	0.42	45.23	3994.22	0.70	75.38	0.45	48.46	3653.25	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68
24	0.90	96.92	0.55	59.23	5740.85	0.65	70.00	0.42	45.23	3166.15	0.35	37.69	0.35	37.69	1420.71	0.30	33.85	0.40	43.08	2319.53
25	0.92	99.08	0.46	49.54	4908.12	0.50	53.85	0.45	48.46	2609.47	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.45	48.46	2087.57
Total	1840.46	1276.15	59926.33		1656.92		1011.23	66357.65	9.81	1056.46	7.92	832.92	36266.95		1260.00		1041.38	51638.45		
Promedio	73.62	51.05	5907.45		65.48		40.45	2662.31	0.39	42.26	0.32	34.12	2612.26		50.40		41.66	2065.54		
D.E. (σ)	18.70	7.88	1475.60		15.74		5.99	801.96	0.04	4.28	0.03	3.70	261.26		7.27		16.99	881.96		

Promedio del área de las células del haz: 3837.00

Promedio del área de las células del envés: 2662.31

El promedio de las células del haz es:

El promedio de las células guardia es:

El promedio de las células subadiarias es:

millas cuadradas

260.62 células/mm cuadrados

375.61 células/mm cuadrados

1.44 veces el promedio de las células del envés.

1.24 veces el promedio del ancho.

1.21 veces el promedio del ancho.

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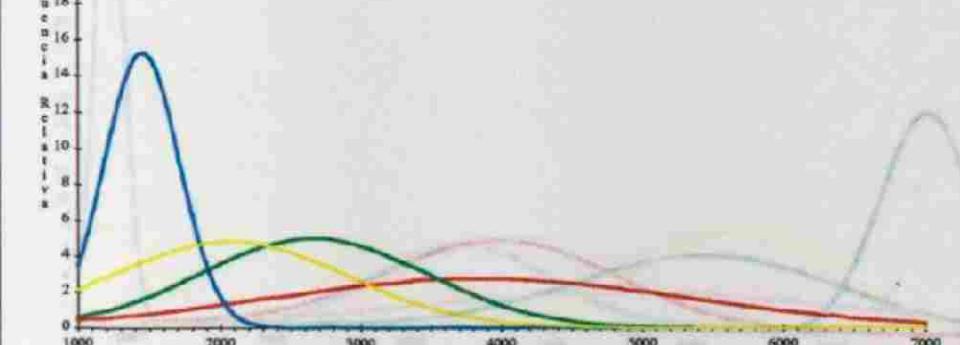


Fig. 23. Curvas normales estándar del ejemplar C23 *S. ecornuta*.

Cuadro 24. Datos estadísticos de C24 *S. jenischiana*.

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _c) Índice	Ancho (A _c) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²
	μ	μ	μm ²	μ	μ	μm ²	μ	μ	μm ²	μ	μ	μm ²
1	0.60	64.62	0.45	48.46	3131.36	0.65	70.00	0.45	48.46	3392.31	0.50	32.31
2	0.60	64.62	0.65	70.00	4523.08	0.40	43.08	0.40	43.08	1855.62	0.30	32.31
3	0.60	64.62	0.50	53.85	3479.29	0.40	43.08	0.40	43.08	1855.62	0.30	32.31
4	0.75	80.77	0.65	70.00	3463.85	0.40	43.08	0.40	43.08	1855.62	0.30	32.31
5	0.75	80.77	0.60	64.62	5218.98	0.50	53.85	0.40	43.08	2319.53	0.55	37.69
6	0.80	86.15	0.60	64.62	5366.86	0.80	86.15	0.55	59.23	5102.96	0.35	37.69
7	0.82	88.31	0.60	64.62	5706.09	0.60	64.62	0.45	48.46	3131.36	0.38	40.92
8	0.82	88.31	0.60	64.62	5706.09	0.55	59.23	0.45	48.46	2870.41	0.40	43.08
9	0.80	86.15	0.50	53.85	4639.05	0.85	91.54	0.50	53.85	4928.99	0.35	37.69
10	0.80	86.15	0.50	53.85	4639.05	0.70	75.38	0.40	43.08	3247.54	0.35	37.69
11	0.80	86.15	0.50	53.85	4639.05	0.65	70.00	0.30	32.31	2261.54	0.25	26.92
12	0.70	75.38	0.50	53.85	4059.17	0.95	102.31	0.40	43.08	4470.10	0.40	43.08
13	0.70	75.38	0.50	53.85	4059.17	0.60	64.62	0.50	32.31	2087.57	0.35	37.69
14	0.60	64.62	0.50	53.85	3479.29	0.75	80.77	0.45	48.46	3914.20	0.45	48.46
15	0.75	80.77	0.45	48.46	3914.20	0.65	70.00	0.50	53.85	3769.23	0.40	43.08
16	0.72	77.54	0.50	53.85	4175.15	0.60	64.62	0.35	37.69	2435.50	0.40	43.08
17	0.65	70.00	0.50	53.85	3769.23	0.50	53.85	0.45	48.46	2609.47	0.30	32.31
18	0.60	64.62	0.45	48.46	3131.36	0.60	64.62	0.50	53.85	3479.29	0.35	37.69
19	0.65	70.00	0.45	48.46	3392.31	0.55	59.23	0.45	48.46	2870.41	0.35	37.69
20	0.60	64.62	0.55	59.23	3827.22	0.70	75.38	0.35	37.69	2841.42	0.35	37.69
21	0.80	86.15	0.55	59.23	5102.96	0.45	48.46	0.45	48.46	2348.52	0.45	48.46
22	0.60	64.62	0.50	53.85	3479.29	0.60	64.62	0.45	48.46	3131.36	0.45	48.46
23	0.80	86.15	0.45	48.46	4175.15	0.45	48.46	0.40	43.08	2087.57	0.35	37.69
24	0.80	86.15	0.50	53.85	4639.05	0.45	48.46	0.35	37.69	1826.63	0.30	32.31
25	0.80	86.15	0.55	59.23	5102.96	0.40	43.08	0.40	43.08	1855.62	0.45	48.46
Suma	1928.77	1410.77	109209.10		1588.46		1130.77	72485.20	8.98	967.08	8.07	869.08
Promedio	77.15	56.43	4368.90		63.54		45.23	2870.41	0.36	38.68	0.32	34.76
D.E. (σ)	9.45	6.62	824.01		15.93		6.59	957.87	0.06	5.97	0.04	3.80
										325.76		8.37
												8.51
												706.42

Promedio del área de las células del haz: 4368.90

Promedio del área de las células del envés: 2899.41

El promedio de las células del haz es:

El promedio de las células guardia es:

El promedio de las células subsidiarias es:

228.92 células/mm cuadrados

micras cuadradas

344.90 células/mm cuadrados

1.51 veces el promedio de las células del envés.

1.11 veces el promedio del ancho.

0.93 veces el promedio del ancho.



Cuadro 25. Datos estadísticos de C25 *S. grandiflora*.

C25-*S. grandiflora* (Brid.) Pl#250496-1 Colombia, Venezuela, Brasil (I), Ecuador y Perú

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (L) Índice	Ancho (A) Índice	Área μm²								
	μm	μm	μm²	μm	μm	μm²	μm	μm	μm²	μm	μm	μm²								
1	1.30	140.00	0.42	45.29	6332.31	0.95	102.31	0.30	32.31	3305.32	0.36	38.77	0.30	32.31	1252.54	0.50	53.85	0.25	26.92	1449.70
2	1.15	123.85	0.45	48.46	6001.77	0.85	91.54	0.38	40.92	3746.03	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
3	0.94	101.25	0.45	48.46	4905.80	0.90	96.97	0.32	34.46	3340.12	0.32	34.46	0.50	32.31	1113.37	0.50	53.85	0.40	43.08	2319.53
4	1.30	140.00	0.50	53.85	7338.46	0.86	92.62	0.42	45.23	4189.06	0.30	32.31	1043.79	0.40	43.08	0.18	19.38	835.03		
5	0.70	75.38	0.40	43.08	3247.34	0.70	75.38	0.45	48.46	3653.25	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.15	16.15	695.86
6	0.90	96.92	0.50	53.85	5218.93	0.85	91.54	0.45	48.46	4436.09	0.35	37.69	0.30	32.31	1217.75	0.32	34.46	0.22	23.69	816.47
7	0.82	88.31	0.50	53.85	4755.01	0.90	96.92	0.45	48.46	4697.04	0.35	37.69	0.30	32.31	1217.75	0.42	45.23	0.20	21.54	974.20
8	1.00	107.69	0.58	62.46	6726.63	0.75	80.77	0.40	43.08	3479.29	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.15	16.15	608.88
9	1.10	118.46	0.50	53.85	6378.70	0.75	80.77	0.40	43.08	3479.29	0.30	32.31	1043.79	0.35	37.69	0.10	10.77	405.92		
10	0.65	70.00	0.50	53.85	3769.23	0.80	86.15	0.42	45.23	3896.80	0.35	37.69	0.30	32.31	1217.75	0.30	32.31	0.20	21.54	695.86
11	0.95	102.31	0.60	64.62	6610.65	0.75	80.77	0.40	43.08	3479.29	0.35	37.69	0.30	32.31	1217.75	0.30	32.31	0.20	21.54	695.86
12	1.00	107.69	0.58	62.46	6726.63	1.00	107.69	0.45	48.46	5218.93	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.15	16.15	869.82
13	0.80	86.15	0.50	53.85	4619.05	0.75	80.77	0.38	40.92	3305.32	0.35	37.69	0.35	37.69	1420.71	0.50	53.85	0.15	16.15	869.82
14	0.80	86.15	0.52	56.00	4824.61	0.85	91.54	0.40	43.08	3943.19	0.35	37.69	0.30	32.31	1217.75	0.38	40.92	0.15	16.15	661.06
15	0.90	96.92	0.55	59.23	5740.83	0.96	103.38	0.45	48.46	5010.18	0.35	37.69	0.30	32.31	1217.75	0.38	40.92	0.15	16.15	661.06
16	1.00	107.69	0.55	59.23	6378.70	0.80	88.31	0.35	37.69	3328.52	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.20	21.54	1159.76
17	0.58	62.46	0.42	45.23	2825.18	0.85	91.54	0.40	43.08	3943.19	0.30	32.31	1043.79	0.50	53.85	0.10	10.77	579.88		
18	0.68	73.23	0.45	48.46	3548.88	0.65	70.00	0.45	48.46	3392.31	0.40	43.08	0.30	32.31	1391.72	0.42	45.23	0.20	21.54	974.20
19	0.88	94.77	0.40	43.08	4682.37	0.60	64.62	0.40	43.08	2783.43	0.38	40.92	0.28	30.15	1233.99	0.42	45.23	0.20	21.54	974.20
20	0.60	64.62	0.40	43.08	2783.43	0.72	77.54	0.40	43.08	3340.12	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.20	21.54	927.81
21	0.90	96.92	0.48	51.69	5010.18	0.70	75.38	0.45	48.46	3653.25	0.40	43.08	0.28	30.15	1298.98	0.38	40.92	0.20	21.54	881.42
22	0.60	64.62	0.42	45.23	2922.60	0.91	98.00	0.38	40.92	4010.46	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
23	0.75	80.77	0.35	57.69	3044.38	0.65	70.00	0.40	43.08	3015.38	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.30	32.31	1391.72
24	0.72	77.54	0.35	57.69	2922.60	0.64	68.92	0.40	43.08	2968.99	0.32	34.46	0.30	32.31	1113.37	0.48	51.69	0.32	34.46	1781.40
25	0.75	80.77	0.40	43.08	3479.29	0.70	75.38	0.40	43.08	3247.34	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.15	16.15	695.86
Suma	2344.46	1267.54	120413.57		2138.77		1087.69	92862.34	8.78	945.54	7.51	808.77	30570.20		1130.77	546.00	25114.67			
Promedio	93.78	50.70	4619.54		85.55		43.51	8.46	0.35	37.82	0.30	32.35	102.47		45.23	21.84	1004.59			
D.F. (n)	21.68		7.58		1493.20		11.85		4.29	614.10	0.03	3.13	0.01	1.26		7.30		7.85	466.20	

Promedio del Área de las células del haz: 481.54
 Promedio del Área de las células del envéz: 3714.49
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiarias es:

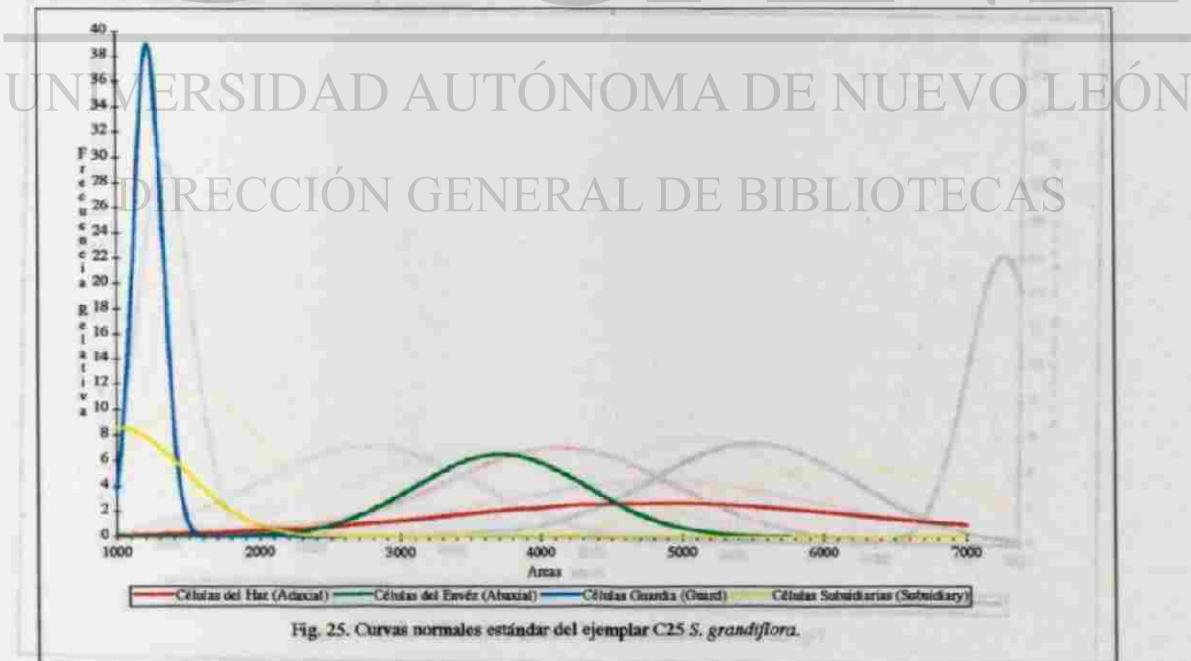
11.85 μm² cuadradas
 85.55 μm² cuadradas
 43.51 μm² cuadradas

207.62 células/mm cuadrados
 269.22 células/mm cuadrados

1.30 veces el promedio de las células del envéz.

1.17 veces el promedio del ancho.

2.07 veces el promedio del ancho.



Cuadro 26. Datos estadísticos de C26 *S. tigrina*.

C26 <i>S. tigrina</i>				PI/290496-9 Colombia y norte incl. México (nota: l.d. como <i>S. tigrina</i> 10 jul 96)																
#	Células del Ház (Adaxial cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cell)				Células Subsidiarias (Subsidiary Cells)							
	Largo (Lh)	Ancho (Ah)	Área (μm^2)	Índice	Largo (Lc)	Ancho (Ac)	Área (μm^2)	Índice	Largo (Lg)	Ancho (Ag)	Área (μm^2)	Índice	Largo (La)	Ancho (Aa)	Área (μm^2)	Índice				
1	0.70	75.38	0.50	53.85	4059.17	0.75	80.77	0.40	43.08	3479.29	0.40	43.08	0.50	32.31	1391.72	0.45	48.46	0.20	21.54	1043.79
2	0.53	57.08	0.40	43.08	2458.70	0.52	56.00	0.40	43.08	2412.31	0.38	40.92	0.50	32.31	1322.13	0.50	53.85	0.35	37.69	2029.59
3	0.71	76.46	0.45	48.46	3705.44	0.85	91.54	0.40	43.08	3943.19	0.30	32.31	0.28	30.15	974.20	0.50	53.85	0.28	30.15	1623.67
4	0.70	75.38	0.45	48.46	3653.25	0.55	59.23	0.50	53.85	3189.35	0.30	32.31	0.30	32.31	1043.79	0.50	53.85	0.25	26.92	1449.70
5	0.80	86.15	0.40	43.08	3711.24	0.60	64.62	0.40	43.08	2785.43	0.38	40.92	0.30	32.31	1322.13	0.42	45.23	0.42	45.23	2045.82
6	0.71	76.46	0.55	59.23	4528.88	0.65	70.00	0.50	53.85	3769.23	0.30	32.31	0.25	26.92	869.82	0.42	45.23	0.50	53.85	2435.50
7	0.65	70.00	0.45	48.46	3392.31	0.64	68.92	0.54	58.15	4008.14	0.30	32.31	0.20	21.54	695.86	0.48	51.69	0.43	48.46	2305.09
8	0.70	75.38	0.55	59.23	4465.09	0.55	59.23	0.45	48.46	2870.41	0.30	32.31	0.30	32.31	1043.79	0.48	51.69	0.22	23.69	1224.71
9	0.88	94.77	0.50	53.85	5102.96	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.20	21.54	1113.37
10	0.85	91.54	0.46	49.54	4534.67	0.45	48.46	0.40	43.08	2087.57	0.30	32.31	0.30	32.31	1043.79	0.42	45.23	0.30	32.31	1461.30
11	0.89	95.85	0.48	51.69	4954.51	0.50	53.85	0.45	48.46	2609.47	0.30	32.31	0.20	21.54	695.86	0.50	53.85	0.45	48.46	2409.47
12	0.88	94.77	0.44	47.38	4490.60	0.55	59.23	0.52	56.00	3316.92	0.40	43.08	0.30	32.31	1391.72	0.55	59.23	0.40	48.08	2351.48
13	0.75	80.77	0.60	64.62	5218.93	0.50	53.85	0.40	43.08	7319.33	0.38	40.92	0.30	32.31	1372.13	0.75	80.77	0.45	48.46	3914.20
14	0.67	72.15	0.50	53.85	3885.21	0.65	70.00	0.48	51.69	3618.46	0.42	45.23	0.30	32.31	1461.30	0.40	43.08	0.30	32.31	1391.72
15	0.56	60.31	0.58	62.46	3766.91	0.63	70.00	0.35	37.69	2638.46	0.38	40.92	0.25	26.92	1101.77	0.48	51.69	0.20	21.54	1113.37
16	0.76	81.85	0.60	64.62	5288.52	0.55	59.23	0.42	45.23	2679.05	0.35	37.69	0.28	30.15	1136.57	0.55	59.23	0.50	53.85	3189.35
17	0.71	76.46	0.45	48.46	3705.44	0.68	73.23	0.42	45.23	3312.28	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.35	37.69	1623.67
18	0.78	84.00	0.55	59.23	4975.38	0.40	43.08	0.48	51.69	2226.75	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.35	37.69	1623.67
19	0.73	78.62	0.55	59.23	4656.45	0.75	80.77	0.51	54.92	4436.09	0.35	37.69	0.30	32.31	1217.75	0.30	32.31	0.10	10.77	347.93
20	0.90	96.92	0.43	46.31	4488.28	0.60	64.62	0.38	40.92	2644.26	0.35	37.69	0.26	30.15	1136.57	0.50	53.85	0.50	53.85	2899.41
21	0.96	103.38	0.50	53.85	5366.86	0.39	42.00	0.39	42.00	1764.00	0.25	26.92	0.20	21.54	579.88	0.55	59.23	0.50	53.85	3189.35
22	0.52	56.00	0.48	51.69	2894.77	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.25	26.92	1159.76	0.55	59.23	0.50	53.85	3189.35
23	0.69	74.31	0.62	66.77	4861.47	0.52	56.00	0.39	42.00	2352.00	0.35	37.69	0.25	26.92	1014.79	0.55	59.23	0.55	59.23	3508.28
24	0.65	70.00	0.54	58.15	4070.77	0.48	51.69	0.35	37.69	1948.40	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.50	53.85	2899.41
25	0.57	61.38	0.45	48.46	2974.79	0.52	56.00	0.41	44.15	2472.62	0.30	32.31	0.25	26.92	869.82	0.52	56.00	0.50	53.85	3015.38
Suma	1965.38		1344.00	105510.61		1529.23		1162.00	71404.30	8.69	935.85	6.94	747.38	28217.04		1308.46		1003.69	53998.57	
Promedio	78.62		53.76	4200.43		61.17		46.48	4399	0.35	37.69	0.28	29.90	1388.01		52.34		40.15	2159.94	
D.E. (σ)	12.74		6.80	805.00		12.39		6.14	734.29	0.05	4.96	0.04	4.03	247.57		8.90		13.71	924.67	

Promedio del área de las células del haz: 4220.42
 Promedio del área de las células del envéz: 2856.17
 El promedio de las células del haz es:
 El promedio de las células guarda es:
 El promedio de las células subsidiaria es:

1.48 veces el promedio de las células del envéz.

1.25 veces el promedio del ancho.

1.30 veces el promedio del ancho.

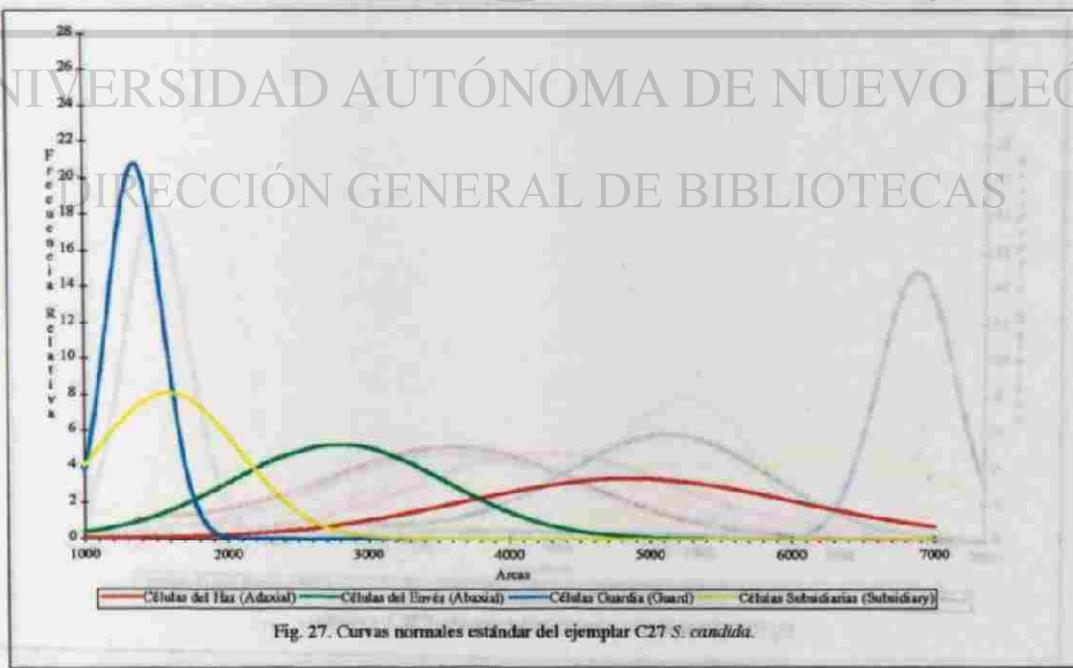


Cuadro 27. Datos estadísticos de C27 *S. candida*.

C27. S. candida (Col): Pl#2511954 Colombia (1); Brasil; Venezuela; Ecuador y Perú																				
#	Células del Ház (Adaxial Cells)			Células Del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (Lx) Index	Ancho (Ax) Index	Area μm²	Largo (Lx) Index	Ancho (Ax) Index	Area μm²	Largo (Lx) Index	Ancho (Ax) Index	Area μm²	Largo (Lx) Index	Ancho (Ax) Index	Area μm²								
	[μm]	[μm]		[μm]	[μm]		[μm]	[μm]		[μm]	[μm]									
1	0.50	53.85	0.55	59.23	3189.35	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.32	34.46	1484.30	0.42	45.23	0.35	37.69	1704.85
2	0.52	66.77	0.55	59.23	3954.79	0.50	53.85	0.50	53.85	2899.43	0.40	43.08	0.32	34.46	1484.30	0.40	43.08	0.25	26.92	1159.76
3	0.60	64.62	0.70	75.38	4871.01	0.50	53.83	0.40	43.08	2319.53	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.55	39.23	2551.48
4	0.62	66.77	0.65	70.00	4673.85	0.50	53.85	0.50	53.85	2899.41	0.40	43.06	0.30	32.31	1391.72	0.50	53.85	0.20	21.54	1159.76
5	0.75	80.77	0.60	64.62	5218.93	0.58	62.46	0.45	48.46	3026.98	0.45	48.46	0.40	43.08	2087.57	0.45	48.46	0.20	21.54	1048.79
6	0.62	66.77	0.60	64.62	4314.32	0.45	48.46	0.35	37.69	1826.63	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
7	0.68	73.23	0.60	64.62	4731.83	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.30	32.31	1217.75
8	0.62	66.77	0.50	53.85	3595.27	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.28	30.15	1298.93	0.40	43.08	0.45	48.46	2087.57
9	0.90	94.92	0.60	64.62	6262.72	0.35	37.69	0.50	53.85	2029.59	0.38	40.92	0.25	26.92	1101.77	0.45	48.46	0.30	32.31	1565.68
10	0.75	80.77	0.50	53.85	4349.11	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.20	21.54	1048.79
11	0.85	91.54	0.50	53.85	4928.99	0.60	64.62	0.40	43.08	2783.43	0.40	43.08	0.25	26.92	1159.76	0.35	37.69	0.35	37.69	1420.71
12	0.80	86.15	0.50	53.85	4619.03	0.60	64.62	0.50	53.85	3479.29	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.40	43.08	1623.67
13	0.85	91.54	0.50	53.85	4928.99	0.35	37.69	0.35	37.69	1420.71	0.35	37.69	0.30	32.31	1217.75	0.42	45.23	0.30	32.31	1461.30
14	0.70	75.38	0.50	53.85	4059.17	0.60	64.62	0.45	48.46	3131.36	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.45	48.46	2087.57
15	0.48	51.69	0.45	48.46	2505.09	0.70	75.38	0.45	48.46	3653.25	0.40	43.08	0.28	30.15	1298.93	0.45	48.46	0.55	59.23	2870.41
16	1.00	107.69	0.60	64.62	6958.58	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.30	32.31	1391.72	0.32	34.46	0.30	32.31	1113.57
17	1.00	107.69	0.60	64.62	6958.58	0.32	34.46	0.60	64.62	2226.75	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
18	1.00	107.69	0.52	36.00	6030.77	0.35	37.69	0.60	64.62	2435.30	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
19	0.95	102.31	0.60	64.62	6610.65	0.45	48.46	0.62	66.77	3235.74	0.35	37.69	0.25	26.92	1014.79	0.30	32.31	0.35	37.69	1217.75
20	0.95	102.31	0.60	64.62	6610.63	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.45	48.46	1826.63
21	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.50	53.85	2319.53
22	0.60	64.62	0.70	75.38	4871.01	0.55	59.23	0.35	59.23	3508.28	0.40	43.08	0.30	32.31	1391.72	0.30	32.31	0.50	53.85	1739.64
23	0.50	53.85	0.50	53.85	2899.41	0.70	75.38	0.32	34.46	2597.87	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.25	26.92	1159.76
24	0.70	75.38	0.60	64.62	4871.01	0.55	59.23	0.32	34.46	2041.18	0.40	43.08	0.30	32.31	1391.72	0.42	45.23	0.40	43.08	1948.40
25	0.70	75.38	0.62	66.77	5083.37	0.60	64.62	0.60	64.62	4175.15	0.35	37.69	0.30	32.31	1217.75	0.38	40.92	0.25	26.92	1101.77
Media	1.00	102.31	0.60	64.62	123415.60		1375.08		1277.23	69734.95	9.78	1053.23	7.45	800.31	35894.08		1061.85		942.31	39600.11
Promedio	79.65	60.91	45.62				54.92		51.09	7791.16	8.39	42.13	5.50	32.09	2.52		42.47		37.69	1584.00
D.E. (e)	17.49	7.20	1200.79				11.61		10.26	768.86	0.02	2.55	0.03	3.03	192.28		5.26		11.53	494.55

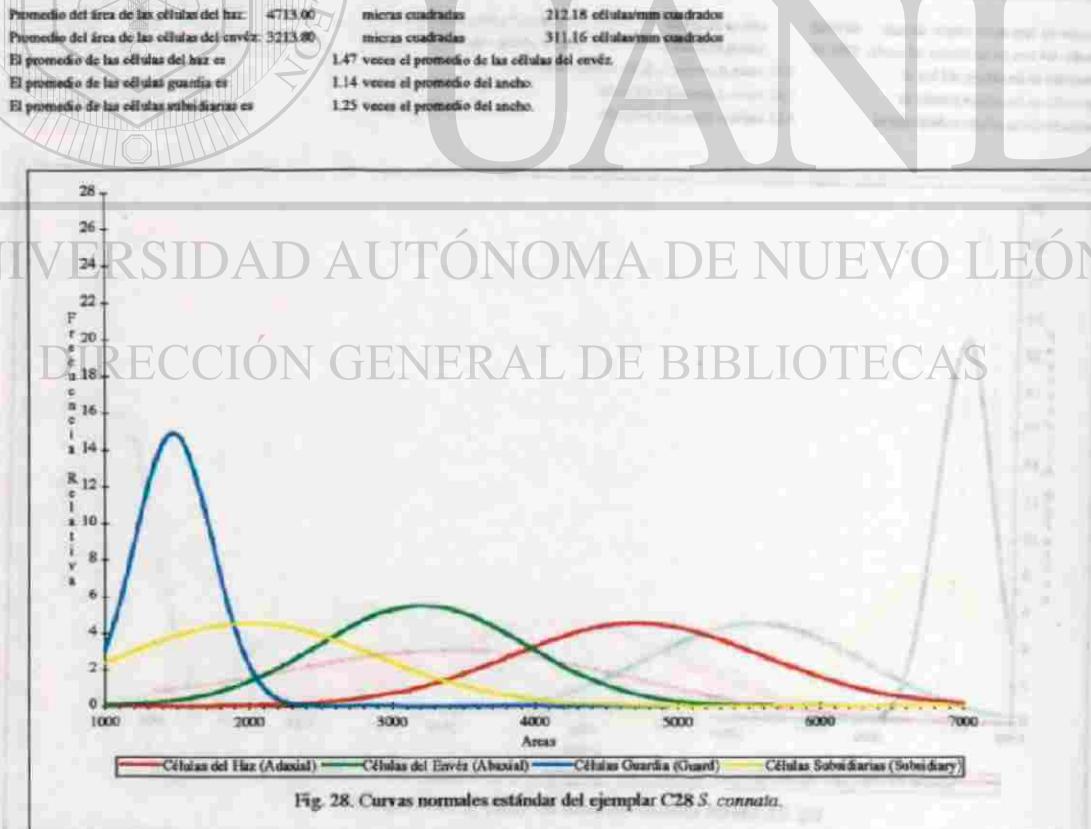
Promedio del área de las células del haz: 4856.62
 Promedio del área de las células del envés: 2790.16
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiarias es:

1.74 veces el promedio de las células del envés.
 1.31 veces el promedio del ancho.
 1.13 veces el promedio del ancho.



Cuadro 28. Datos estadísticos de C28 S. connata.

#	C28. S. connata (Col) PU200696-4 Colombia (1). Ecuador y Perú						C28. S. connata (Col) PU200696-4 Colombia (1). Ecuador y Perú						C28. S. connata (Col) PU200696-4 Colombia (1). Ecuador y Perú						C28. S. connata (Col) PU200696-4 Colombia (1). Ecuador y Perú					
	Células del haz (Axiomal Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdriarias (Subsidary Cells)			Células del haz (Axiomal Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subdriarias (Subsidary Cells)		
	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²			
1	0.92	99.08	0.50	53.85	5334.91	0.50	53.85	0.46	49.54	2667.46	0.38	40.92	0.32	34.46	141.027	0.50	53.85	0.30	32.31	1739.64				
2	0.80	86.15	0.41	44.15	3804.02	0.61	65.69	0.48	51.69	3395.79	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.30	32.31	1565.68				
3	0.72	77.54	0.45	48.46	3757.63	0.70	75.38	0.47	50.62	3815.62	0.30	32.31	0.25	26.92	869.82	0.50	53.85	0.45	48.46	2609.47				
4	0.92	99.08	0.45	48.46	4801.42	0.60	64.62	0.48	51.69	3340.12	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.40	43.08	1623.67				
5	1.06	114.15	0.50	53.85	5146.74	0.68	73.23	0.40	43.08	3154.56	0.35	37.69	0.30	32.31	1217.75	0.42	45.23	0.45	48.46	2191.95				
6	0.63	70.00	0.60	64.62	4523.08	0.50	53.85	0.46	43.08	2319.33	0.40	43.08	0.40	43.08	1855.62	0.50	53.85	0.50	53.85	2899.41				
7	0.71	76.46	0.50	53.85	4117.16	0.50	53.85	0.35	37.69	2029.59	0.38	40.92	0.30	32.31	1322.13	0.38	40.92	0.25	26.92	1101.77				
8	0.80	86.15	0.40	43.08	3711.24	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.40	43.08	1855.62	0.38	40.92	0.20	21.54	881.42				
9	1.00	107.69	0.40	43.08	4639.05	0.63	67.85	0.45	48.46	3287.93	0.40	43.08	0.40	43.08	1855.62	0.55	59.23	0.60	64.62	3807.22				
10	0.70	75.38	0.50	53.85	4059.17	0.78	84.00	0.39	42.00	3528.00	0.40	43.08	0.30	32.31	1391.72	0.30	32.31	0.30	32.31	1043.79				
11	0.71	76.46	0.35	59.23	4528.88	0.80	86.15	0.35	59.23	5102.96	0.40	43.08	0.30	32.31	1391.72	0.15	59.23	0.60	64.62	3827.22				
12	0.78	84.00	0.52	56.00	4704.00	0.60	64.62	0.40	43.08	2783.43	0.32	34.46	0.32	34.46	1187.60	0.62	66.77	0.50	53.85	3595.27				
13	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.40	43.08	2783.43	0.35	37.69	0.35	37.69	1420.71	0.45	48.46	0.25	26.92	1304.73				
14	0.90	96.92	0.60	64.62	6262.72	0.52	56.00	0.51	54.92	3075.69	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.20	21.54	1043.79				
15	0.90	96.92	0.45	48.46	4697.04	0.60	64.62	0.41	44.15	2853.02	0.40	43.08	0.32	34.46	1484.50	0.40	43.08	0.42	45.23	1948.40				
16	0.71	76.46	0.45	48.46	3705.44	0.50	53.85	0.43	46.31	3493.49	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.32	34.46	1855.62				
17	0.90	96.92	0.60	64.62	6262.72	0.60	64.62	0.40	43.08	2783.43	0.35	37.69	0.35	37.69	1420.71	0.45	48.46	0.40	43.08	2087.57				
18	0.81	87.23	0.60	64.62	5636.45	0.61	65.69	0.40	43.08	2829.82	0.42	45.23	0.40	43.08	1948.40	0.50	53.85	0.20	21.54	1159.76				
19	0.70	75.38	0.60	64.62	4871.01	0.48	51.69	0.50	53.85	2783.43	0.40	43.08	0.38	40.92	1762.84	0.45	48.46	0.25	26.92	1304.73				
20	0.80	86.15	0.50	53.85	4639.05	0.60	64.62	0.59	63.54	4105.56	0.38	40.92	0.32	34.46	1410.27	0.45	48.46	0.25	26.92	1304.73				
21	0.81	87.23	0.50	53.85	4697.04	0.65	70.00	0.48	51.69	3618.46	0.45	48.46	0.32	34.46	1670.06	0.40	43.08	0.50	53.85	2319.53				
22	0.98	105.54	0.50	53.85	5482.84	0.70	75.38	0.52	56.00	4221.54	0.38	40.92	0.35	37.69	1542.48	0.50	53.85	0.30	32.31	1739.64				
23	0.60	64.62	0.45	48.46	3131.36	0.64	68.92	0.50	53.85	3711.24	0.40	43.08	0.40	43.08	1855.62	0.60	64.62	0.45	48.46	3131.36				
24	1.00	107.69	0.51	54.92	5914.79	0.82	88.31	0.43	48.46	4279.53	0.40	43.08	0.35	37.69	1623.67	0.48	51.69	0.30	32.31	1670.06				
25	0.79	85.08	0.42	43.23	3848.09	0.42	45.23	0.45	48.46	2191.95	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.50	53.85	2319.53				
Suma		2199.06		1341.85	117824.96		1635.85		1224.46	80344.91	9.51	1024.15	8.33	897.08	36933.82		1241.69		989.69	50095.97				
Promedio		87.96		53.67	4731.96		65.43		48.98	3131.36	0.38	40.97	0.33	35.88	1475.51		49.67		39.59	2008.84				
D.E. (σ)		12.97		6.95	878.44		10.92		6.17	723.05	0.03	3.56	0.04	4.58	268.49		8.07		13.34	879.68				



Cuadro 29. Datos estadísticos de C29 *S. haselowskia*.

C29 *S. haselowskia* (Part). PH200696.5 - Perú (I)

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidary Cells)		
	Largo (L _a) Index	Ancho (A _a) Index	Área μm ²	Largo (L _b) Index	Ancho (A _b) Index	Área μm ²	Largo (L _c) Index	Ancho (A _c) Index	Área μm ²	Largo (L _d) Index	Ancho (A _d) Index	Área μm ²
1	0.90	96.92	0.50	53.85	5218.93	0.50	53.85	2899.41	0.40	43.08	0.30	32.31
2	0.70	75.38	0.45	48.46	3463.25	0.60	64.62	0.50	53.85	3479.29	0.50	53.85
3	0.65	70.00	0.50	53.85	3769.23	0.60	64.62	0.55	59.23	3827.77	0.40	43.08
4	0.70	75.38	0.45	48.46	3463.23	0.75	80.77	0.60	64.62	5218.93	0.40	43.08
5	0.68	73.25	0.40	43.08	3154.56	0.55	59.23	0.50	53.85	3189.35	0.40	43.08
6	0.68	73.23	0.40	43.08	3154.56	0.50	53.85	0.48	51.69	2783.43	0.40	43.08
7	0.90	96.92	0.50	53.85	5218.93	0.55	59.23	0.50	53.85	3189.35	0.50	53.85
8	1.10	118.46	0.50	53.85	6378.70	0.50	53.85	2899.41	0.40	43.08	0.50	32.31
9	0.60	64.62	0.40	43.08	2783.43	0.30	32.31	0.40	43.08	48.46	0.30	32.31
10	0.70	75.38	0.55	59.23	4465.09	0.50	53.85	0.50	53.85	2899.41	0.40	43.08
11	0.80	86.15	0.50	64.62	5566.86	0.65	70.00	0.50	53.85	3769.23	0.55	37.69
12	0.65	70.00	0.50	53.85	3769.23	0.60	64.62	0.55	59.23	3827.77	0.45	48.46
13	0.70	75.38	0.50	53.85	4059.17	0.50	53.85	0.55	59.23	3189.35	0.40	43.08
14	0.60	64.62	0.50	53.85	3479.29	0.55	59.23	0.50	53.85	3508.28	0.40	43.08
15	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.55	59.23	3189.35	0.40	43.08
16	0.62	66.77	0.60	64.62	4314.32	0.60	64.62	0.50	53.85	3479.29	0.40	43.08
17	0.60	64.62	0.60	64.62	4175.15	0.50	53.85	0.48	51.69	2783.43	0.40	43.08
18	0.55	59.23	0.55	59.23	3508.28	0.48	51.69	0.60	64.62	3340.12	0.40	43.08
19	0.60	64.62	0.55	59.23	3827.77	0.50	53.85	0.65	70.00	3769.23	0.58	40.92
20	0.60	64.62	0.60	64.62	4175.15	0.70	75.38	0.70	75.38	5682.84	0.40	43.08
21	0.80	86.15	0.50	53.85	4639.05	0.65	70.00	0.70	75.38	5276.92	0.40	43.08
22	0.85	91.54	0.60	64.62	5914.79	0.60	64.62	0.65	70.00	4523.08	0.40	43.08
23	0.95	59.73	0.60	64.62	3827.77	0.60	64.62	0.60	64.62	4175.15	0.45	48.46
24	0.60	64.62	0.52	66.77	4314.32	0.50	53.85	0.60	64.62	3479.29	0.40	43.08
25	0.65	70.00	0.55	70.00	4900.00	0.45	48.46	0.60	64.62	3131.36	0.50	53.85
Total	1871.69	1412.92	105399.27		1478.62		1487.23	88901.64	1038	1117.85	7.62	820.62
Promedio	74.87	56.52	4219.97		59.14		59.49	88901.64	0.42	44.71	0.30	32.31
D.E. (σ)	14.10	7.74	898.67		9.77		7.92	907.44	0.04	4.09	0.03	3.57
												221.49
												10.91
												16.33
												1251.00

Promedio del área de las células del haz: 4215.97

Promedio del área de las células del envés: 3556.07

El promedio de las células del haz es:

El promedio de las células guardia es:

El promedio de las células subadiarias es:

micas cuadradas

micas cuadradas

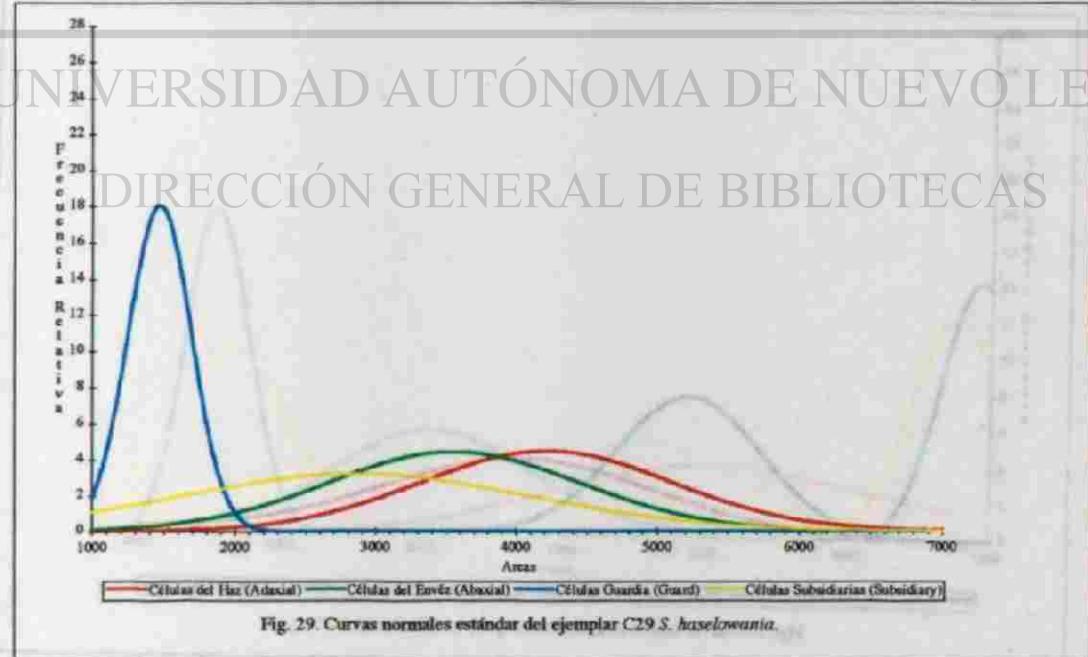
237.19 células/mm cuadrados

281.21 células/mm cuadrados

1.19 veces el promedio de las células del envés.

1.36 veces el promedio del ancho.

1.29 veces el promedio del ancho.

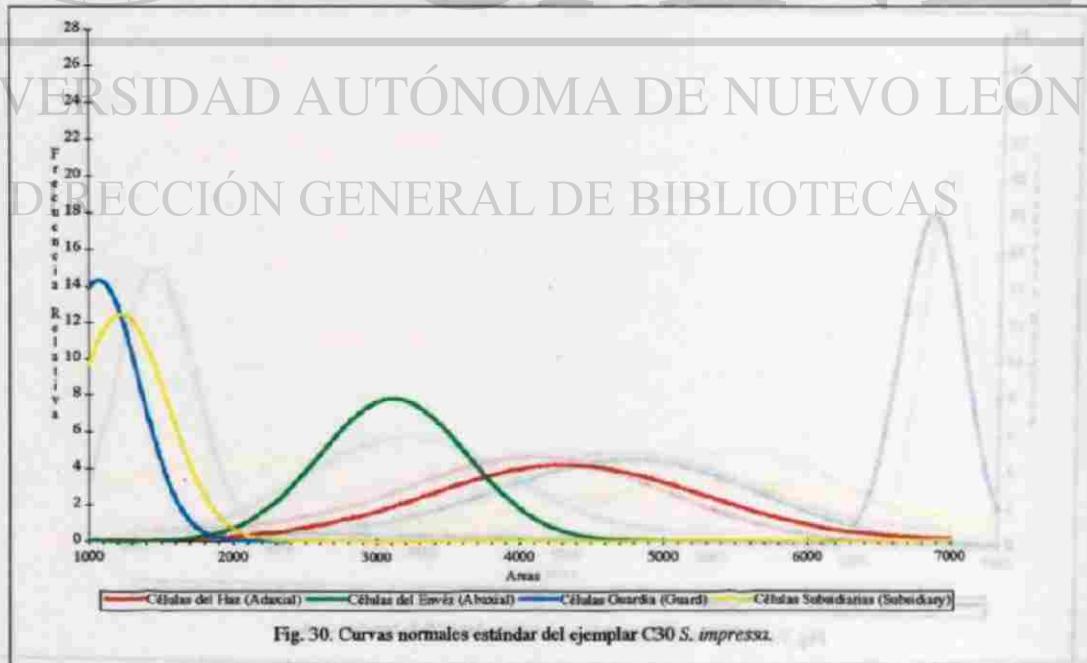




Cuadro 30. Datos estadísticos de C30 *S. impressa*.

C30 <i>S. impressa</i> (Col.) PI#200696-6 Colombia (?) Ecuador												
#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (L _a) Índice μm	Ancho (A _a) Índice μm	Área μm ²	Largo (L _b) Índice μm	Ancho (A _b) Índice μm	Área μm ²	Largo (L _c) Índice μm	Ancho (A _c) Índice μm	Área μm ²	Largo (L _d) Índice μm	Ancho (A _d) Índice μm	Área μm ²
1	0.50	53.85	0.63	70.00	3769.23	0.56	60.31	0.51	54.92	3312.28	0.38	40.92
2	0.45	48.46	0.63	70.00	3392.31	0.52	56.00	0.51	54.92	3075.69	0.38	40.92
3	0.45	48.46	0.65	70.00	3392.31	0.60	64.62	0.50	53.85	3479.29	0.39	32.31
4	0.50	53.85	0.58	62.46	3363.31	0.46	49.54	0.55	59.23	2954.20	0.40	43.08
5	0.68	73.23	0.68	73.23	5362.74	0.46	49.54	0.52	56.00	2774.15	0.30	32.31
6	0.50	53.85	0.50	53.85	2899.41	0.46	49.54	0.48	51.69	2560.76	0.30	32.31
7	0.48	51.69	0.70	75.38	3895.80	0.45	48.46	0.50	53.85	2609.47	0.40	43.08
8	0.50	53.85	0.68	73.23	3943.19	0.41	44.15	0.58	62.46	2757.92	0.40	43.08
9	0.50	53.85	0.65	70.00	3769.23	0.50	53.85	0.70	75.38	4059.17	0.42	45.23
10	0.50	53.85	0.55	59.23	3189.35	0.65	70.00	0.45	48.46	3392.31	0.38	40.92
11	0.70	75.38	0.65	70.00	5276.92	0.41	44.15	0.48	51.69	2282.41	0.30	32.31
12	0.62	66.77	0.70	75.38	5033.37	0.55	59.23	0.45	48.46	2870.41	0.35	37.69
13	0.58	62.46	0.68	73.23	4574.11	0.45	48.46	0.46	49.54	2400.71	0.40	43.08
14	0.60	64.62	0.60	64.62	4175.15	0.71	76.46	0.50	53.85	4117.16	0.40	43.08
15	0.62	66.77	0.60	64.62	4314.32	0.50	53.85	0.58	62.46	3363.31	0.40	43.08
16	0.50	53.85	0.72	77.54	4175.15	0.56	60.31	0.51	54.92	3312.28	0.30	32.31
17	0.50	53.85	0.70	75.38	4059.17	0.58	62.46	0.42	45.23	2825.18	0.40	43.08
18	0.50	53.85	0.80	86.15	4639.05	0.51	54.92	0.45	48.46	2661.66	0.40	43.08
19	0.50	53.85	0.60	64.62	3479.29	0.48	51.69	0.55	59.23	3061.77	0.35	37.69
20	0.75	80.77	0.60	64.62	5218.93	0.70	75.38	0.48	51.69	3896.80	0.30	32.31
21	0.70	75.38	0.70	75.38	5682.84	0.50	53.85	0.50	53.85	2899.41	0.35	37.69
22	0.45	48.46	0.55	59.23	2870.41	0.49	52.77	0.46	49.54	2614.11	0.35	37.69
23	0.70	75.38	0.62	66.77	5033.37	0.50	53.85	0.60	64.62	3479.29	0.35	37.69
24	0.70	75.38	0.70	75.38	5682.84	0.55	59.23	0.60	64.62	3827.22	0.30	32.31
25	0.80	86.15	0.70	75.38	6494.07	0.59	63.54	0.50	53.85	3421.30	0.30	32.31
Suma	1537.85	1745.69	107687.49		1416.15	1382.77	77988.27	8.91	59.54	6.42	691.38	26802.13
Promedio	61.51	69.83	4307.54		56.65	55.31	511.15	0.36	38.38	0.26	27.66	1070.62
D.E. (e)	11.45	7.07	962.07		8.61	6.67	511.66	0.04	4.74	0.05	5.10	278.58
												6.53
												5.59
												322.03

Promedio del área de las células del haz: 4307.50
 Promedio del área de las células del envés: 3119.53
 El promedio de las células del haz es:
 El promedio de las células del envés es:
 El promedio de las células guardia es:
 El promedio de las células subsidiarias es:



Cuadro 31. Datos estadísticos de C31 *S. platyceras*.

C31 *S. platyceras* (Cell) PH#200696-7 Colombia (I)

#	Células del Ház (Adaxial Cells)				Células del Envés (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subductadas (Subsidiary Cells)							
	Largo (L _a)	Ancho (A _a)	Área	Índice	Largo (L _b)	Ancho (A _b)	Área	Índice	Largo (L _g)	Ancho (A _g)	Área	Índice	Largo (L _s)	Ancho (A _s)	Área					
			μ_m	μ_s			μ_m	μ_s			μ_m	μ_s			μ_m	μ_s				
1	0.72	77.54	0.59	63.54	4926.67	0.52	56.00	0.51	54.92	3075.69	0.45	48.46	0.41	44.15	2139.76	0.45	48.46	0.40	43.08	2087.57
2	0.70	75.38	0.65	70.00	5276.92	0.60	64.62	0.46	49.54	3200.95	0.42	45.23	0.40	43.08	1948.40	0.48	51.69	0.35	37.69	1948.40
3	0.99	106.62	0.72	77.54	8266.79	0.58	62.46	0.40	43.08	2690.65	0.46	49.54	0.38	40.92	2027.27	0.35	37.69	0.31	33.38	1258.34
4	0.68	73.23	0.60	64.62	4731.83	0.64	68.92	0.50	53.85	3711.34	0.45	48.46	0.36	38.77	1878.82	0.39	42.00	0.30	32.31	1356.92
5	0.82	88.31	0.65	70.00	6181.54	0.61	63.69	0.40	43.08	2829.82	0.40	43.08	0.36	38.77	1670.06	0.40	43.08	0.36	38.77	1670.06
6	0.79	85.08	0.61	65.69	5588.90	0.70	75.38	0.42	45.23	3409.70	0.42	45.23	0.40	43.08	1948.40	0.40	43.08	0.32	34.46	1484.50
7	0.99	106.62	0.61	65.69	7003.81	0.75	80.77	0.47	50.62	4088.17	0.45	48.46	0.38	40.92	1983.19	0.41	44.15	0.37	39.85	1759.36
8	0.70	75.38	0.60	64.62	4871.01	0.50	53.85	0.46	49.54	2667.46	0.45	48.46	0.36	38.77	1878.82	0.35	52.23	0.32	34.46	2041.18
9	0.70	75.38	0.50	53.85	4059.17	0.59	63.54	0.42	45.23	2873.89	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.35	37.69	1623.67
10	0.61	65.69	0.59	63.54	4173.99	0.60	64.62	0.38	62.46	4055.98	0.42	43.23	0.40	43.08	1948.40	0.40	43.08	0.32	34.46	1484.50
11	0.61	65.69	0.59	63.54	4173.99	0.62	66.77	0.69	74.31	4961.47	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.35	37.69	2029.59
12	0.92	99.08	0.54	58.15	5761.70	0.70	75.38	0.60	64.62	4871.01	0.42	45.23	0.35	37.69	1704.85	0.48	51.69	0.38	40.92	2115.41
13	0.78	84.00	0.55	59.23	4975.38	0.71	76.46	0.50	53.85	4117.16	0.39	42.00	0.32	34.46	1447.38	0.58	62.46	0.32	34.46	2152.52
14	0.70	75.38	0.60	64.62	4871.01	0.62	66.77	0.50	53.85	3595.27	0.42	45.23	0.37	39.85	1802.27	0.52	56.00	0.39	42.00	2352.00
15	0.69	74.31	0.53	57.08	4241.25	0.60	64.62	0.50	53.85	3479.29	0.41	44.15	0.36	38.77	1711.81	0.58	62.46	0.38	40.92	2356.12
16	0.61	65.69	0.53	57.08	3749.51	0.56	60.31	0.45	48.46	2922.60	0.45	48.46	0.40	43.08	2087.57	0.45	48.46	0.35	37.69	1826.63
17	0.75	80.77	0.65	70.00	5653.85	0.50	53.85	0.42	45.23	2485.50	0.52	56.00	0.42	45.23	2532.92	0.45	48.46	0.38	40.92	1983.19
18	0.95	102.31	0.65	70.00	7161.54	0.57	61.38	0.40	43.08	2644.26	0.43	46.31	0.38	40.92	1895.05	0.45	48.46	0.36	38.77	1878.82
19	0.80	86.15	0.53	59.23	5102.96	0.60	64.62	0.54	58.15	3757.63	0.42	45.23	0.40	43.08	1948.40	0.45	48.46	0.40	43.08	2087.57
20	0.99	96.92	0.49	52.77	5114.56	0.56	60.31	0.35	59.25	3372.07	0.40	43.08	0.36	38.77	1670.06	0.42	45.23	0.38	40.92	1830.98
21	0.75	80.77	0.57	61.38	4957.99	0.63	70.00	0.41	44.15	3090.77	0.42	45.23	0.39	42.00	1899.09	0.45	48.46	0.33	35.54	1722.25
22	1.10	118.46	0.50	53.85	6378.70	0.66	64.62	0.43	46.31	2992.19	0.40	43.08	0.38	40.92	1762.84	0.58	62.46	0.42	45.23	2825.18
23	0.70	75.38	0.65	70.00	52.76	0.56	53.85	0.40	43.08	2319.53	0.42	45.23	0.34	38.77	1733.56	0.48	51.69	0.40	43.08	2226.75
24	0.86	92.62	0.49	48.46	4488.28	0.65	70.00	0.50	53.85	3769.23	0.48	51.69	0.39	42.00	2171.08	0.52	56.00	0.44	47.38	2653.54
25	0.67	72.15	0.60	64.62	4662.15	0.51	54.92	0.47	50.62	2779.95	0.45	48.46	0.35	37.69	1826.63	0.48	51.69	0.42	45.23	2338.08
Suma	2098.92	1569.08	131650.51		1619.69		1290.15	183891.47		1157.69		1010.15	46884.59		1251.38		980.00	41013.13		
Promedio	83.96	62.76	5295.95		64.79		51.61	3335.60		46.31		40.41	4.04		50.06		39.20	1972.53		
D.E. (s)	14.18	6.74	1066.47		7.33		7.79	608.51		3.26		2.58	221.46		6.85		4.08	392.27		



Cuadro 32. Datos estadísticos de C32 S. posadae.

C32 S. posadae (Cell) Pl#200696-8 Colombia (I)																			
#	Células del haz (Axial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)									
	Largo (Lh) Índice	Ancho (Ah) Índice	Área μm^2	Largo (Lx) Índice	Ancho (Ax) Índice	Área μm^2	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm^2	Largo (Ls) Índice	Ancho (As) Índice	Área μm^2							
1. 0.75	80.77	0.50	53.85	4349.11	0.62	66.77	0.52	56.00	3739.08	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.50	53.85	2899.41
2. 0.80	86.15	0.55	59.23	5102.96	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
3. 0.70	75.38	0.55	59.23	4465.09	0.68	73.23	0.52	56.00	4100.02	0.40	43.08	0.30	32.31	1391.72	0.30	32.31	0.40	43.08	1391.72
4. 0.60	64.62	0.50	53.85	3479.29	0.59	63.54	0.47	50.62	3216.02	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.42	45.23	1948.40
5. 0.95	102.31	0.50	53.85	5908.87	0.69	74.31	0.50	53.85	4001.18	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.40	43.08	1855.62
6. 0.85	91.54	0.50	53.85	4928.99	0.65	70.00	0.48	51.69	3618.46	0.35	37.69	0.30	32.31	1217.75	0.35	37.69	0.40	43.08	1623.67
7. 1.00	107.59	0.45	48.46	5218.93	0.55	59.23	0.45	48.46	2870.41	0.38	40.92	0.30	32.31	1322.13	0.50	53.85	0.30	32.31	1739.64
8. 0.75	80.77	0.45	48.46	3914.20	0.60	64.62	0.41	44.15	2853.02	0.42	45.23	0.30	32.31	1461.30	0.50	53.85	0.25	26.92	1449.70
9. 0.90	96.92	0.60	64.62	6262.72	0.48	51.69	0.45	48.46	2505.09	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.30	32.31	1739.64
10. 0.80	86.15	0.60	64.62	5566.86	0.49	52.77	0.52	56.00	2955.08	0.45	48.46	0.30	32.31	1565.68	0.42	45.23	0.35	37.69	1704.85
11. 0.60	64.62	0.50	53.85	3479.29	0.45	48.46	0.50	53.85	2609.47	0.38	40.92	0.20	21.54	881.42	0.45	48.46	0.25	26.92	1304.73
12. 0.50	53.85	0.50	53.85	2899.41	0.72	77.54	0.52	56.00	4342.15	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.45	48.46	2009.47
13. 0.50	53.85	0.40	43.08	2319.35	0.70	75.38	0.52	56.00	4221.54	0.45	48.46	0.32	34.46	1670.06	0.50	53.85	0.30	32.31	1739.64
14. 0.80	86.15	0.50	53.85	4639.05	0.52	56.00	0.50	53.85	3015.38	0.40	43.08	0.32	34.46	1484.50	0.50	53.85	0.25	26.92	1449.70
15. 0.70	75.38	0.50	53.85	4059.17	0.68	73.23	0.55	59.23	4337.51	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.30	32.31	1565.68
16. 0.90	96.92	0.50	53.85	5218.93	0.72	77.54	0.56	53.85	4175.15	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68
17. 0.80	86.15	0.40	43.08	3711.24	0.62	66.77	0.44	47.38	3163.83	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.25	26.92	1304.73
18. 0.60	64.62	0.45	48.46	3131.36	0.75	80.77	0.42	45.23	3633.25	0.40	43.08	0.28	30.15	1298.93	0.50	53.85	0.35	37.69	2029.59
19. 0.80	86.15	0.45	48.46	4175.15	0.72	77.54	0.52	56.00	4342.15	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1739.64
20. 1.10	118.46	0.45	48.46	5740.85	0.64	68.92	0.56	53.85	3711.24	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.40	43.08	2319.33
21. 0.80	86.15	0.50	53.85	4639.05	0.55	59.23	0.45	48.46	2870.41	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.50	53.85	2899.41
22. 0.65	70.00	0.40	43.08	3015.38	0.45	48.46	0.42	45.23	2191.95	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.40	43.08	2319.33
23. 0.72	77.54	0.50	53.85	4175.15	0.75	80.77	0.58	62.46	5044.97	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
24. 0.80	86.15	0.50	53.85	4639.05	0.47	50.62	0.57	61.38	3107.01	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.35	37.69	1826.63
25. 0.65	70.00	0.50	53.85	3769.23	0.78	84.00	0.51	54.92	4613.54	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.40	43.08	2087.57
Suma	2048.51		1319.23	10408.86		1660.62		1326.77	88448.18	10.03	1080.15	7.36	792.62	34262.60		1255.23		944.46	46035.50
Promedio	81.93		52.77	4326.54		66.42		53.07	8556.07	0.40	43.21	0.29	31.70	3511.37		49.41		37.78	1861.42
D.E. (σ)	13.74		5.60	982.74		11.03		4.83	739.38	0.03	3.00	0.03	2.80	165.93		5.88		8.00	454.88

Promedio del área de las células del haz:

4336.35

Promedio del área de las células del envés:

230.61 células/mm cuadrados

El promedio de las células del haz es:

53.85 células/mm cuadrados

El promedio de las células guardia es:

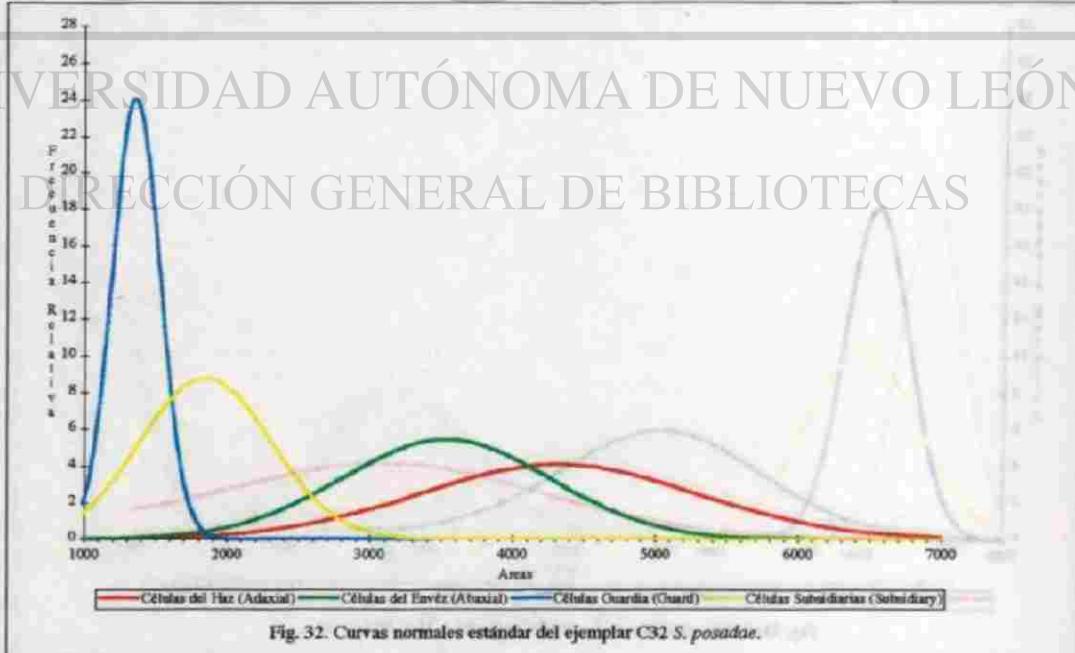
1.23 veces el promedio de las células del envés.

El promedio de las células subsidiaria es:

1.36 veces el promedio del ancho.

El promedio de las células de la guardia es:

1.31 veces el promedio del ancho.



Cuadro 33. Datos estadísticos de C33 *S. tigrina*.

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)			
	Largo (L _a)	Ancho (A _b)	Área	Largo (L _b)	Ancho (A _b)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área	
	Indice	μ_a	μ_b	μ_{ab}	Indice	μ_b	μ_{ab}	Indice	μ_g	μ_{ag}	Indice	μ_s	μ_{as}
1	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	53.85	2899.41	0.45	48.46	0.30	32.31
2	0.55	59.23	0.50	53.85	3189.35	0.50	53.85	0.40	43.08	2319.53	0.45	48.46	0.30
3	0.85	91.54	0.52	56.00	5126.15	0.45	48.46	0.46	49.54	2406.71	0.45	48.46	0.30
4	0.80	86.15	0.45	48.46	4175.15	0.64	68.92	0.50	53.85	3711.24	0.45	48.46	0.30
5	0.80	86.15	0.60	64.62	5566.86	0.42	45.29	0.31	33.38	1510.01	0.45	48.46	0.35
6	0.90	56.92	0.60	64.62	6262.72	0.50	53.85	0.44	47.38	2551.48	0.40	43.08	0.35
7	1.00	107.69	0.50	53.85	5798.82	0.70	75.38	0.60	64.62	4871.01	0.40	43.08	0.30
8	0.80	86.15	0.50	53.85	4659.05	0.58	62.48	0.41	44.15	2737.92	0.40	43.08	0.35
9	0.75	80.77	0.55	59.23	4784.02	0.41	44.15	0.50	53.85	2377.51	0.40	43.08	0.30
10	0.65	70.00	0.55	59.23	4146.15	0.55	59.23	0.50	53.85	3189.35	0.40	43.08	0.30
11	0.65	70.00	0.40	43.08	3015.38	0.48	51.69	0.32	34.46	1781.40	0.40	43.08	0.30
12	0.60	64.62	0.50	53.85	3479.29	0.48	51.69	0.40	43.08	2226.75	0.50	53.85	0.35
13	0.70	75.38	0.42	45.23	3409.70	0.55	59.23	0.50	53.85	3189.33	0.45	48.46	0.32
14	0.45	48.46	0.50	53.85	2609.47	0.56	60.31	0.38	46.92	2467.98	0.40	43.08	0.35
15	0.65	70.00	0.45	48.46	3392.31	0.41	44.15	0.58	62.46	2757.92	0.42	45.23	0.32
16	0.70	75.38	0.50	53.85	4059.17	0.46	49.54	0.41	44.15	2187.31	0.40	43.08	0.32
17	0.75	80.77	0.48	51.69	4175.15	0.62	66.77	0.40	43.08	2876.21	0.45	48.46	0.32
18	0.88	94.77	0.45	48.46	4592.66	0.49	49.54	0.35	37.69	1867.22	0.40	43.08	0.30
19	1.06	114.15	0.37	39.85	4548.59	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.30
20	0.82	88.31	0.50	53.85	4755.08	0.65	70.00	0.45	48.46	3392.31	0.40	43.08	0.30
21	0.70	73.38	0.50	53.85	4059.17	0.57	61.38	0.46	49.54	3040.90	0.40	43.08	0.35
22	0.87	93.69	0.40	43.08	4035.98	0.80	86.15	0.45	48.46	4175.15	0.40	43.08	0.25
23	0.72	77.54	0.50	53.85	4175.15	0.58	62.46	0.50	53.85	3363.31	0.40	43.08	0.30
24	0.82	88.31	0.41	44.15	3899.12	0.56	60.31	0.44	47.38	2857.66	0.42	45.23	0.32
25	0.70	75.38	0.55	59.23	4465.09	0.62	66.77	0.56	60.31	4026.70	0.45	48.46	0.35
Suma	2021.38			1313.85	10588.883		1448.46		1202.92	70421.98	10.54	1135.08	7.85
Promedio	80.86			52.55	4233.55		57.94		48.12	70421.98	0.42	45.40	0.31
D.E. (σ)	14.84			6.36	869.12		-10.63		8.19	815.48	0.03	3.04	0.02

Promedio del área de las células del haz: 4233.55

Promedio del área de las células del envéz: 2816.88

El promedio de las células del haz es:

El promedio de las células guarda es:

El promedio de las células subsidiarias es:

micras cuadradas

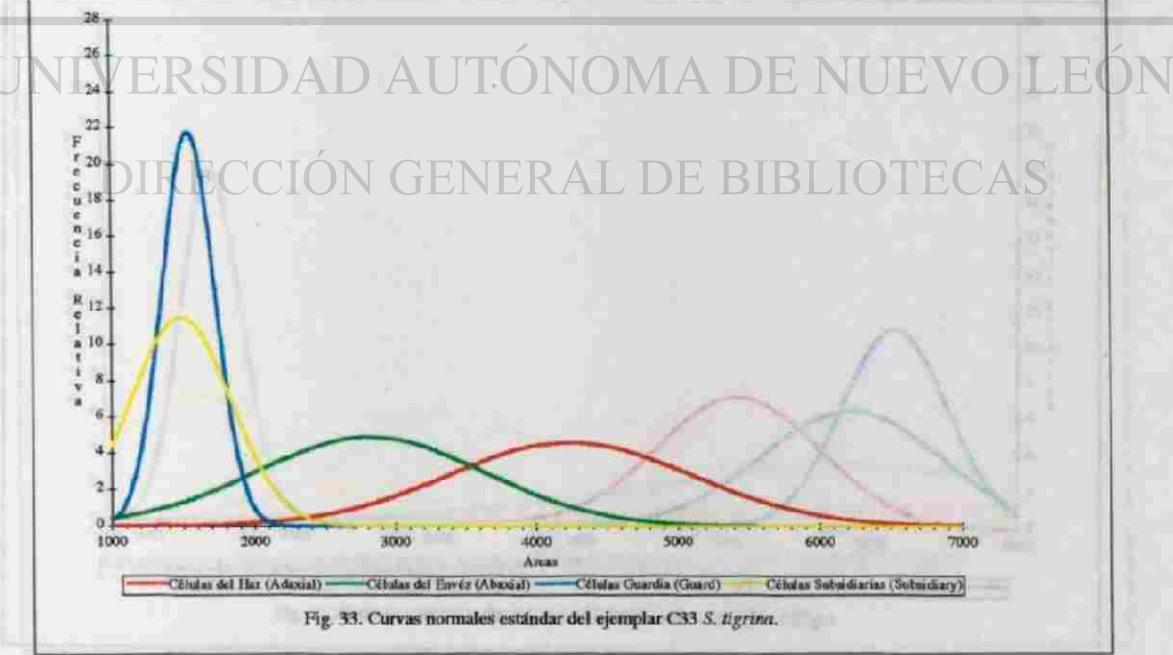
236.21 células/mm cuadrados

355.00 células/mm cuadrados

1.50 veces el promedio de las células del envéz.

1.34 veces el promedio del ancho.

1.25 veces el promedio del ancho.



Cuadro 34. Datos estadísticos de C-35 G. utriculata.

C35. *Grevillea utriculata* (NLS) PH230796-2. Més(1). NL: pared de la barranca cerca del camino; km8+20 W. Ceda Caballo; N 25°22.462°, W 100°12.066°

#	Células del haz (Adaxial Cells)				Células del envés (Abaxial Cells)				Células guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)							
	Largo (L _a)		Ancho (A _a)		Largo (L _b)		Ancho (A _b)		Largo (L _c)		Ancho (A _c)		Largo (L _d)		Ancho (A _d)					
	Índice	[μm]	Índice	[μm]	Índice	[μm]	Índice	[μm]	Índice	[μm]	Índice	[μm]	Índice	[μm]	Índice	[μm]				
1	0.51	54.92	0.50	53.85	2957.40	0.50	53.85	0.35	37.69	2029.59	0.40	43.08	0.41	44.15	1902.01	0.29	31.23	0.13	14.00	437.73
2	0.56	33.85	0.51	54.92	2957.40	0.50	53.85	0.54	58.15	3131.36	0.35	37.69	0.35	37.69	1426.71	0.32	34.46	0.14	15.08	519.57
3	0.60	64.62	0.56	60.31	3896.80	0.50	32.31	0.40	43.08	1391.72	0.40	43.08	0.40	43.08	1855.62	0.30	32.31	0.07	7.54	243.55
4	0.61	65.69	0.52	56.00	3678.77	0.35	37.69	0.50	53.85	2029.59	0.40	43.08	0.40	43.08	1855.62	0.30	32.31	0.20	21.54	695.86
5	0.50	53.85	0.53	57.08	3073.37	0.58	62.46	0.40	43.08	2690.65	0.45	48.46	0.39	42.00	2053.38	0.28	30.15	0.18	19.38	584.52
6	0.40	43.08	0.59	63.54	2737.04	0.42	45.23	0.42	45.23	2045.82	0.45	48.46	0.38	46.92	1983.19	0.40	43.08	0.10	10.77	463.91
7	0.45	48.46	0.71	76.46	3705.44	0.50	53.85	0.40	43.08	2319.53	0.47	50.62	0.40	43.08	2180.35	0.31	33.38	0.15	16.15	539.29
8	0.42	45.23	0.70	73.38	3409.76	0.30	32.31	0.50	53.85	1719.64	0.40	43.08	0.40	43.08	1855.62	0.34	36.62	0.11	11.83	483.75
9	0.43	46.31	0.65	70.00	3241.54	0.40	43.08	0.39	42.00	1809.23	0.41	44.15	0.41	44.15	1949.56	0.31	33.38	0.20	21.54	719.05
10	0.40	43.08	0.70	75.38	3247.34	0.50	53.85	0.50	53.85	2899.41	0.40	43.08	0.41	44.15	1902.01	0.40	43.08	0.16	17.23	742.25
11	0.45	48.46	0.51	54.92	2661.66	0.40	43.08	0.52	56.00	2412.31	0.39	42.00	0.31	35.58	1402.15	0.40	43.08	0.10	10.77	463.91
12	0.33	35.54	0.62	66.77	2572.88	0.30	32.31	0.60	64.62	2087.57	0.40	43.08	0.50	53.85	2319.53	0.32	34.46	0.16	17.23	598.80
13	0.41	44.15	0.52	36.00	2472.62	0.51	54.92	0.50	53.85	2957.40	0.39	42.00	0.26	28.00	1176.00	0.35	37.69	0.20	21.54	811.83
14	0.46	49.54	0.62	66.77	3307.64	0.29	31.23	0.42	45.23	1412.59	0.40	43.08	0.40	43.08	1855.62	0.35	37.69	0.20	21.54	811.83
15	0.39	42.00	0.55	59.23	2487.69	0.30	32.31	0.35	37.69	1217.75	0.40	43.08	0.35	37.69	1623.67	0.35	37.69	0.20	21.54	811.83
16	0.35	37.69	0.60	64.62	2435.50	0.35	37.69	0.32	54.46	1298.93	0.40	43.08	0.40	43.08	1855.62	0.36	32.31	0.20	21.54	695.86
17	0.50	53.85	0.62	66.77	3595.27	0.38	40.92	0.42	45.23	1850.98	0.40	43.08	0.40	43.08	1855.62	0.39	42.00	0.18	19.38	814.15
18	0.38	40.92	0.52	53.85	2203.55	0.42	45.23	0.40	43.08	1948.40	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.12	12.92	556.69
19	0.30	32.31	0.60	64.62	2087.57	0.56	60.31	0.30	32.31	1948.40	0.45	48.46	0.55	59.23	2870.41	0.30	32.31	0.11	11.83	382.72
20	0.36	38.77	0.50	53.85	2087.57	0.59	63.54	0.54	58.15	3695.01	0.34	36.62	0.28	30.15	1104.09	0.40	43.08	0.11	11.83	510.30
21	0.62	66.77	0.55	57.08	3810.98	0.30	32.31	0.50	53.85	1739.64	0.36	38.77	0.35	37.69	1461.30	0.35	37.69	0.20	21.54	811.83
22	0.50	53.85	0.50	53.85	2899.41	0.49	52.77	0.41	44.15	2329.96	0.40	43.08	0.40	43.08	1855.62	0.32	34.46	0.10	10.77	371.12
23	0.40	43.08	0.50	53.85	2319.53	0.52	56.00	0.40	43.08	2412.31	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.15	16.15	695.86
24	0.39	42.00	0.56	60.31	2382.92	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.40	43.08	1855.62	0.36	38.77	0.12	12.92	501.02
25	0.40	43.08	0.60	64.62	2783.43	0.43	46.91	0.51	54.92	2543.36	0.42	45.23	0.45	48.46	2191.95	0.40	43.08	0.20	21.54	927.81
Suma:	1191.08	1540.00	72963.02		1135.06		1178.15	53361.86		1085.54		1055.38	46078.55		930.46		408.15	15139.55		
Promedio:	47.64	61.60	2915.37		45.40		47.13	2111.11		43.42		42.22	1631.33		37.22		1633	605.58		
D.E. (σ)	9.04	7.32	558.03		10.51		8.39	616.26		3.15		6.36	342.41		4.57		4.56	175.83		

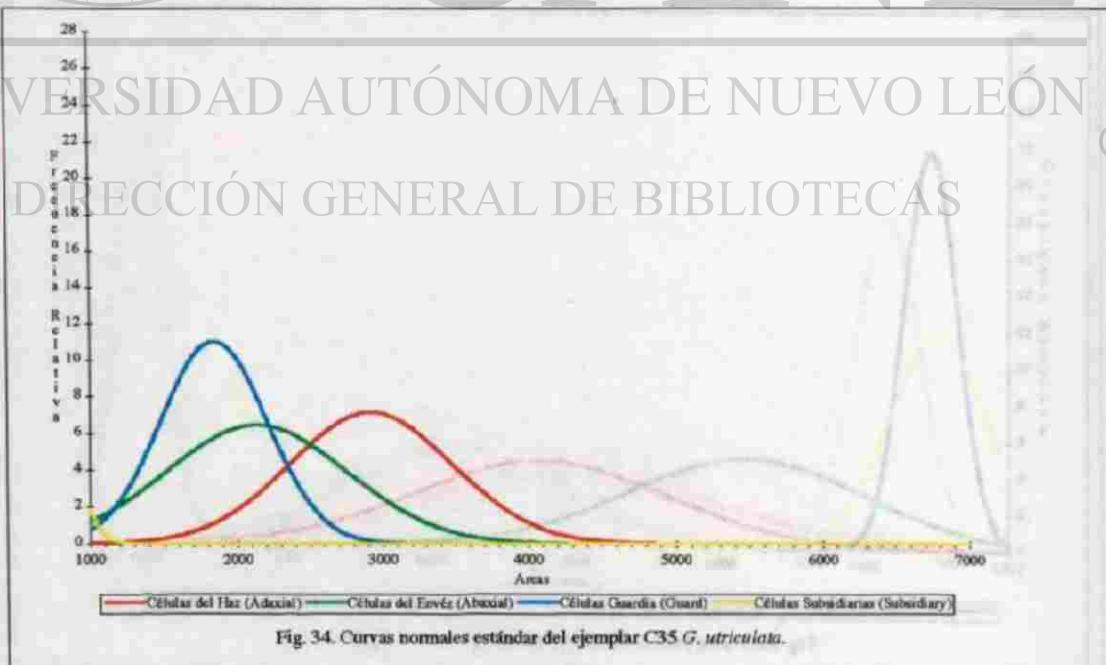
Promedio del área de las células del haz: 2915.52
 Promedio del área de las células del envés: 2134.47
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:

micras cuadradas 342.64 células/micra cuadrado
 micras cuadradas 408.50 células/micra cuadrado

1.37 veces el promedio de las células del envés.

1.03 veces el promedio del ancho.

2.28 veces el promedio del ancho.



Cuadro 35. Datos estadísticos de C36 *Spiranthes* sp. ign.

#	Células del haz (Axiostial Cells)				Células del Envés (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subadiarias (Subsiduary Cells)							
	Largo (L _a)	Ancho (A _a)	Área	Índice	Largo (L _b)	Ancho (A _b)	Área	Índice	Largo (L _g)	Ancho (A _g)	Área	Índice	Largo (L _s)	Ancho (A _s)	Área					
	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ	σ	μ					
1	1.03	110.92	0.98	105.54	11706.65	0.75	80.77	0.42	45.23	3453.25	0.45	48.46	0.36	38.77	1878.82	0.50	53.85	0.18	19.38	1043.79
2	1.10	118.46	0.90	96.92	11481.66	0.96	103.38	0.54	58.15	6012.21	0.45	48.46	0.36	38.77	1878.82	0.50	53.85	0.18	19.38	1043.79
3	1.00	107.69	0.80	86.15	9278.11	0.90	96.92	0.69	74.31	7202.13	0.45	48.46	0.36	38.77	1878.82	0.54	58.15	0.20	30.15	1755.56
4	0.99	106.62	0.90	96.92	10333.49	1.00	107.69	0.76	84.00	9046.15	0.43	48.46	0.36	38.77	1878.82	0.45	48.46	0.20	21.54	1043.79
5	1.00	107.69	0.85	91.54	9857.99	1.00	107.69	0.62	66.77	7190.53	0.40	43.08	0.35	37.69	1623.67	0.45	48.46	0.20	21.54	1043.79
6	1.11	119.54	0.85	91.54	10942.57	0.67	72.15	0.56	60.31	4351.43	0.42	45.23	0.35	37.69	1704.85	0.61	65.69	0.22	23.69	1556.46
7	1.08	116.31	0.89	94.77	11022.39	0.80	86.15	0.62	66.77	3752.43	0.38	49.92	0.35	37.69	1542.48	0.57	61.38	0.40	43.08	2644.26
8	0.90	96.92	0.72	77.54	7515.27	0.95	102.31	0.73	78.62	8042.96	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.19	20.46	881.42
9	0.89	93.85	0.89	93.85	9186.48	1.08	116.31	0.66	71.08	8266.79	0.40	43.08	0.32	34.46	1484.50	0.47	50.62	0.20	21.54	1090.18
10	1.02	109.85	0.70	75.38	8280.71	0.85	91.54	0.85	8379.29	0.40	43.08	0.35	37.69	1623.67	0.55	59.23	0.39	42.00	2487.69	
11	0.89	95.85	0.84	90.46	8670.39	0.78	84.00	0.78	75.38	6332.31	0.40	43.08	0.32	34.46	1484.50	0.52	56.00	0.18	19.38	1085.54
12	0.82	88.31	0.82	88.31	7798.25	0.92	99.08	0.65	70.00	6955.38	0.40	43.08	0.32	34.46	1484.50	0.50	53.85	0.30	32.31	1739.64
13	1.45	156.15	0.98	105.54	16480.23	0.69	74.31	0.69	5321.43	0.39	42.00	0.32	34.46	1447.38	0.57	61.38	0.30	32.31	1983.19	
14	1.30	140.00	0.86	92.62	12966.15	0.76	81.83	0.79	75.38	6169.94	0.42	45.23	0.35	37.69	1704.83	0.69	74.31	0.30	32.31	2400.71
15	0.98	105.54	0.71	76.46	8069.63	0.72	77.54	0.78	84.00	6313.23	0.42	45.23	0.35	37.69	1704.85	0.60	64.62	0.30	32.31	2087.57
16	1.61	173.38	0.80	86.15	14857.75	0.56	60.31	0.56	60.31	3437.02	0.41	44.15	0.35	37.69	1664.26	0.65	70.00	0.36	38.77	2713.85
17	1.43	154.00	1.05	113.08	17413.84	0.79	85.08	0.60	54.62	5497.28	0.42	45.23	0.33	35.54	1607.43	0.51	54.92	0.25	26.92	1478.70
18	0.95	102.51	0.80	86.15	8814.20	0.80	86.15	0.69	74.31	6401.89	0.47	50.62	0.34	36.62	1853.30	0.52	56.00	0.18	19.38	1085.54
19	1.20	129.25	1.01	108.77	14056.33	0.72	77.54	0.82	88.31	6847.24	0.49	52.77	0.31	33.38	1761.68	0.60	64.62	0.28	30.15	1948.40
20	1.45	156.15	1.05	113.08	17657.39	0.78	84.00	0.72	77.54	6313.23	0.45	48.46	0.31	33.38	1617.87	0.77	82.92	0.15	16.15	1339.53
21	1.10	118.46	0.90	96.92	11481.66	0.76	81.83	0.66	71.08	5817.37	0.44	47.38	0.33	35.54	1683.98	0.72	77.54	0.25	26.92	2087.57
22	1.64	176.62	1.08	116.31	20543.72	0.90	96.92	0.55	59.23	5740.83	0.39	42.00	0.37	39.85	1673.54	0.62	66.77	0.30	32.31	2157.16
23	1.50	161.54	0.70	75.38	12177.53	0.87	93.69	0.42	45.23	4257.77	0.49	52.77	0.38	40.92	2159.48	0.50	53.85	0.20	21.54	1159.76
24	1.02	109.85	0.85	91.54	10053.15	0.70	75.38	0.58	62.46	4708.64	0.50	53.85	0.38	40.92	2203.35	0.49	52.77	0.21	22.62	1193.40
25	1.00	107.69	0.80	86.15	9278.11	0.80	86.15	0.57	61.38	5288.52	0.42	45.23	0.34	36.62	1656.14	0.60	64.62	0.21	22.62	1461.30
Total	3064.92	2339.08	29000.341	2208.77	1740.31	154059.46	1158.77	932.62	43289.32	1496.92	668.77	40510.53								
Promedio	122.60	94.56	1640.34	388.35	49.61	4092.4	46.35	37.30	4092.4	59.88	26.75	1620.40								
D.E. (σ)	25.89	11.76	3470.54	19.08	11.70	1423.13	3.63	2.47	204.57	9.55	7.48	572.02								

Promedio del área de las células del haz:

1160.14

Promedio del área de las células del envés:

6162.38

El promedio de las células del haz es:

86.21 células/mm cuadrados

El promedio de las células del envés es:

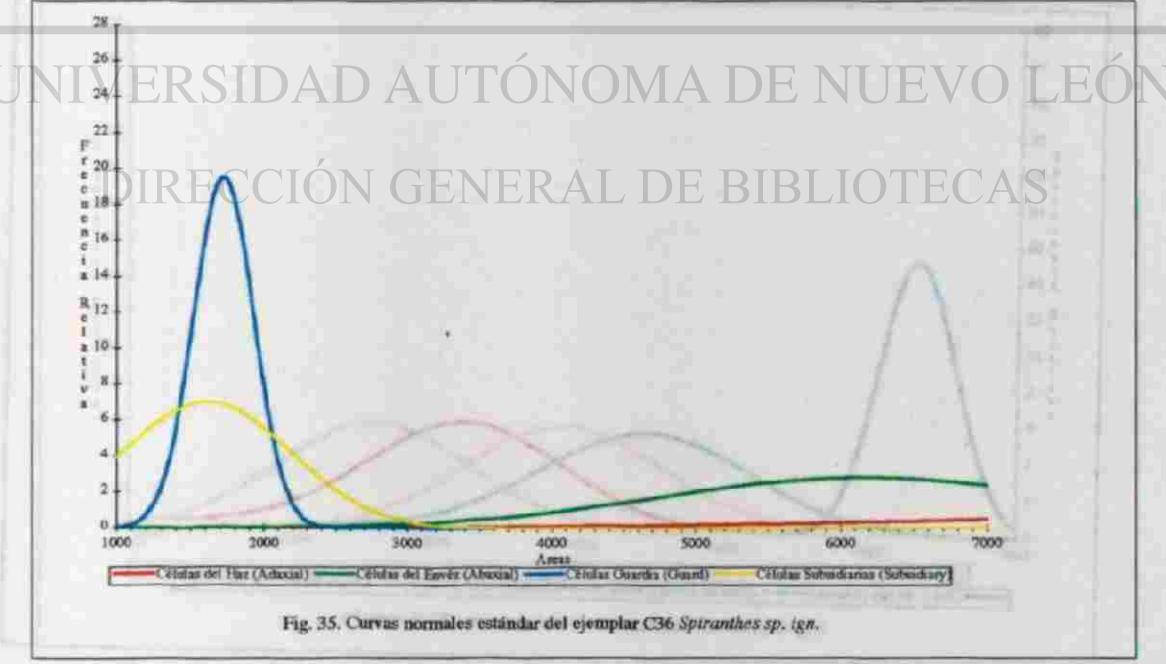
162.28 células/mm cuadrados

1.88 veces el promedio de las células del envés.

1.54 veces el promedio del ancho.

2.24 veces el promedio del ancho.

1.88 veces el promedio del ancho.



Cuadro 36. Datos estadísticos de G37 G. superba.

#	Células del haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (Ls) Índice	Ancho (As) Índice	Área μm²	Largo (Ls) Índice	Ancho (As) Índice	Área μm²	Largo (Ls) Índice	Ancho (As) Índice	Área μm²	Largo (Ls) Índice	Ancho (As) Índice	Área μm²
	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]
1	0.60	64.62	0.88	94.77	6123.55	0.70	78.38	0.49	52.77	3977.96	0.49	52.77
2	0.64	68.92	0.84	90.46	6234.89	0.35	37.69	0.60	64.62	2435.50	0.45	48.46
3	0.65	70.00	0.68	73.23	5126.15	0.35	37.69	0.60	64.62	2435.50	0.45	48.46
4	0.64	68.92	0.72	77.54	5344.19	0.67	72.15	0.31	54.92	3961.91	0.38	40.92
5	0.57	61.38	0.72	77.54	4759.67	0.45	48.46	0.55	59.23	2870.41	0.46	49.54
6	0.57	61.38	0.70	75.38	4627.45	0.61	65.69	0.55	59.23	3891.01	0.48	51.69
7	0.65	70.00	0.67	72.15	5050.77	0.55	59.23	0.55	59.23	3508.28	0.42	45.23
8	0.65	70.00	0.70	75.38	5276.92	0.62	66.77	0.55	59.23	3954.79	0.41	44.15
9	0.79	85.08	0.55	59.23	5039.17	0.60	64.62	0.50	53.85	3479.29	0.41	44.15
10	0.58	62.46	0.33	57.08	3565.11	0.39	42.00	0.56	60.31	2332.92	0.40	48.08
11	0.62	66.77	0.58	62.46	4170.51	0.52	56.00	0.54	58.15	3256.61	0.44	47.38
12	0.78	84.00	0.54	58.15	4884.92	0.61	65.69	0.60	64.62	4244.73	0.40	43.08
13	0.70	75.38	0.60	64.62	4871.01	0.71	76.46	0.50	53.85	4171.16	0.44	47.38
14	0.70	75.38	0.63	67.85	5114.56	0.60	64.62	0.50	53.85	3479.29	0.38	40.92
15	0.70	75.38	0.63	70.00	3276.92	0.40	48.46	0.42	45.23	2240.06	0.46	49.54
16	0.76	81.85	0.56	60.31	4955.95	0.44	47.38	0.56	60.31	2857.66	0.45	48.46
17	0.50	53.85	0.52	56.00	3015.38	0.80	86.15	0.56	60.31	5195.74	0.47	50.62
18	0.69	74.31	0.60	64.62	4801.42	0.70	75.38	0.50	4059.17	0.39	42.00	0.33
19	0.70	75.38	0.57	61.38	4627.45	0.73	78.62	0.50	53.85	4233.14	0.43	46.31
20	0.80	86.11	0.57	61.38	5288.92	0.45	48.46	0.58	62.46	3026.98	0.59	42.00
21	0.82	88.31	0.47	50.52	4469.73	0.50	53.85	0.55	59.23	3189.53	0.43	46.31
22	0.80	86.15	0.56	60.31	5195.74	0.62	66.77	0.60	64.62	4314.32	0.46	49.54
23	0.72	77.54	0.55	59.23	4592.66	0.54	58.15	0.58	73.23	4258.65	0.40	48.08
24	0.81	87.23	0.46	49.54	4321.28	0.70	75.38	0.45	48.46	3463.25	0.45	48.46
25	0.72	77.54	0.50	53.85	4175.15	0.87	93.69	0.40	43.08	4035.98	0.42	45.23
Suma	1848.00		1653.08	120889.07		1563.85		1443.08	89211.30		1138.77	
Promedio	73.92		66.12	4844.54		62.63		57.72	720.23		46.35	
D.E. (σ)	9.33		11.35	683.75		14.76		6.61	732.37		3.41	

Promedio del área de las células del haz:

millas cuadradas 206.80 células/mm cuadrados

Promedio del área de las células del envés:

millas cuadradas 280.23 células/mm cuadrados

El promedio de las células del haz es:

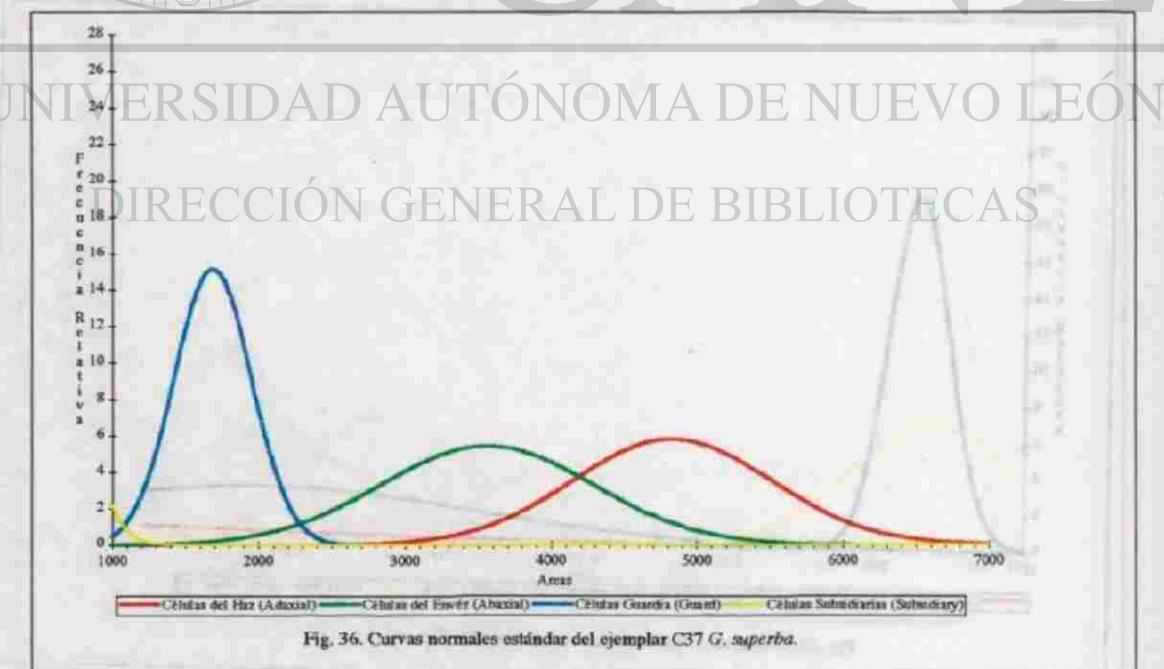
1.36 veces el promedio de las células del envés.

El promedio de las células guarda es:

1.27 veces el promedio del ancho.

El promedio de las células subsidiarias es:

4.07 veces el promedio del ancho.

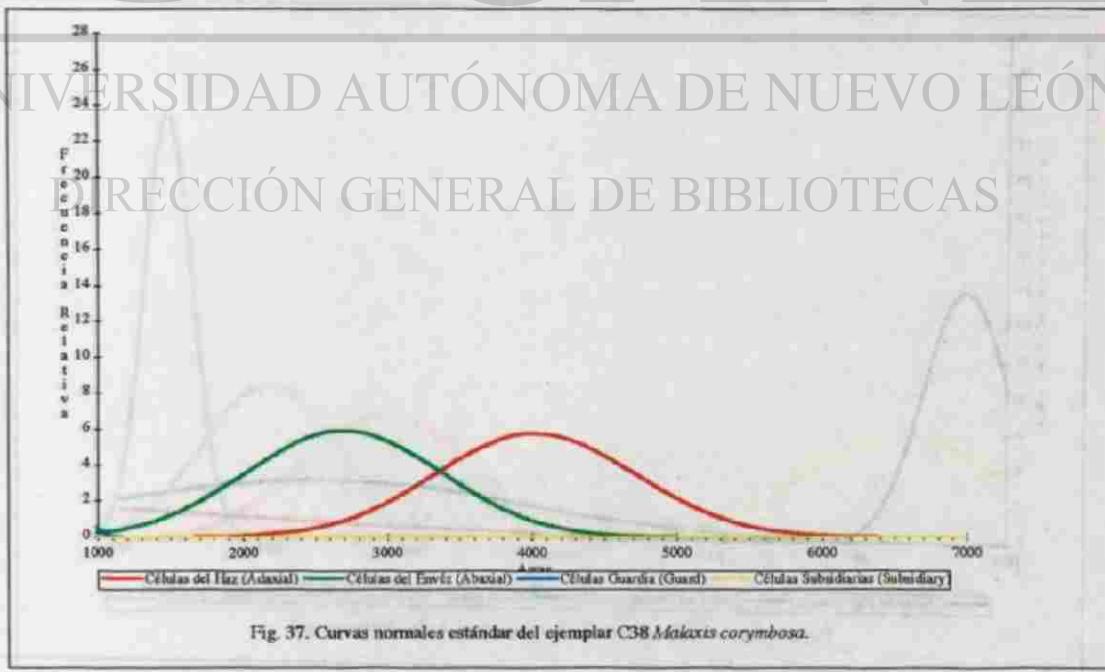


Cuadro 37. Datos estadísticos de C38 *Malaxis corymbosa*.

C38 <i>Malaxis corymbosa</i> (NL50) PU#230796-5 Mex. NLJ en la barranca cerca de camino, km#20 W. Cola Caballo; N 23 22.462; W 100 12.069																		
Células del haz (Adaxial Cells)		Células del Envés (Abaxial Cells)		Células Guardia (Guard Cells)		Células Subsidiarias (Subsidiary Cells)												
#	Largo (L _a) Indice	Ancho (A _a) Indice	Área μm ²	Largo (L _b) Indice	Ancho (A _b) Indice	Área μm ²	Largo (L _c) Indice	Ancho (A _c) Indice	Área μm ²									
1	0.65	70.00	0.57	61.98	4296.92	0.51	54.92	0.46	49.54	2720.80	0.32	34.46	0.20	21.54	742.25	0.00	0.00	0.00
2	0.78	84.00	0.48	51.69	4342.15	0.60	64.62	0.46	49.54	5200.95	0.24	25.85	0.20	21.54	556.69	0.00	0.00	0.00
3	0.70	75.38	0.52	56.00	4221.54	0.79	83.08	0.42	45.25	5848.09	0.30	32.31	0.13	14.00	452.31	0.00	0.00	0.00
4	0.70	75.38	0.56	60.31	4546.27	0.60	64.62	0.30	32.31	2087.57	0.30	32.31	0.13	14.00	452.31	0.00	0.00	0.00
5	0.72	77.54	0.50	53.85	4175.15	0.50	53.85	0.38	40.92	2203.55	0.21	22.62	0.11	11.85	267.91	0.00	0.00	0.00
6	0.69	74.31	0.49	52.77	3921.16	0.50	53.85	0.48	51.69	2783.43	0.30	32.31	0.20	21.54	695.86	0.00	0.00	0.00
7	0.71	76.46	0.49	52.77	4034.82	0.56	60.31	0.37	39.85	2403.08	0.25	26.92	0.16	17.25	463.91	0.00	0.00	0.00
8	0.74	79.69	0.51	54.92	4076.95	0.35	37.69	0.35	37.69	1420.71	0.29	31.23	0.20	21.54	672.66	0.00	0.00	0.00
9	0.64	68.92	0.64	68.92	4750.39	0.40	43.08	0.40	43.08	1855.62	0.31	33.38	0.20	21.54	719.05	0.00	0.00	0.00
10	0.69	74.31	0.50	53.85	4001.18	0.51	54.92	0.42	45.25	2484.21	0.31	33.38	0.18	19.38	647.15	0.00	0.00	0.00
11	0.72	77.54	0.50	53.85	4175.15	0.38	40.92	0.38	40.92	1674.70	0.26	28.00	0.12	12.92	361.85	0.00	0.00	0.00
12	0.80	86.15	0.45	48.46	4175.15	0.53	57.08	0.31	53.38	1905.40	0.28	36.15	0.21	22.62	681.94	0.00	0.00	0.00
13	0.48	51.69	0.60	64.62	3340.12	0.59	63.54	0.38	40.92	2600.19	0.30	32.31	0.20	21.54	695.86	0.00	0.00	0.00
14	0.47	50.62	0.55	59.23	2997.99	0.70	75.38	0.40	43.08	3247.34	0.28	30.15	0.20	21.54	649.47	0.00	0.00	0.00
15	0.72	77.54	0.57	61.38	4759.67	0.50	53.85	0.36	38.77	2087.57	0.30	32.31	0.21	22.62	730.65	0.00	0.00	0.00
16	0.75	80.77	0.56	60.31	4871.01	0.48	51.69	0.42	45.25	2338.08	0.25	26.92	0.19	20.46	550.89	0.00	0.00	0.00
17	0.74	79.69	0.47	50.62	4033.66	0.79	85.08	0.40	43.08	3664.85	0.20	21.54	0.09	9.69	208.76	0.00	0.00	0.00
18	0.68	73.24	0.38	40.92	2996.83	0.52	56.00	0.46	49.54	2774.15	0.29	31.23	0.21	22.62	706.30	0.00	0.00	0.00
19	0.52	56.00	0.38	40.92	2291.69	0.72	77.54	0.40	43.08	3340.12	0.30	32.31	0.20	21.54	695.86	0.00	0.00	0.00
20	0.70	75.38	0.50	53.85	4059.17	0.49	52.77	0.48	51.69	2727.76	0.30	32.31	0.22	23.69	765.44	0.00	0.00	0.00
21	0.58	53.85	0.50	53.85	2899.41	0.54	58.15	0.42	45.25	2630.34	0.24	25.85	0.19	20.46	528.85	0.00	0.00	0.00
22	0.56	60.31	0.53	54.92	3312.28	0.62	66.77	0.50	53.85	3595.27	0.21	22.62	0.17	18.31	414.04	0.00	0.00	0.00
23	0.80	86.15	0.50	53.85	4639.05	0.80	64.62	0.42	45.25	2922.60	0.30	32.31	0.19	20.46	661.06	0.00	0.00	0.00
24	0.82	88.31	0.48	51.69	4364.83	0.56	60.31	0.50	53.85	3247.34	0.26	28.00	0.19	20.46	572.92	0.00	0.00	0.00
25	0.73	78.62	0.59	63.54	4955.10	0.59	63.54	0.55	59.23	3763.43	0.21	22.62	0.20	21.54	487.10	0.00	0.00	0.00
Suma	1831.83	1578.46	100777.62		1500.15		1122.15		6752.21	733.38		484.62		14381.06		0.00	0.00	0.00
Promedio	73.27	55.34	4031.10		60.01		44.89		43.08	29.34		19.38		14381.06		0.00	0.00	0.00
D.E. (t)	10.75		6.50		11.90		6.42		671.25	3.95		5.85		154.08		0.00	0.00	0.00

Promedio del área de las células del haz: 4031.10
 Promedio del área de las células del envés: 2701.06
 El promedio de las células del haz es:
 El promedio de las células guarda es:
 El promedio de las células subsidiarias es:

miétra cuadradas 248.07 células/mm cuadrados
 miétra cuadradas 370.22 células/mm cuadrados
 1.49 veces el promedio de las células del envés.
 1.51 veces el promedio del ancho.
 #666 veces el promedio del ancho.



Cuadro 38. Datos estadísticos de C39 *Spiranthes* sp. ign.

C56 *Spiranthes* sp. nov. (NLST) PUE00796-1; México: NL; en la barranca aserrada de camino, km=20 W. Cola Caballo; N 25°22'46"; W 100°12'06"; elevación ca. 1550m.

Células del H2A (Axial Cells)				Células del Envés (Axial Cells)				Células Guardia (Guard Cells)				Células Subductadas (Subsidiary Cells)				
Largo (Lh)	Ancho (Ah)	Área	Largo (Lc)	Ancho (Ac)	Área	Largo (Lg)	Ancho (Ag)	Área	Largo (La)	Ancho (As)	Área	Índice	μm	Índice	μm	
Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm	
1	0.74	79.69	1.00	107.69	8582.25	0.78	84.00	0.70	75.38	6332.31	0.40	43.08	0.34	36.62	1577.28	0.6
2	1.29	138.92	0.90	96.92	13464.83	0.49	52.77	0.79	85.08	4489.44	0.40	43.08	0.35	37.69	1623.67	0.42
3	0.88	94.77	1.06	114.15	10818.27	0.89	86.15	0.52	56.00	4824.61	0.44	47.38	0.31	33.38	1381.92	0.72
4	0.86	92.62	0.90	96.92	8976.57	0.84	90.46	0.62	66.77	6040.05	0.44	47.38	0.30	32.31	1530.89	0.6
5	1.00	107.69	0.90	96.92	10437.87	0.79	85.08	0.60	64.62	5497.28	0.44	47.38	0.30	32.31	1330.89	0.36
6	0.72	77.54	0.70	73.38	5845.21	0.70	75.38	0.64	68.92	5193.74	0.40	43.08	0.32	34.46	1484.50	0.42
7	0.82	88.31	0.70	75.38	6657.04	0.99	106.62	0.50	53.85	5740.83	0.40	43.08	0.29	31.23	1345.33	0.5
8	1.15	123.85	0.80	86.15	10669.82	0.80	86.15	0.70	75.38	6494.67	0.40	43.08	0.29	31.23	1345.33	0.3
9	0.90	96.92	1.00	107.69	10437.87	0.60	64.62	0.60	64.62	4175.15	0.39	42.00	0.30	32.31	1356.92	0.5
10	0.83	89.38	0.80	86.15	7700.83	0.61	63.69	0.49	52.77	3406.33	0.50	53.85	0.25	26.92	1449.70	0.7
11	1.25	134.62	0.86	92.62	12467.45	0.75	80.77	0.60	64.62	5218.93	0.50	53.85	0.22	23.69	1275.74	0.54
12	0.99	96.92	0.70	75.38	7306.51	0.79	75.38	0.68	73.23	5520.47	0.40	43.08	0.34	32.31	1391.72	0.31
13	1.18	127.08	0.90	96.92	12316.68	0.98	105.54	0.48	51.69	5455.93	0.40	43.08	0.31	33.38	1488.11	0.55
14	1.10	118.46	0.89	95.85	11354.08	0.69	74.31	0.69	74.31	5521.63	0.41	44.15	0.31	33.38	1474.06	0.51
15	1.00	107.69	0.80	86.15	9278.11	0.85	91.54	0.80	86.15	7886.39	0.35	37.69	0.30	32.31	1217.75	0.75
16	0.79	85.08	0.79	85.08	7238.08	0.82	88.31	0.98	105.54	9139.86	0.38	40.92	0.26	28.00	1145.83	0.59
17	1.20	129.23	0.99	106.62	13777.99	0.83	89.38	0.80	86.15	7709.83	0.39	42.00	0.28	30.15	1266.46	0.56
18	0.90	96.92	0.70	75.38	7306.51	0.80	86.15	0.70	75.38	6494.67	0.40	43.08	0.30	32.31	1391.72	0.6
19	0.90	86.15	0.85	91.54	7886.39	0.59	63.54	0.70	75.38	4789.82	0.36	38.77	0.28	30.15	1169.04	0.66
20	1.00	107.69	0.70	75.38	8118.34	0.69	74.31	0.65	76.00	5201.34	0.40	43.08	0.29	31.23	1345.33	0.5
21	0.70	75.38	0.70	73.38	5686.84	0.50	53.85	0.71	76.46	4171.16	0.40	43.08	0.30	32.31	1391.72	0.49
22	1.10	118.46	0.80	86.15	10205.97	0.63	70.00	0.75	80.77	5653.85	0.30	32.31	0.22	23.69	7644.64	0.64
23	0.80	86.15	0.71	76.46	6387.45	0.64	68.92	0.85	91.54	6309.11	0.30	32.31	0.20	21.54	695.86	0.55
24	0.80	86.15	0.60	64.62	5566.86	0.60	64.62	0.47	50.62	3270.53	0.30	32.31	0.20	21.54	695.86	0.39
25	0.80	86.15	0.60	64.62	5566.86	0.78	84.00	0.60	64.62	5827.69	0.30	32.31	0.19	20.46	661.06	0.35
Suma		2501.85		2191.54	23429.64		1967.54		1789.83	140144.62		1055.38		7542.92	32152.11	
Promedio		101.77		87.99	3620.05		78.70		71.59	293.00		42.22		30.20	1250.00	
D.E. (σ)		18.89		13.37	2513.52		13.84		13.40	1347.42		5.73		4.68	286.99	

Propiedades del área de los sólidos del bar

micas cuadradas 111.48 cíñium en cuadros

Promotion del seu de l'ús col·lectiu del seu

126-39 9/1984 1000000

El cumulo de las ofertas del black

El resultado de los cálculos del modelo

El promedio de las óctavas del haz es

ESTE - 4 LAS COTIZACIONES ESTÁNDARIZADAS SIGUEN A LOS COSTOS DE MATERIALES

El promedio de las células guarda es 1.40 veces el promedio del ancho.

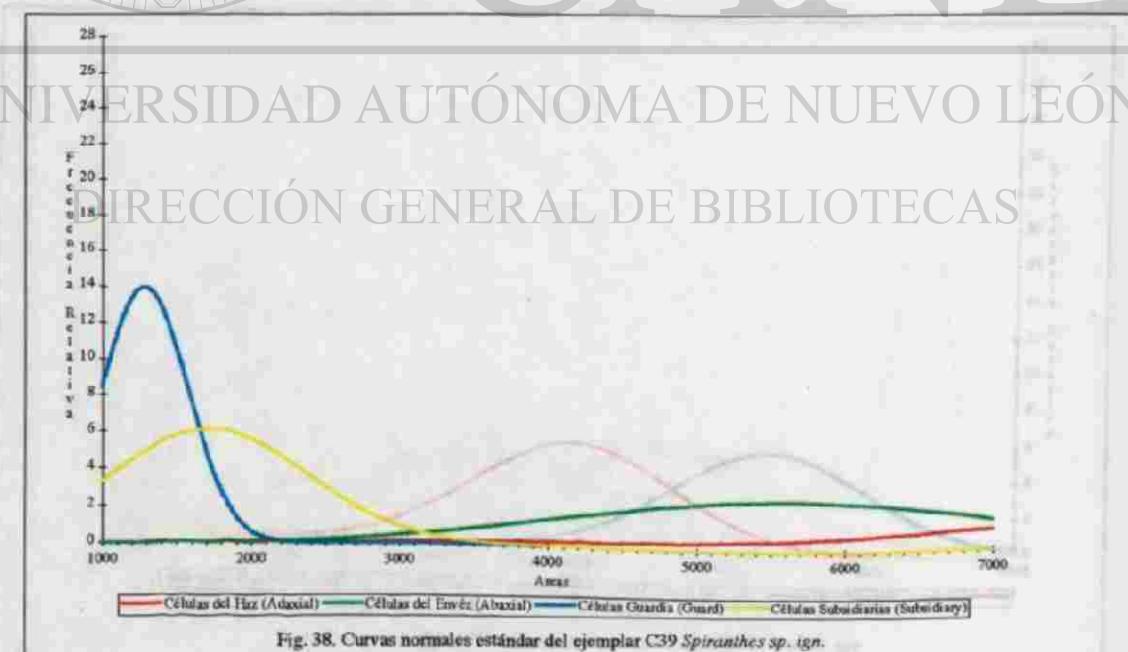


Fig. 38. Curvas normales estándar del ejemplar C39 *Spiranthes* sp. ign.

Cuadro 39. Datos estadísticos de C45 S. saccata.

C45 S. saccata (Méj.) P#300396-1 El Salvador y norte incl. Guatemala y México (1)																				
#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (Lh) Índice	Ancho (Ah) Índice	Área μm²	Largo (Lc) Índice	Ancho (Ac) Índice	Área μm²	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm²	Largo (La) Índice	Ancho (Aa) Índice	Área μm²								
1	0.71	76.46	0.30	52.31	2470.30	0.58	62.46	0.30	32.31	2017.99	0.45	48.46	0.32	34.46	1670.06	0.70	73.38	0.52	56.00	4221.54
2	0.60	64.62	0.28	30.15	1948.40	0.75	80.77	0.30	32.31	2909.47	0.47	50.62	0.27	29.98	1471.74	0.35	37.69	0.30	32.31	1217.73
3	0.80	86.15	0.32	34.46	2968.99	0.56	53.85	0.37	35.85	2145.56	0.45	48.46	0.22	23.69	1148.17	0.60	64.62	0.40	43.08	2783.43
4	0.75	80.77	0.38	40.92	3303.32	0.80	86.15	0.28	36.15	2597.87	0.50	53.85	0.30	32.31	1739.64	0.60	64.62	0.25	26.92	1799.64
5	0.70	75.38	0.40	43.08	3247.34	0.50	53.85	0.42	45.23	2435.50	0.48	51.69	0.28	30.15	1558.72	0.70	73.38	0.38	40.52	3084.97
6	0.60	64.62	0.35	37.69	2455.50	0.45	48.46	0.30	32.31	1563.68	0.48	51.69	0.30	32.31	1670.06	0.68	73.38	0.70	75.48	5520.47
7	0.52	56.00	0.45	48.46	2713.85	0.70	73.38	0.40	43.08	3247.34	0.45	48.46	0.30	32.31	1563.68	0.65	70.00	0.38	40.92	2864.61
8	0.71	76.46	0.45	48.46	3705.44	0.62	66.77	0.38	40.92	2732.40	0.48	51.69	0.30	32.31	1670.06	0.60	64.62	0.28	30.15	1948.40
9	0.85	91.54	0.40	43.08	3943.19	0.50	53.85	0.40	43.08	2319.53	0.48	51.69	0.30	32.31	1670.06	0.58	62.46	0.28	30.15	1883.46
10	0.75	80.77	0.40	43.08	3479.29	0.45	48.46	0.48	51.69	2955.09	0.46	49.54	0.28	30.15	1493.77	0.50	53.85	0.25	26.92	1449.70
11	0.63	70.00	0.40	43.08	3015.38	0.40	43.08	0.45	48.46	2087.57	0.42	45.23	0.28	30.15	1363.88	0.60	64.62	0.28	30.15	1948.40
12	0.62	66.77	0.45	48.46	3235.74	0.58	62.46	0.40	43.08	2990.65	0.45	48.46	0.30	32.31	1563.68	0.70	73.38	0.30	32.31	2435.30
13	0.65	70.00	0.48	51.69	3618.46	0.35	37.69	0.40	43.08	1623.67	0.45	48.46	0.32	34.46	1670.06	0.70	73.38	0.50	53.85	4059.17
14	0.56	60.31	0.38	40.92	2467.98	0.60	64.62	0.28	36.15	1948.40	0.46	49.54	0.30	32.31	1600.47	0.78	84.00	0.42	45.23	3795.38
15	0.65	70.00	0.40	43.08	3015.38	0.55	59.23	0.38	40.92	2423.90	0.30	53.85	0.32	34.46	1853.62	0.68	73.38	0.52	56.00	4100.92
16	0.75	80.77	0.40	43.08	3479.29	0.55	57.69	0.40	43.08	1623.67	0.45	48.46	0.28	30.15	1461.30	0.42	45.23	0.40	43.08	1948.40
17	0.65	70.00	0.30	32.31	2261.54	0.60	64.62	0.32	34.46	2226.75	0.45	48.46	0.28	30.15	1461.30	0.58	62.46	0.28	30.15	1883.46
18	0.55	59.23	0.40	43.08	2551.48	0.55	59.23	0.40	43.08	2551.48	0.45	48.46	0.30	32.31	1563.68	0.62	66.77	0.30	32.31	2157.16
19	0.78	84.00	0.40	43.08	3618.46	0.50	53.85	0.40	43.08	2319.53	0.45	48.46	0.22	23.69	1148.17	0.60	64.62	0.28	30.15	1948.40
20	0.74	79.69	0.48	51.69	4119.48	0.42	45.23	0.38	40.92	1850.98	0.45	48.46	0.28	30.15	1461.30	0.50	53.85	0.22	23.69	1275.74
21	0.70	75.38	0.40	43.08	3247.34	0.50	53.85	0.30	32.31	1739.64	0.42	45.23	0.30	32.31	1461.30	0.50	53.85	0.22	23.69	1275.74
22	0.58	62.46	0.48	49.54	3094.75	0.45	48.46	0.55	59.23	2870.48	0.40	43.08	0.28	30.15	1298.93	0.50	53.85	0.38	40.92	2203.35
23	0.70	75.38	0.38	40.92	3084.97	0.70	73.38	0.28	30.15	2273.14	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.40	43.08	3015.38
24	0.48	51.69	0.35	37.69	1948.40	0.68	73.38	0.25	26.92	1971.60	0.48	51.69	0.30	32.31	1670.06	0.52	56.00	0.50	53.85	3015.38
25	0.68	73.23	0.42	45.23	3512.28	0.38	40.92	0.28	36.15	1293.99	0.45	48.46	0.28	30.15	1461.30	0.62	66.77	0.50	53.85	3995.27
Suma	1801.69	1058.62	76288.06		1449.54		980.00	5611.80	11.38	1225.54	7.21	776.46	38094.74		1607.85		995.08	63375.85		
Promedio	72.07	42.34	3091.31		57.58		39.20	3.11	0.46	49.02	0.29	31.06	1502.74		64.31		39.80	2615.01		
D.E. (r)	9.80	5.82	581.20		13.25		7.86	467.09	0.03	2.80	0.02	2.67	170.35		10.61		12.80	1103.68		

Promedio del área de las células del haz: 3051.52
 Promedio del área de las células del envés: 2224.47
 El promedio de las células del haz es:
 El promedio de las células guarda es:
 El promedio de las células subsidiarias es:

enreas cuadradas
micas cuadradas

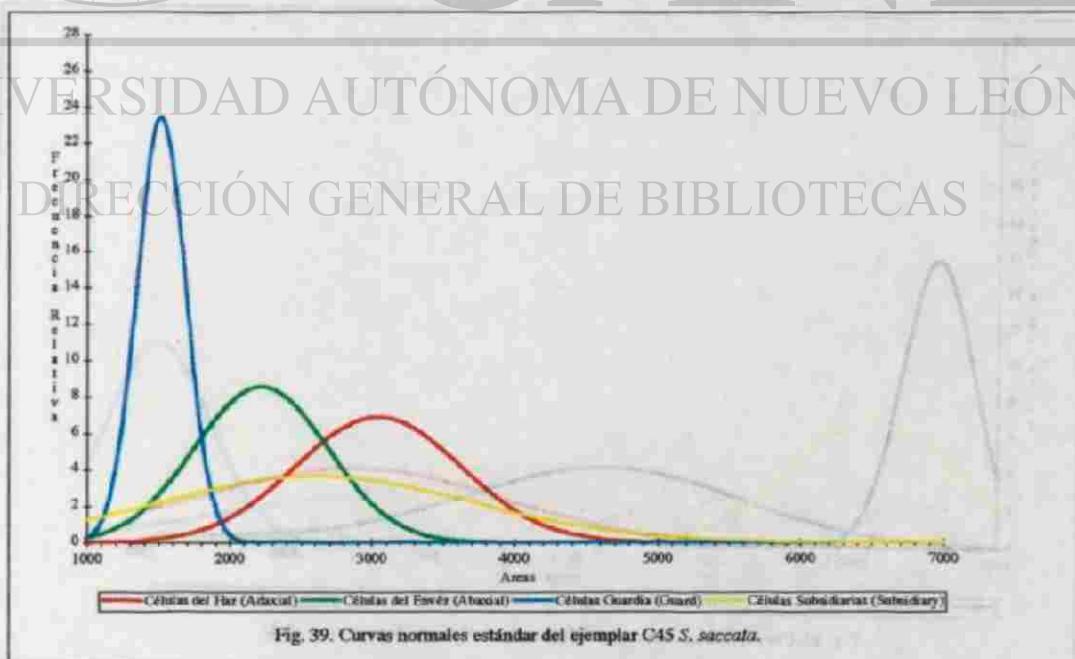
327.71 células/mm cuadrados

449.54 células/mm cuadrados

1.37 veces el promedio de las células del envés:

1.58 veces el promedio del ancho.

1.62 veces el promedio del ancho.



Cuadro 41. Datos estadísticos de C47 *S. embreei*.

C47. *S. embreei*. (Edr) PI#S00996-3 Ecuador (1)

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Célula guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área	Largo (L _b)	Ancho (A _b)	Área	Largo (L _c)	Ancho (A _c)	Área	Largo (L _d)	Ancho (A _d)	Área								
	Índice	[μm]	[μm] ²	Índice	[μm]	[μm]	Índice	[μm]	[μm]	Índice	[μm]	[μm]								
1	0.80	86.15	0.69	74.31	6401.89	0.60	64.62	0.56	60.31	3896.80	0.42	45.23	0.31	33.38	1510.01	0.36	38.77	0.39	42.00	1628.31
2	0.70	75.38	0.59	63.54	4789.82	0.40	43.08	0.49	52.77	2273.14	0.45	48.46	0.31	33.38	1617.87	0.31	33.38	0.31	33.38	1114.53
3	0.72	77.54	0.70	75.38	5845.21	0.45	48.46	0.51	54.92	2061.66	0.43	46.31	0.41	44.15	2044.66	0.41	44.15	0.32	34.46	1521.61
4	0.72	77.54	0.65	70.00	5427.69	0.50	53.85	0.50	53.85	2899.41	0.35	57.69	0.31	33.38	1258.34	0.40	43.08	0.22	23.69	1020.50
5	0.60	64.62	0.51	54.92	3348.88	0.68	73.23	0.55	59.23	4337.51	0.45	48.46	0.38	40.92	1583.19	0.37	39.83	0.31	33.38	1330.23
6	0.80	86.15	0.69	74.31	6401.89	0.90	96.92	0.60	64.62	6262.72	0.50	53.85	0.45	48.46	2609.47	0.40	43.08	0.30	32.31	1391.72
7	0.60	64.62	0.62	66.77	4314.32	0.60	64.62	0.50	53.85	3479.29	0.42	45.23	0.38	40.92	1850.98	0.46	49.54	0.30	32.31	1600.47
8	0.70	75.38	0.85	91.54	6900.59	0.60	64.62	0.60	64.62	4175.15	0.40	43.08	0.35	37.69	1623.67	0.48	51.69	0.31	33.38	1725.73
9	0.90	96.92	0.60	64.62	6262.72	0.70	75.38	0.55	59.23	4465.09	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.33	35.54	1722.25
10	0.62	66.77	0.70	73.38	3033.37	0.40	43.08	0.42	45.23	1948.40	0.48	51.69	0.33	35.54	1837.06	0.39	42.00	0.35	37.69	1583.08
11	0.70	75.38	0.60	64.62	4871.01	0.75	80.77	0.48	51.69	4175.15	0.40	43.08	0.35	37.69	1623.67	0.35	37.69	0.30	32.31	1217.75
12	0.80	86.15	0.73	78.62	6773.02	0.48	51.69	0.49	52.77	2727.76	0.45	48.46	0.25	26.92	1304.73	0.47	50.62	0.30	32.31	1695.27
13	0.70	75.38	0.65	70.00	5276.92	0.70	75.38	0.58	62.46	4708.64	0.46	49.54	0.25	26.92	1333.73	0.55	59.23	0.49	32.77	3125.56
14	0.80	86.15	0.58	62.46	5381.30	0.32	34.46	0.50	53.85	1855.62	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.38	40.92	2203.53
15	0.70	75.38	0.65	70.00	5276.92	0.49	52.77	0.50	53.85	2841.42	0.41	44.15	0.25	26.92	1188.76	0.50	33.85	0.35	37.69	2029.59
16	0.85	91.54	0.79	85.08	7787.81	0.60	64.62	0.56	62.46	4035.98	0.40	43.08	0.36	32.31	1391.72	0.48	51.69	0.50	33.85	2793.40
17	0.90	96.92	0.60	64.62	6362.72	0.45	48.46	0.45	48.46	2348.52	0.49	52.77	0.28	30.15	1591.20	0.55	59.23	0.30	32.31	1913.61
18	0.60	64.62	0.64	68.92	4453.49	0.52	56.00	0.51	54.92	3075.69	0.48	51.69	0.25	26.92	1391.72	0.40	43.08	0.30	32.31	1391.72
19	0.51	54.92	0.58	62.46	3430.58	0.50	53.85	0.40	43.08	2319.53	0.41	44.15	0.22	23.69	1046.11	0.47	50.62	0.30	32.31	1635.27
20	0.33	59.23	0.48	51.69	3061.77	0.91	98.00	0.68	73.23	7176.61	0.36	38.77	0.25	26.92	1043.79	0.50	33.85	0.31	33.38	1797.63
21	0.62	66.77	0.58	62.46	4170.51	0.70	75.38	0.48	51.69	3896.80	0.38	40.92	0.22	23.69	969.56	0.40	43.08	0.33	35.54	1590.89
22	0.65	70.00	0.71	76.46	5352.31	0.50	53.85	0.53	57.08	3073.37	0.40	43.08	0.30	32.31	1391.72	0.43	46.31	0.35	37.69	1745.44
23	0.70	75.38	0.55	59.23	4465.09	0.42	45.23	0.50	53.85	2435.50	0.41	44.15	0.28	30.15	1331.41	0.59	42.00	0.30	32.31	1356.92
24	0.75	80.77	0.65	70.00	5653.83	0.32	34.46	0.58	40.92	1410.27	0.48	51.69	0.31	33.38	1725.73	0.40	43.08	0.31	33.38	1438.11
25	0.81	87.25	0.60	64.62	5656.43	0.32	56.00	0.50	53.85	3015.38	0.40	43.08	0.28	30.15	1298.93	0.39	42.00	0.31	33.38	1402.15
Suma	1916.92		1722.00	132780.12		1508.77		1382.77	85405.42	10.63	1144.77	7.62	820.62	37751.45		1164.15		890.62	41845.41	
Promedio	76.66		68.89	5213.37		6035		55.31	2735.42	0.43	45.79	0.30	32.82	1510.08		46.57		35.62	1673.82	
D.E. (σ)	11.17		8.87	1145.81		16.88		7.11	1340.46	0.04	4.34	0.06	6.20	361.89		6.66		6.36	471.95	

Promedio del área de las células del haz: 5311.20
 Promedio del área de las células del envés: 3419.82
 El promedio de las células del haz es 1.35 veces el promedio de las células del envés.
 El promedio de las células guardia es 1.40 veces el promedio del ancho.
 El promedio de las células subsidiarias es 1.31 veces el promedio del ancho.

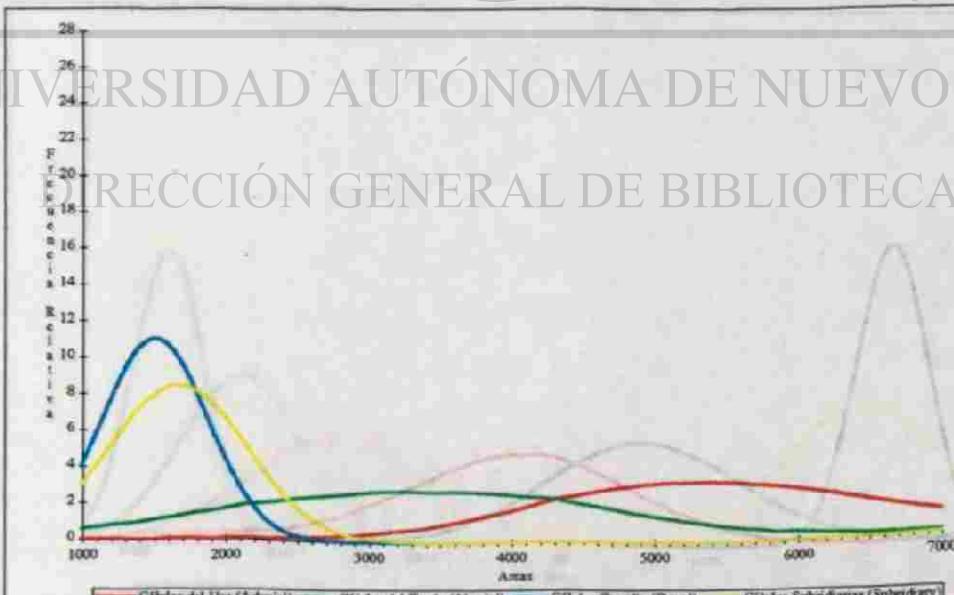
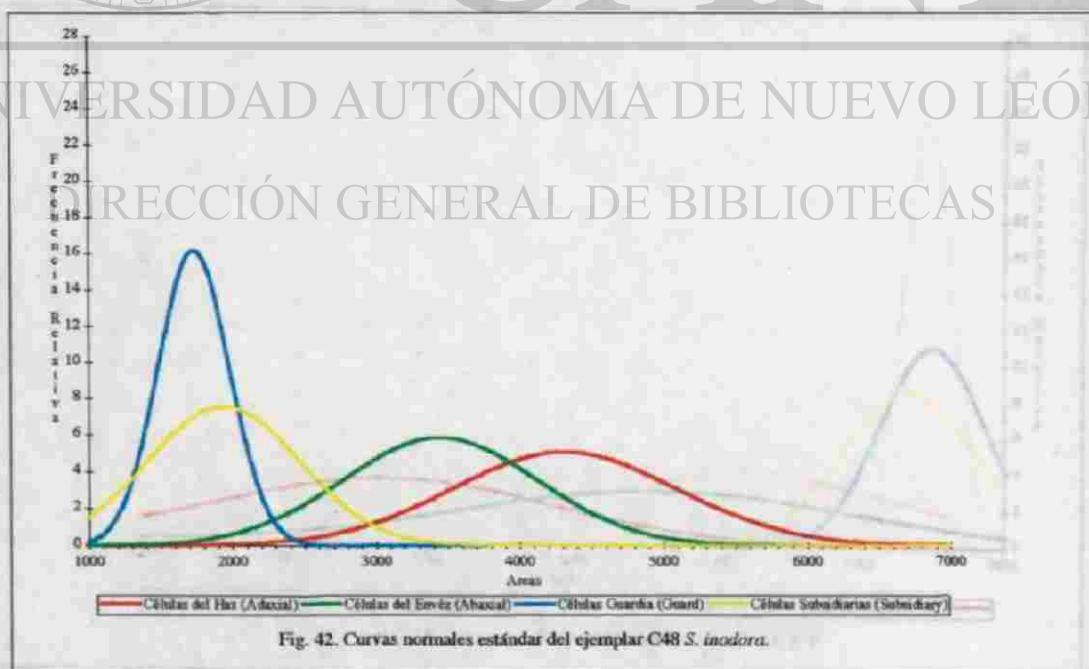


Fig. 41. Curvas normales estándar del ejemplar C47 *S. embreei*.

Cuadro 42. Datos estadísticos de C48 *S. inodora*.

C48 <i>S. inodora</i> Pl#300996-4 Colombia, Perú, y norte en América Central, pero no en México												
Células del haz (Axiomal Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subductarias (Subsidary Cells)			
#	Largo (L _a) Índice μ _m	Ancho (A _a) Índice μ _m	Área μ _m ²	Largo (L _e) Índice μ _m	Ancho (A _e) Índice μ _m	Área μ _m ²	Largo (L _g) Índice μ _m	Ancho (A _g) Índice μ _m	Área μ _m ²	Largo (L _s) Índice μ _m	Ancho (A _s) Índice μ _m	Área μ _m ²
1	0.80	86.15	0.45	48.46	4175.15	0.46	49.54	2454.09	0.40	43.08	0.30	32.31
2	0.75	80.77	0.50	53.85	4349.11	0.69	74.31	0.51	54.92	4081.21	0.40	43.08
3	0.64	68.92	0.40	43.08	2968.99	0.65	70.00	0.55	59.23	4146.15	0.50	53.85
4	0.70	75.58	0.40	43.08	3247.34	0.60	64.62	0.44	47.38	3061.77	0.40	43.08
5	0.70	73.38	0.50	53.85	4629.17	0.50	53.85	0.64	68.92	3711.24	0.41	44.15
6	0.70	73.38	0.50	53.85	4039.17	0.81	87.25	0.40	43.08	3757.63	0.40	43.08
7	0.50	53.85	0.60	64.62	3479.29	0.60	64.62	0.50	53.85	3479.29	0.48	51.69
8	0.80	86.15	0.50	53.85	4635.05	0.60	64.62	0.50	53.85	3479.29	0.42	45.23
9	0.94	101.23	0.52	56.00	5668.92	0.64	68.92	0.60	64.62	4453.49	0.40	43.08
10	0.68	73.23	0.50	53.85	3943.19	0.61	65.69	0.51	54.92	3608.02	0.42	45.23
11	0.70	73.38	0.50	53.85	4039.17	0.60	64.62	0.50	53.85	3479.29	0.48	51.69
12	0.68	73.23	0.50	53.85	3943.19	0.79	73.58	0.51	54.92	4140.35	0.45	48.46
13	0.70	75.58	0.49	52.77	3977.99	0.61	65.69	0.45	48.46	3183.55	0.45	48.46
14	0.65	70.00	0.51	54.92	3844.61	0.46	49.54	0.40	43.08	2133.96	0.40	43.08
15	1.08	116.31	0.50	53.85	6262.72	0.40	43.08	0.55	59.23	2551.48	0.46	49.54
16	0.90	96.92	0.42	45.23	4383.90	0.40	43.08	0.60	64.62	2783.43	0.45	48.46
17	0.68	73.23	0.48	51.69	3785.47	0.65	70.00	0.50	53.85	3769.23	0.38	40.92
18	0.80	86.15	0.51	54.92	4731.83	0.64	68.92	0.62	66.77	4601.94	0.45	48.46
19	0.84	90.46	0.50	53.85	4871.01	0.48	51.69	0.60	64.62	3340.12	0.50	53.85
20	0.80	86.15	0.59	68.54	5474.08	0.45	48.46	0.45	48.46	2348.52	0.38	40.92
21	0.87	93.49	0.50	53.85	5044.97	0.50	53.85	0.46	49.54	2667.46	0.44	47.38
22	0.85	91.54	0.41	44.15	4041.77	0.60	64.62	0.58	62.46	4035.98	0.35	37.69
23	0.80	86.15	0.41	44.15	3864.02	0.67	72.15	0.55	59.23	4273.73	0.45	48.46
24	0.85	91.54	0.55	59.23	5421.89	0.75	80.77	0.40	43.08	3479.29	0.46	46.54
25	0.80	86.15	0.40	43.08	3711.24	0.48	51.69	0.58	62.46	3228.78	0.48	51.69
Suma	2060.77		1307.38	107947.27	1566.92		1384.92	86249.27	10.81	1164.15	8.67	933.69
Promedio	82.75		52.30	4311.96	62.68		55.40	4451.44	0.43	46.57	0.35	37.35
D.E. (σ)	12.90		5.88	784.75	11.64		7.65	679.85	0.04	43.1	0.04	3.94
										246.58		10.63
												6.45
												525.58

Promedio del área de las células del haz: 4317.89
 Promedio del Área de las células del envés: 3449.97
 El promedio de las células del haz es 1.25 veces el promedio de las células del envés.
 El promedio de las células guardia es 1.25 veces el promedio del ancho.
 El promedio de las células subductarias es 1.47 veces el promedio del ancho.



Cuadro 43. Datos estadísticos de C49 *S. hernandezii*.

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subductarias (Subsidary Cells)													
	Largo (L _a) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _e) Índice	Ancho (A _e) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²											
	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]											
1	0.55	59.23	0.52	56.00	3316.92	0.50	53.85	0.35	37.69	2029.59	0.50	53.85	0.25	26.92	1449.70	0.40	33.08	0.36	32.31	1391.72			
2	0.45	48.46	0.45	48.46	2348.52	0.45	48.46	0.39	42.00	2083.38	0.50	53.85	0.32	34.46	1855.62	0.51	54.92	0.32	34.46	1892.73			
3	0.55	59.23	0.42	45.23	2679.03	0.53	57.08	0.33	35.54	2028.43	0.50	53.85	0.30	32.31	1739.64	0.40	45.08	0.30	32.31	1391.72			
4	0.42	45.23	0.45	48.46	2191.93	0.52	56.00	0.39	42.00	2352.00	0.44	47.38	0.30	32.31	1380.89	0.40	43.08	0.30	32.31	1391.72			
5	0.48	51.69	0.55	59.23	3061.77	0.66	71.08	0.35	37.69	2679.05	0.41	44.15	0.34	36.62	1616.71	0.40	43.08	0.28	30.15	1294.93			
6	0.49	52.77	0.50	53.85	2841.42	0.41	44.15	0.31	33.38	1474.06	0.40	43.08	0.32	34.46	1484.50	0.42	45.28	0.28	30.15	1363.88			
7	0.50	53.85	0.50	53.85	2899.41	0.45	48.46	0.35	37.69	1826.63	0.42	45.21	0.30	32.31	1461.30	0.38	40.92	0.26	28.00	1145.83			
8	0.75	80.77	0.48	51.69	4175.15	0.48	51.69	0.42	45.23	2338.08	0.46	49.54	0.40	43.08	2153.96	0.45	48.46	0.36	38.77	1878.82			
9	0.65	70.00	0.41	44.15	3050.77	0.35	37.69	0.35	37.69	1420.71	0.40	43.08	0.31	33.38	1438.11	0.48	51.69	0.20	21.54	1113.37			
10	0.62	66.77	0.38	49.92	2732.40	0.68	73.23	0.40	43.08	3154.56	0.41	44.15	0.25	26.92	1188.76	0.45	48.46	0.28	30.15	1461.30			
11	0.58	62.46	0.50	53.85	3363.31	0.50	53.85	0.40	43.08	2319.33	0.45	48.46	0.32	34.46	1670.06	0.55	59.28	0.26	28.00	1658.46			
12	0.50	53.85	0.35	37.69	2029.59	0.50	53.85	0.38	40.92	2203.55	0.42	45.23	0.32	34.46	1558.72	0.42	45.23	0.31	33.38	1510.01			
13	0.50	53.85	0.35	37.69	2029.59	0.61	65.69	0.39	42.00	2759.08	0.45	48.46	0.32	34.46	1670.06	0.45	48.46	0.30	32.31	1565.68			
14	0.63	70.00	0.40	43.08	3013.58	0.50	53.85	0.31	33.38	1797.63	0.45	48.46	0.36	38.77	1878.82	0.50	53.85	0.33	35.54	1913.61			
15	0.52	56.00	0.40	43.08	2412.31	0.41	44.15	0.38	40.92	1866.91	0.45	48.46	0.31	33.38	1617.87	0.46	49.54	0.32	34.46	1707.17			
16	0.48	51.69	0.40	43.08	2226.75	0.52	56.00	0.33	34.46	1929.85	0.40	43.08	0.30	32.31	1391.72	0.41	44.15	0.30	32.31	1426.51			
17	0.68	73.23	0.40	43.08	3154.56	0.40	43.08	0.40	43.08	1853.62	0.50	53.85	0.40	43.08	2319.33	0.50	53.85	0.31	33.38	1797.63			
18	0.70	73.38	0.30	32.31	2455.50	0.55	59.23	0.40	43.08	2551.48	0.46	49.54	0.31	33.38	1853.82	0.50	53.85	0.28	30.15	1623.67			
19	0.68	60.00	0.30	33.38	2203.55	0.55	59.23	0.40	43.08	2351.48	0.41	44.15	0.30	32.31	1426.51	0.46	49.54	0.33	35.54	1760.32			
20	0.62	66.77	0.65	70.00	4673.85	0.45	48.46	0.41	44.15	2139.76	0.40	43.08	0.32	34.46	1484.50	0.40	43.08	0.35	37.69	1623.67			
21	0.40	43.08	0.60	64.92	2783.03	0.39	42.00	0.40	43.08	1889.23	0.48	43.08	0.30	32.31	1391.72	0.45	48.46	0.30	32.31	1565.68			
22	0.41	44.15	0.41	44.15	1949.56	0.36	38.77	0.34	36.62	1419.55	0.39	42.00	0.31	33.38	1402.15	0.49	52.77	0.30	32.31	1704.85			
23	0.50	53.85	0.42	45.23	2455.50	0.48	51.69	0.30	32.31	1670.06	0.40	43.08	0.31	33.38	1438.11	0.50	53.85	0.30	32.31	1739.64			
24	0.60	64.62	0.30	53.85	3479.29	0.44	47.38	0.44	47.38	2245.30	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72			
25	0.50	53.85	0.50	53.85	2699.48	0.50	53.85	0.39	42.00	2261.54	0.42	45.23	0.30	32.31	1461.30	0.49	43.08	0.25	26.92	1159.76			
Suma	1451.69	1221.23	70458.94		1312.77	1001.54	52639.05	10.84	1167.38	7.87	847.54	39655.78		1204.00	799.08	38478.62							
Promedio	58.03	48.85	5.71		52.51	40.06	4.06		0.43	46.70	0.31	33.90	3.90		48.16	31.96	1589.14						
D.E. (σ)	10.64		8.67		658.03		8.94		4.10		430.94		3.94		5.65		249.09		5.01		3.54		282.48

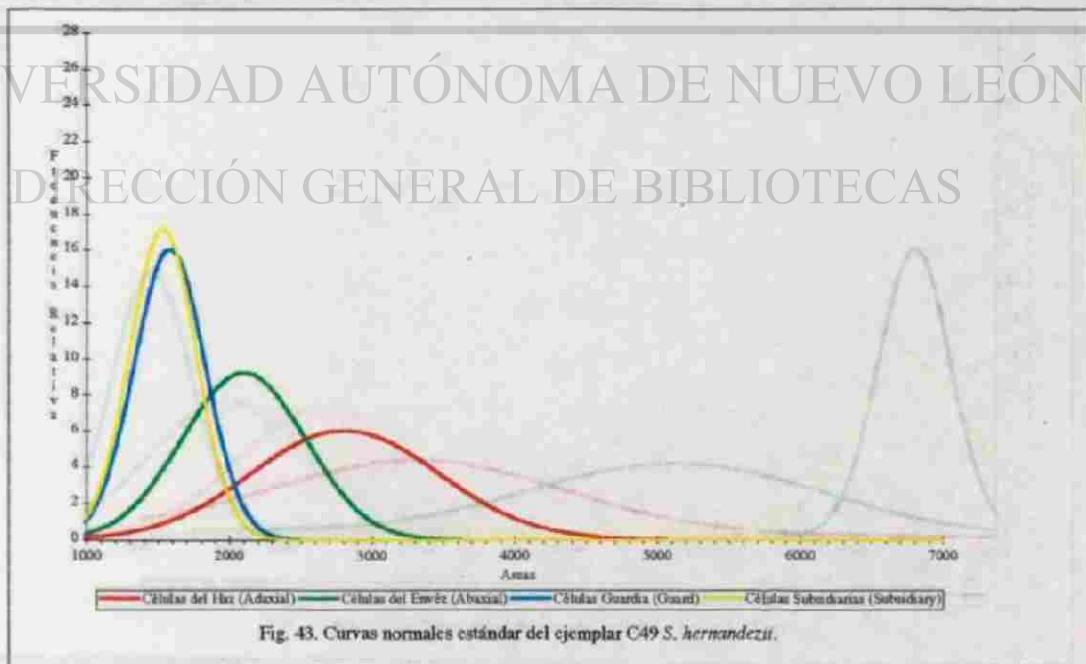
Promedio del área de las células del haz: 2817.16
 Promedio del área de las células del envés: 2106.36
 El promedio de las células del haz es:
 El promedio de las células gramática:
 El promedio de las células subductarias es:

534.97 células/mm cuadrados
 474.75 células/mm cuadrados

1.34 veces el promedio de las células del envés.

1.38 veces el promedio del ancho.

1.51 veces el promedio del ancho.



Cuadro 44. Datos estadísticos de C50 *S. pulla*.

#	Células del Hac (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidarias (Sobradillary Cells)		
	Largo (Lg) Índice	Ancho (Alt) Índice	Área μm²	Largo (Lg) Índice	Ancho (Alt) Índice	Área μm²	Largo (Lg) Índice	Ancho (Alt) Índice	Área μm²	Largo (Lg) Índice	Ancho (Alt) Índice	Área μm²
	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]	[μm]	[μm]	[μm²]
1.	1.18	127.98	0.55	59.23	7326.86	0.62	66.77	0.52	56.00	3739.08	0.45	48.46
2.	1.05	113.98	0.52	56.00	6312.81	0.70	75.38	0.55	59.23	4465.09	0.42	45.23
3.	0.80	86.15	0.48	51.69	4483.49	0.45	48.46	0.50	53.85	2609.47	0.40	43.08
4.	0.91	98.00	0.50	53.85	5276.92	0.55	59.23	0.50	53.85	3189.35	0.58	40.92
5.	0.90	96.92	0.60	64.62	6262.72	0.55	59.23	0.48	51.69	3081.77	0.42	45.23
6.	0.82	88.51	0.50	53.85	4755.05	0.60	64.62	0.40	43.08	2783.43	0.48	51.69
7.	0.70	75.38	0.50	53.85	4059.17	0.60	64.62	0.60	64.62	4175.15	0.40	43.08
8.	0.80	86.15	0.50	53.85	4619.05	0.48	51.69	0.48	51.69	2672.09	0.40	43.08
9.	0.85	91.54	0.50	53.85	4928.99	0.80	86.15	0.40	43.08	3711.24	0.40	43.08
10.	0.65	70.00	0.45	48.46	3392.31	0.75	80.77	0.45	48.46	3914.20	0.40	43.08
11.	0.65	70.00	0.40	43.08	3015.38	0.78	84.00	0.45	48.46	4070.77	0.42	45.23
12.	1.00	107.69	0.46	49.54	5334.91	0.80	86.15	0.70	75.38	6494.67	0.40	43.08
13.	0.95	102.31	0.45	48.46	4057.99	0.70	75.38	0.55	59.23	4465.09	0.45	48.46
14.	1.08	116.31	0.40	43.08	5010.18	0.55	59.23	0.60	64.62	3827.22	0.42	45.23
15.	1.00	107.69	0.48	51.69	5366.86	0.68	73.25	0.40	43.08	3154.56	0.42	45.23
16.	1.00	107.69	0.48	51.69	5366.86	0.85	91.54	0.30	52.81	2597.40	0.35	38.77
17.	0.78	84.00	0.50	53.85	4523.08	0.65	70.00	0.40	43.08	3015.38	0.58	40.92
18.	1.15	125.85	0.50	53.85	6668.64	0.55	59.23	0.40	43.08	2551.48	0.40	43.08
19.	0.80	86.15	0.48	51.69	2481.49	0.65	70.00	0.40	43.08	3015.38	0.50	37.69
20.	0.82	88.51	0.48	51.69	4566.88	0.48	51.69	0.32	34.46	1781.40	0.45	48.46
21.	1.05	113.98	0.55	48.46	3479.88	0.50	60.31	0.40	43.08	2597.87	0.50	53.85
22.	0.92	99.08	0.48	51.69	512.51	0.50	53.85	0.40	43.08	2193.53	0.50	53.85
23.	0.95	102.31	0.48	51.69	5288.52	0.60	64.62	0.35	37.69	2435.50	0.45	48.46
24.	0.78	84.00	0.40	43.08	3618.46	0.58	62.46	0.36	32.31	2617.99	0.45	48.46
25.	0.92	99.08	0.50	53.85	5334.91	0.48	51.69	0.35	37.69	1948.40	0.42	45.23
Total	2474.75	1296.92	126132.56	1	1670.31	1	1206.15	80973.50	10.67	1149.08	7.95	356.15
Promedio	96.97	51.86	5348.84	1	66.81	1	48.25	64.46	0.43	45.96	0.32	34.25
D.E. (σ)	15.44	4.73	1005.99	1	12.17	1	10.79	1025.72	0.04	4.16	0.03	3.29

Promedio del área de las células del hac: 5045.29

Promedio del área de las células del envéz: 3238.94

1.56 promedio de las células del hac es:

El promedio de las células guardia es:

El promedio de las células subsidiarias es:

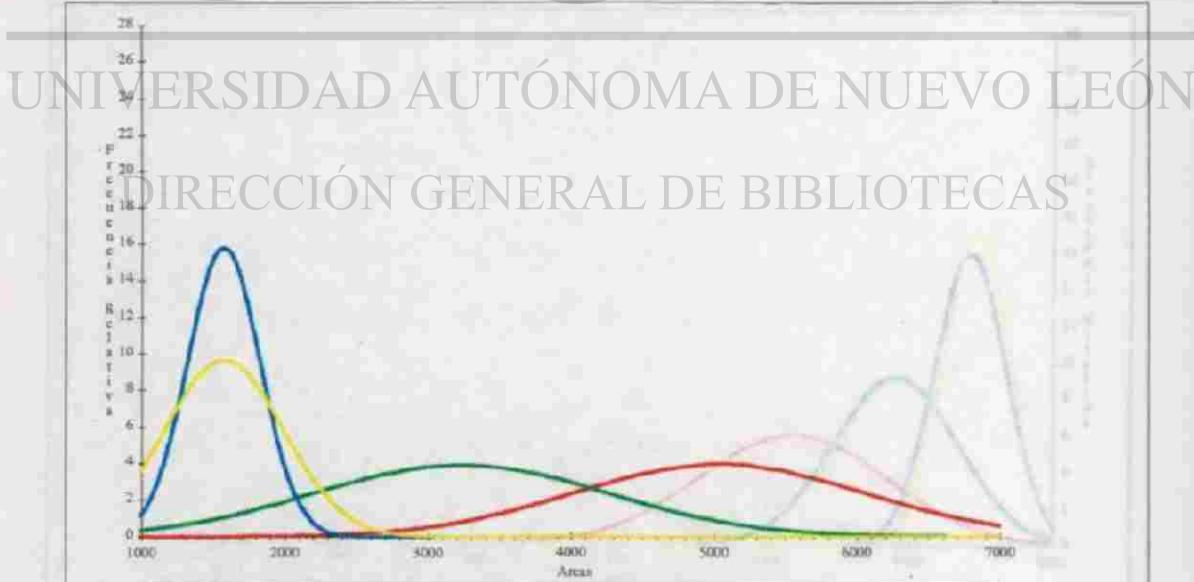
198.20 células/mm cuadrado

308.74 células/mm cuadrado

1.56 veces el promedio de las células del envéz:

1.34 veces el promedio del ancho:

1.53 veces el promedio del ancho.



Cuadro 45. Datos estadísticos de CS1. *S. intermedia*.

CS1. *S. intermedia* (M6d) P#300996-7 México (1)

#	Células del Ház (Adaxial Epidermal Cells)			Células del Envés (Abaxial Epidermal Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidary Cells)										
	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²								
	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]	[μm]	[μm]	[μm ²]								
1.	0.65	70.00	0.53	59.23	4146.15	0.50	53.85	0.46	51.69	2783.43	0.40	43.08	0.26	30.15	1298.98	0.55	59.23	0.38	40.92	2423.90
2.	0.48	51.69	0.62	66.77	3451.40	0.53	59.23	0.43	48.46	2870.41	0.45	48.46	0.30	32.31	1563.68	0.53	59.23	0.40	43.08	2531.48
3.	0.58	62.46	0.43	46.31	2892.45	0.55	59.23	0.40	43.08	2551.48	0.55	59.23	0.41	44.15	2615.27	0.45	48.46	0.42	45.23	2191.95
4.	0.55	59.23	0.39	42.00	2487.69	0.50	53.85	0.30	32.31	1739.64	0.40	43.08	0.26	30.15	1298.98	0.40	43.08	0.38	40.92	1762.84
5.	0.51	54.92	0.48	51.69	2839.10	0.40	43.08	0.32	34.46	1484.50	0.41	44.15	0.30	32.31	1426.51	0.60	64.62	0.32	34.46	2226.75
6.	0.50	53.85	0.40	43.08	2319.55	0.54	58.15	0.24	25.85	1503.05	0.52	34.46	0.30	32.31	1113.37	0.45	48.46	0.35	37.69	1826.65
7.	0.50	53.85	0.40	43.08	2319.55	0.54	58.15	0.45	48.46	2818.22	0.42	45.23	0.35	37.69	1704.83	0.45	48.46	0.40	43.08	2087.57
8.	0.55	59.23	0.42	45.23	2679.05	0.50	53.85	0.35	37.69	2029.39	0.45	48.46	0.30	32.31	1565.68	0.51	54.92	0.32	34.46	1892.73
9.	0.48	51.69	0.40	43.08	2226.75	0.50	53.85	0.42	45.23	2435.50	0.41	44.15	0.30	32.31	1426.51	0.55	59.23	0.40	43.08	2531.48
10.	0.62	66.77	0.46	49.54	3307.64	0.56	60.31	0.41	44.15	2662.82	0.42	45.23	0.36	32.31	1461.38	0.52	56.60	0.35	37.69	2110.77
11.	0.52	56.00	0.55	57.66	2110.77	0.55	59.23	0.42	45.23	2679.05	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.28	30.15	1623.67
12.	0.36	60.31	0.30	32.31	1948.40	0.51	54.92	0.35	37.69	2070.18	0.41	44.15	0.32	34.46	1521.61	0.45	48.46	0.30	32.31	1565.68
13.	0.58	62.46	0.50	53.85	3363.31	0.52	56.00	0.35	37.69	2310.77	0.40	43.08	0.31	33.98	1458.11	0.40	43.08	0.38	40.92	1762.84
14.	0.51	54.92	0.42	45.23	2484.21	0.40	43.08	0.45	48.46	2087.57	0.50	53.85	0.30	32.31	1729.64	0.50	53.85	0.38	40.92	2233.55
15.	0.55	59.23	0.40	43.08	2551.48	0.65	70.00	0.28	30.15	2110.77	0.40	43.08	0.32	34.46	1484.50	0.49	52.77	0.40	43.08	2273.14
16.	0.55	59.23	0.38	40.92	2424.90	0.50	53.85	0.40	43.08	2419.55	0.45	48.46	0.30	32.31	1565.68	0.50	53.85	0.35	37.69	2029.59
17.	0.52	56.00	0.36	38.77	2171.05	0.45	48.46	0.25	26.92	1304.73	0.40	43.08	0.32	34.46	1484.50	0.50	64.62	0.40	43.08	2783.43
18.	0.52	56.00	0.35	37.69	2110.77	0.48	51.69	0.25	26.92	1391.72	0.40	43.08	0.32	34.46	1484.50	0.52	66.77	0.50	53.85	3595.27
19.	0.58	62.46	0.32	44.46	2152.52	0.52	56.00	0.30	32.31	1809.23	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.40	43.08	2319.53
20.	0.60	64.62	0.30	32.31	2087.57	0.40	43.08	0.28	30.15	1298.98	0.40	43.08	0.38	32.31	1391.72	0.40	43.08	0.50	53.85	2110.77
21.	0.58	62.46	0.38	40.92	2756.12	0.45	48.46	0.35	37.69	1826.65	0.40	43.08	0.30	32.31	1391.72	0.55	59.23	0.45	48.46	2870.41
22.	0.38	63.46	0.57	64.38	3814.18	0.43	48.46	0.37	34.46	1670.06	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.35	37.69	1826.63
23.	0.54	58.15	0.48	51.69	3006.11	0.50	53.85	0.40	43.08	2319.55	0.42	45.23	0.30	32.31	1461.38	0.65	70.00	0.38	40.92	2864.61
24.	0.50	53.85	0.60	53.85	2899.41	0.42	45.23	0.35	37.69	1704.85	0.38	40.92	0.25	26.92	1191.77	0.62	66.77	0.40	43.08	2876.21
25.	0.52	56.00	0.42	43.15	2472.02	0.40	43.08	0.20	21.54	927.81	0.45	48.46	0.28	30.15	1461.38	0.52	56.00	0.32	34.46	1929.85
Suma	1467.35	1136.31	66884.79	3328.92	943.46	50510.00	10.49	1129.69	7.64	822.77	37352.49	1376.31	1024.15	56470.03						
Promedio	38.77	35.33	2029.41	53.16	37.78	2320.00	0.42	45.19	0.31	32.91	11.11	55.03	40.97	2258.80						
D.E. (SD)	4.70	6.76	374.25	6.65	8.20	540.23	0.04	4.60	0.03	5.05	273.06	7.67	5.77	478.44						

Promedio del área de las células del haz:

2673.67 1000x cuadradas

374.02 círculos cuadrados

Promedio del área de las células del envés:

2029.41 1000x cuadradas

494.95 círculos/mm cuadrados

El promedio de las células del haz es:

1.32 veces el promedio de las células del envés.

El promedio de las células guardia es:

1.37 veces el promedio del ancho.

El promedio de las células subsidiarias es:

1.34 veces el promedio del ancho.

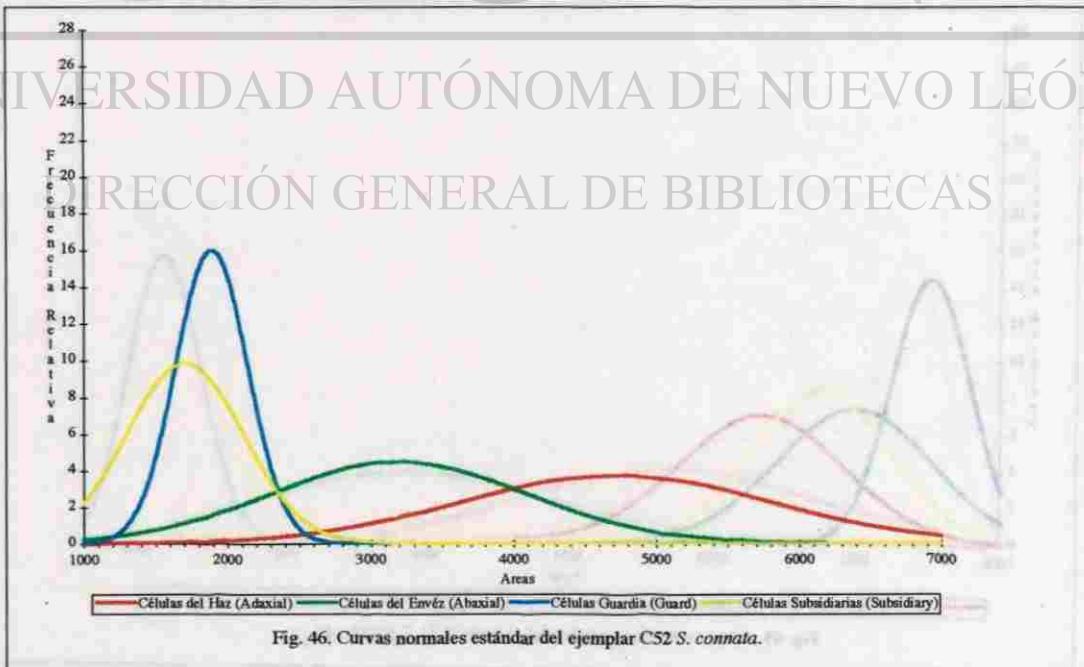


Cuadro 46. Datos estadísticos de CS2 S. connata.

CS2 S. connata				Pl#300996-8 Colombia, Ecuador, y Perú				Células del Ház (Adaxial Cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)			
#	Largo (Lh) Indice	Ancho (Ah) Indice	Área μm²	Largo (Le) Indice	Ancho (Ae) Indice	Área μm²	Largo (Lg) Indice	Ancho (Ag) Indice	Área μm²	Largo (La) Indice	Ancho (As) Indice	Área μm²											
1	0.75	80.77 0.50	53.85	4349.11	0.74 79.69 0.41	44.15	3518.72	0.45 48.46 0.30	32.31	1565.68	0.50 53.85 0.22	23.69	1275.74										
2	0.79	85.08 0.48	51.69	4397.82	0.50 53.85 0.39	42.00	2261.54	0.45 48.46 0.35	37.69	1826.63	0.60 64.62 0.30	32.31	2087.57										
3	0.75	80.77 0.50	53.85	4349.11	0.66 71.08 0.40	43.08	3061.77	0.48 51.69 0.35	37.69	1948.40	0.60 64.62 0.15	16.15	1043.79										
4	0.90	96.92 0.60	64.62	6262.72	0.52 56.00 0.34	36.62	2050.46	0.45 48.46 0.32	34.46	1670.06	0.70 75.38 0.22	23.69	1786.04										
5	1.18	127.08 0.48	51.69	6568.90	0.75 80.77 0.33	35.54	2870.41	0.48 51.69 0.38	40.92	2115.41	0.60 64.62 0.25	26.92	1739.64										
6	0.98	105.54 0.55	59.23	6251.12	0.47 50.62 0.37	39.85	2016.83	0.42 45.23 0.38	40.92	1850.98	0.62 66.77 0.20	21.54	1438.11										
7	0.90	96.92 0.50	53.85	5218.93	0.65 70.00 0.40	43.08	3015.38	0.50 53.85 0.35	37.69	2029.59	0.50 53.85 0.24	25.85	1391.72										
8	1.00	107.69 0.59	63.54	6842.60	0.62 66.77 0.32	34.46	2300.97	0.48 51.69 0.32	34.46	1781.40	0.50 53.85 0.25	26.92	1449.70										
9	1.05	113.08 0.46	49.54	5601.66	0.80 86.15 0.40	43.08	3711.24	0.50 53.85 0.32	34.46	1855.62	0.55 59.23 0.20	21.54	1275.74										
10	0.80	86.15 0.50	53.85	4639.05	0.80 86.15 0.49	52.77	4546.27	0.45 48.46 0.30	32.31	1565.68	0.55 59.23 0.25	26.92	1594.67										
11	0.70	75.38 0.50	53.85	4059.17	0.80 86.15 0.40	43.08	3711.24	0.42 45.23 0.30	32.31	1461.30	0.55 59.23 0.25	26.92	1594.67										
12	0.70	75.38 0.51	54.92	4140.35	0.58 62.46 0.30	32.31	2017.99	0.48 51.69 0.35	37.69	1948.40	0.50 53.85 0.32	34.46	1855.62										
13	0.68	73.23 0.49	52.77	3864.33	0.70 75.38 0.38	40.92	3084.97	0.45 48.46 0.30	32.31	1565.68	0.50 53.85 0.20	21.54	1159.76										
14	0.80	86.15 0.42	45.23	3896.80	0.82 88.31 0.42	45.23	3994.22	0.45 48.46 0.35	37.69	1826.63	0.60 64.62 0.25	26.92	1739.64										
15	0.80	86.15 0.50	53.85	4639.05	0.50 53.85 0.38	40.92	2203.55	0.48 51.69 0.40	43.08	2226.75	0.60 64.62 0.28	30.15	1948.40										
16	0.84	90.46 0.55	59.23	5358.11	0.60 64.62 0.39	42.00	2713.85	0.45 48.46 0.40	43.08	2087.57	0.50 53.85 0.20	21.54	1159.76										
17	0.92	99.08 0.54	58.15	5761.70	0.86 92.62 0.56	60.31	5585.42	0.50 53.85 0.40	43.08	2319.53	0.65 70.00	0.30	32.31	2261.54									
18	0.71	76.46 0.61	65.69	5022.93	0.58 62.46 0.45	48.46	3026.98	0.42 45.23 0.42	45.23	2045.82	0.55 59.23 0.28	30.15	1786.04										
19	0.80	86.15 0.58	53.85	4639.05	0.79 85.08 0.41	44.15	3756.47	0.45 48.46 0.38	40.92	1983.19	0.65 70.00	0.30	32.31	2261.54									
20	0.55	59.23 0.50	53.85	3189.35	0.86 92.62 0.42	45.23	4189.06	0.45 48.46 0.32	34.46	1670.06	0.70 75.38	0.35	37.69	2841.42									
21	0.50	53.85 0.50	53.85	2899.41	0.58 62.46 0.36	38.77	2421.59	0.50 53.85 0.40	43.08	2319.53	0.60 64.62 0.22	23.69	1530.89										
22	0.80	86.15 0.49	52.77	4546.27	0.93 100.15 0.39	42.00	4206.46	0.50 53.85 0.30	32.31	1739.64	0.60 64.62 0.28	30.15	1948.40										
23	0.69	74.31 0.60	64.62	4801.42	0.80 86.15 0.40	43.08	3711.24	0.50 53.85 0.40	43.08	2319.53	0.55 59.23 0.30	32.31	1913.61										
24	0.55	59.23 0.50	53.85	3189.35	0.78 84.00 0.30	32.31	2713.85	0.45 48.46 0.35	37.69	1826.63	0.52 56.00 0.30	32.31	1809.23										
25	0.55	59.23 0.50	53.85	3189.35	0.90 96.92 0.30	32.31	3131.36	0.42 45.23 0.35	37.69	1704.85	0.50 53.85 0.30	32.31	1739.64										
Suma	2120.46	1386.00	117677.69	1804.31		1045.69	79821.86	11.58	1247.08	8.79	946.62	47254.55		1538.92	690.31	42632.89							
Promedio	84.82		55.44	4307.11		75.77		41.83	1193.67	0.46	49.88	0.35	37.86	1806.41	61.56	27.61	1705.32						
D. S. (σ)	17.70		4.94	1084.27		14.68		6.31	899.25	0.03	3.01	0.04	4.18	249.63	6.74	5.13	406.15						

Promedio del área de las células del haz: 4707.11
 Promedio del área de las células del envéz: 3192.87
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiarias es:

micras cuadradas 212.44 células/mm cuadrados
 micras cuadradas 313.20 células/mm cuadrados
 1.47 veces el promedio de las células del envéz.
 1.32 veces el promedio del ancho.
 2.23 veces el promedio del ancho.



Cuadro 47. Datos estadísticos de CS3. *S. Hernandezii*

Células del Higo (Adaxial Cells)				Células del Envés (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)			
#	Largo (L) Índice	Ancho (A) Índice	Área μm²	Largo (Lc) Índice	Ancho (Ac) Índice	Área μm²	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm²	Largo (Lu) Índice	Ancho (Au) Índice	Área μm²			
1	0.50	53.85	0.40	43.08	2319.53	0.64	68.92	0.34	36.62	2528.64	0.40	43.08	0.35	37.69	1623.67
2	0.50	53.85	0.40	43.08	2319.53	0.42	45.23	0.32	34.46	1558.72	0.45	48.46	0.30	32.31	1565.68
3	0.50	53.85	0.40	43.08	2319.53	0.42	45.23	0.36	38.77	1753.56	0.41	44.15	0.32	34.46	1521.61
4	0.59	63.54	0.40	43.08	2737.04	0.45	48.46	0.35	37.69	1826.63	0.48	51.69	0.33	35.54	1887.06
5	0.62	66.77	0.40	43.08	2876.21	0.42	45.23	0.35	37.69	1704.85	0.42	45.23	0.36	38.77	1735.56
6	0.75	80.77	0.40	43.08	3479.29	0.79	85.06	0.32	34.46	2931.98	0.45	48.46	0.32	34.46	1670.06
7	0.49	83.08	0.42	45.23	1948.40	0.40	43.08	0.35	37.69	1623.67	0.48	51.69	0.33	35.54	1887.06
8	0.30	86.15	0.40	43.08	3711.24	0.50	53.85	0.40	43.08	2319.53	0.41	44.15	0.30	32.31	1426.51
9	0.80	86.15	0.40	43.08	3711.24	0.65	70.00	0.45	48.46	3392.31	0.45	48.46	0.30	32.31	1565.68
10	0.67	72.15	0.40	43.08	3108.17	0.46	49.54	0.34	36.62	1813.87	0.38	40.92	0.26	28.00	1143.85
11	0.60	64.62	0.35	37.69	2435.50	0.50	53.85	0.40	43.08	2319.53	0.48	51.69	0.32	34.46	1781.40
12	0.60	64.62	0.40	43.08	2788.49	0.59	63.54	0.36	38.77	2463.34	0.42	45.23	0.30	32.31	1461.30
13	0.48	51.69	0.50	53.85	2788.49	0.58	62.46	0.40	43.08	2690.65	0.40	43.08	0.30	32.31	1391.72
14	0.50	53.85	0.42	45.23	2435.50	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.30	32.31	1391.72
15	0.50	53.85	0.40	43.08	2319.53	0.59	42.00	0.35	37.69	1983.08	0.46	49.54	0.40	43.08	2133.96
16	0.60	64.62	0.40	43.08	2783.45	0.50	53.85	0.35	37.69	2029.59	0.44	47.38	0.39	42.00	1990.15
17	0.60	64.62	0.35	37.69	2435.50	0.55	59.23	0.35	37.69	2224.54	0.50	53.85	0.31	33.38	1797.63
18	0.00	96.92	0.42	45.23	3483.90	0.46	49.54	0.36	38.77	1920.57	0.40	43.08	0.30	32.31	1391.72
19	0.69	74.31	0.50	52.31	3400.71	0.50	53.85	0.40	43.08	2319.53	0.42	45.23	0.32	34.46	1538.72
20	0.63	87.85	0.41	44.15	2993.67	0.40	43.08	0.35	37.69	1623.67	0.43	46.31	0.32	34.46	1593.83
21	0.81	87.23	0.42	45.23	3943.51	0.48	51.69	0.36	38.77	2004.07	0.46	49.54	0.36	38.77	1920.57
22	0.55	55.23	0.43	46.31	2742.84	0.46	49.54	0.32	34.46	1707.17	0.40	43.08	0.32	34.46	1484.50
23	0.52	56.00	0.41	44.15	2472.62	0.43	46.31	0.40	43.08	1994.79	0.44	47.38	0.35	37.69	1786.04
24	0.65	76.00	0.41	44.15	3090.77	0.48	51.69	0.35	37.69	1948.40	0.48	51.69	0.32	34.46	1781.40
25	0.62	66.77	0.43	46.31	3091.93	0.48	51.69	0.42	48.46	2505.09	0.43	46.31	0.32	34.46	1593.83
Suma				1656.31				1064.46				71630.45			
Promedio				43.38				1330.00				977.85			
D.E. (σ)				13.22				53.20				39.11			
				3.71				4.05				479.92			

Promedio del área de las células del haz:

miers quadrata

349.01 Celsius/mm quadrado

Próstasis del límite de las células del envés

mártir cuadrado

479.09 oħħax/imm-ċonċideri

El promedio de los ófides del haz es:

37 veces el promedio

Últimas del envío.

El promedio de las oficinas guarda es

34 veces el promedio

17

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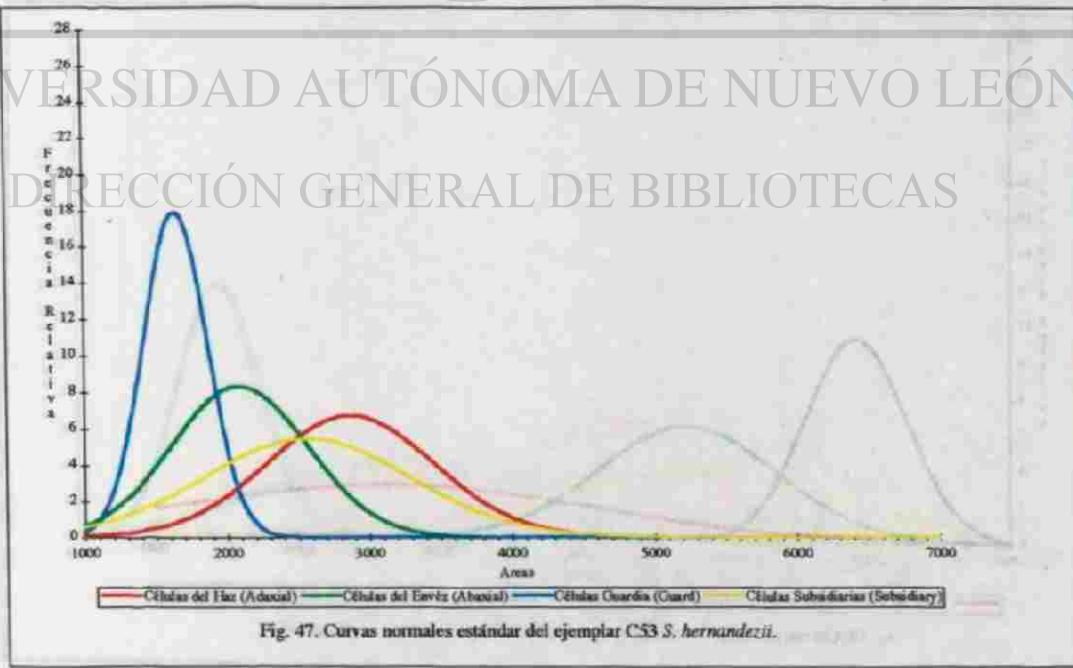
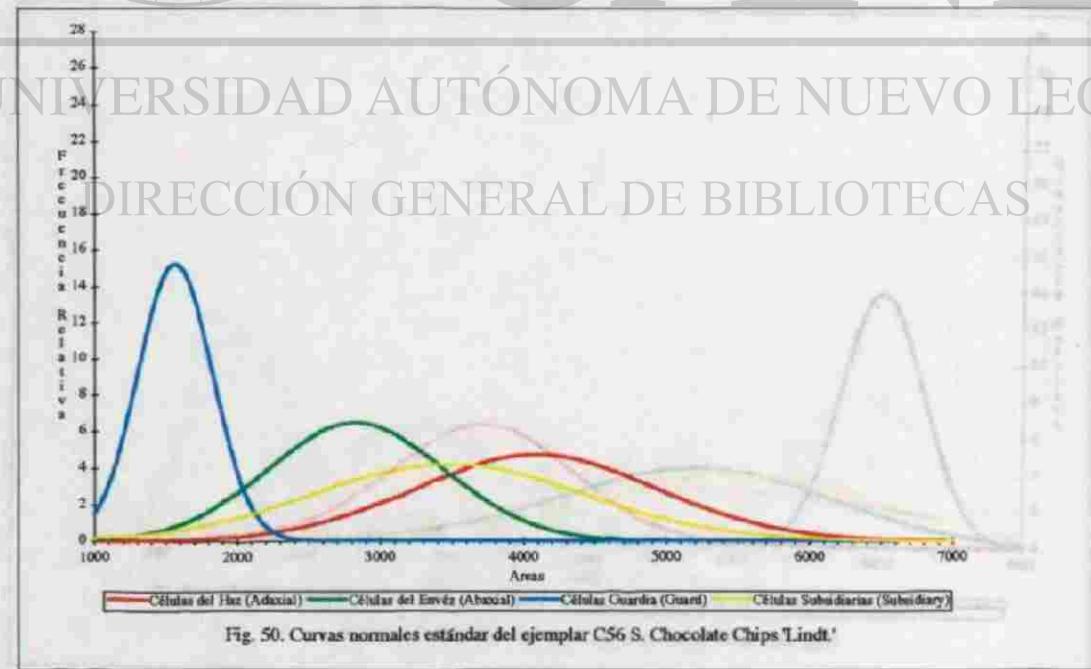


Fig. 47. Curvas normales estándar del ejemplar CS3 *S. hernandezii*

Cuadro 50. Datos estadísticos de C56 S. Chocolate Chips 'Lindt.'

#	C56 Chocolate Chips 'Lindt'				PM#000996-12 (primero x paramentos)				Híbrido Primario Hecho por Hombre (Man-made Primary Hybrid)			
	Células del Haz (Adaxial Cells)			Área μm²	Células del Envés (Abaxial Cells)			Área μm²	Células Guardia (Guard Cells)			Área μm²
	Largo (L) Índice	Ancho (A) Índice	Largo (L) Índice		Ancho (A) Índice	Largo (L) Índice	Ancho (A) Índice		Largo (L) Índice	Ancho (A) Índice	Largo (L) Índice	
1	0.88	54.77	0.56	58.77	3674.13	0.68	73.23	0.39	42.00	3075.69	0.41	44.15
2	0.71	76.46	0.57	61.38	4693.56	0.55	59.23	0.40	43.08	2551.48	0.39	42.00
3	0.77	82.92	0.48	51.69	4286.48	0.50	53.85	0.40	43.08	2319.58	0.40	43.08
4	0.80	86.15	0.47	50.62	4360.71	0.52	56.00	0.40	43.08	2412.31	0.36	38.77
5	0.84	90.46	0.50	53.85	4871.01	0.81	65.69	0.40	43.08	2829.82	0.42	45.23
6	0.98	105.54	0.48	51.69	5455.33	0.45	48.46	0.40	43.08	2087.57	0.41	44.15
7	0.71	76.46	0.40	43.08	3293.73	0.55	59.23	0.45	48.46	2870.41	0.36	38.77
8	0.65	70.00	0.42	45.23	3166.15	0.58	62.46	0.49	52.77	3296.05	0.40	43.08
9	0.65	70.00	0.40	43.08	3015.38	0.56	60.31	0.38	40.92	2467.98	0.49	52.77
10	0.72	77.54	0.36	38.77	3006.11	0.61	65.69	0.40	43.08	2829.82	0.41	44.15
11	0.83	89.38	0.58	62.46	5983.10	0.50	53.85	0.42	45.23	2453.50	0.41	44.15
12	0.88	94.77	0.53	57.08	5409.14	0.72	77.54	0.50	53.85	4175.15	0.48	51.69
13	0.60	64.62	0.45	48.46	3131.56	0.68	78.29	0.48	51.69	3785.47	0.40	43.08
14	0.78	84.00	0.45	48.46	4070.77	0.57	61.38	0.40	43.08	2644.26	0.45	48.46
15	1.00	107.69	0.40	48.08	4659.05	0.71	76.46	0.33	35.54	2717.33	0.41	44.15
16	0.75	80.77	0.42	45.23	3653.25	0.58	62.46	0.40	43.08	2690.65	0.41	44.15
17	0.69	74.31	0.34	36.62	2720.80	0.55	59.23	0.42	45.23	2679.05	0.41	44.15
18	0.80	86.15	0.50	53.85	4639.05	0.65	70.00	0.48	51.69	3618.46	0.45	48.46
19	0.58	62.46	0.52	56.00	3497.85	0.56	60.31	0.40	43.08	2597.87	0.45	48.46
20	0.83	89.38	0.50	53.85	4813.02	0.60	64.62	0.35	37.69	2483.50	0.41	44.15
21	0.71	76.46	0.50	53.85	4117.16	0.71	76.46	0.33	57.08	4364.19	0.44	47.38
22	0.83	89.38	0.54	58.15	5198.06	0.62	66.77	0.45	48.46	3235.74	0.40	43.08
23	0.86	92.62	0.41	44.15	4089.32	0.55	59.23	0.41	44.15	2615.27	0.40	43.08
24	0.90	96.92	0.35	37.69	3653.25	0.52	56.00	0.35	37.69	2110.77	0.46	49.54
25	0.90	96.92	0.32	34.46	3340.17	0.41	44.15	0.39	42.00	1854.46	0.41	44.15
Suma	2116.15	1211.54	10258.09		1565.85		1122.15	70700.32	10.44	1124.31	8.05	866.92
Promedio	84.63	48.46	4085.12		62.63		44.89	39.85	0.42	44.97	0.32	34.68
D.E. (σ)	11.80	7.90	850.31		8.58		5.25	622.69	0.03	3.41	0.04	3.99
										251.99		8.20
											1743.54	1251.38
											69.74	50.06
												3477.20
												13.13
												953.85

Promedio del área de las células del haz: 4095.12
 Promedio del área de las células del envés: 2828.01
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:



Cuadro 51. Datos estadísticos de C57 *S. lietzei* 'White Bird.'

C57 <i>S. lietzei</i> 'White Bird'				Pl#300996-13 Venezuela, Llanos Guyanas, Brasil				Células del Ház (Adaxial Cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)			
#	Largo (L _b) Indice	Ancho (A _b) Indice	Área μm ²	Largo (L _c) Indice	Ancho (A _c) Indice	Área μm ²	Largo (L _g) Indice	Ancho (A _g) Indice	Área μm ²	Largo (L _s) Indice	Ancho (A _s) Indice	Área μm ²											
1	0.79	85.08	0.51	54.92	4672.69	0.43	46.31	0.45	48.46	2244.14	0.45	48.46	0.33	35.54	1722.25	0.40	43.08	0.40	43.08	1855.62			
2	0.69	74.31	0.52	56.00	4161.23	0.49	52.77	0.42	45.23	2386.79	0.40	43.08	0.30	32.31	1391.72	0.60	64.62	0.45	48.46	3131.36			
3	0.80	86.15	0.50	53.85	4639.05	0.50	53.85	0.58	62.46	3363.31	0.40	43.08	0.29	31.29	1345.33	0.40	43.08	0.30	32.31	1391.72			
4	0.70	75.38	0.50	53.85	4059.17	0.50	53.85	0.51	54.92	2957.40	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.49	52.77	2557.28			
5	0.82	88.31	0.51	54.92	4850.13	0.40	43.08	0.50	53.85	2319.53	0.40	43.08	0.29	31.29	1345.33	0.45	48.46	0.55	59.23	2870.41			
6	0.52	56.00	0.50	53.85	3015.38	0.30	32.31	0.48	51.69	1670.06	0.40	43.08	0.25	26.92	1159.76	0.41	44.15	0.40	43.08	1902.01			
7	0.70	75.38	0.52	56.00	4221.54	0.38	40.92	0.48	51.69	2115.41	0.40	43.08	0.30	32.31	1391.72	0.35	37.69	0.35	37.69	1420.71			
8	0.85	91.54	0.55	59.23	5421.89	0.58	62.46	0.50	53.85	3363.31	0.40	43.08	0.29	31.29	1345.33	0.39	42.00	0.61	65.69	2759.08			
9	0.88	94.77	0.60	64.62	6123.55	0.60	64.62	0.39	42.00	2713.85	0.40	43.08	0.31	33.38	1438.11	0.60	64.62	0.32	34.46	2226.75			
10	0.60	64.62	0.48	51.69	3340.12	0.80	86.15	0.40	43.08	3711.24	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.59	63.54	3421.30			
11	0.52	56.00	0.49	52.77	2955.08	0.55	59.23	0.44	47.38	2806.63	0.40	43.08	0.30	32.31	1391.72	0.33	35.54	0.40	43.08	1530.89			
12	0.70	75.38	0.60	64.62	4871.01	0.85	91.54	0.53	57.08	5224.73	0.35	37.69	0.30	32.31	1217.75	0.45	48.46	0.39	42.00	2035.38			
13	0.86	92.62	0.50	53.85	4986.98	0.50	53.85	0.49	52.77	2841.42	0.38	40.92	0.30	32.31	1322.13	0.50	53.85	0.62	66.77	3595.27			
14	0.80	86.15	0.54	58.15	5010.18	0.49	52.77	0.50	53.85	2841.42	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.50	53.85	2899.41			
15	0.95	102.31	0.55	59.23	6059.76	0.69	74.31	0.48	51.69	3841.14	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.50	53.85	2609.47			
16	0.95	102.31	0.54	58.15	5949.58	0.62	66.77	0.50	53.85	3595.27	0.38	40.92	0.30	32.31	1322.13	0.42	45.23	0.29	31.23	1412.59			
17	0.64	68.92	0.59	63.54	4379.27	0.62	66.77	0.55	59.23	3954.79	0.38	40.92	0.30	32.31	1322.13	0.50	53.85	0.50	53.85	2899.41			
18	0.62	66.77	0.58	62.46	4170.51	0.68	73.23	0.50	53.85	3943.19	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.31	33.38	1725.73			
19	0.96	103.38	0.48	51.69	5344.19	0.50	53.85	0.60	64.62	3479.29	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.49	52.77	2841.42			
20	0.92	99.08	0.48	51.69	5121.51	0.58	62.46	0.55	59.23	3699.64	0.40	43.08	0.26	28.00	1206.15	0.49	52.77	0.30	32.31	1704.85			
21	0.81	87.23	0.54	58.15	5072.80	0.66	71.08	0.53	57.08	4056.85	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.45	48.46	2087.57			
22	0.87	93.69	0.50	53.85	5044.97	0.36	38.77	0.54	58.15	2254.58	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.40	43.08	2226.75			
23	1.00	107.69	0.46	49.54	5334.91	0.72	77.54	0.46	49.54	3841.14	0.40	43.08	0.29	31.23	1345.33	0.51	54.92	0.31	33.38	1833.59			
24	0.95	102.31	0.49	52.77	5398.70	0.68	73.23	0.45	48.46	3548.88	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.50	53.85	2319.33			
25	0.69	74.31	0.49	52.77	3921.16	0.48	51.69	0.50	53.85	2783.43	0.40	43.08	0.30	32.31	1391.72	0.61	65.69	0.50	53.85	3537.28			
Suma	2109.69			1402.15	118125.36		1503.38			1327.85	79557.43	9.94	1070.46	7.43	800.15	34276.80		1246.00		1176.00	58795.35		
Promedio	84.39			56.09	4725.01		60.14			53.11	3383.30	0.40	42.82	0.30	32.01	1246.00		49.84		47.04	251.81		
D.E. (σ)	15.03			4.26	855.64		14.68			5.55	799.27	0.02	1.71	0.02	1.66	102.26		7.82		10.90	681.93		

Promedio del área de las células del haz:

4725.01

micas cuadradas

211.64 células/mm cuadrados

Promedio del área de las células del envéz:

3182.30

micas cuadradas

314.24 células/mm cuadrados

El promedio de las células del haz es:

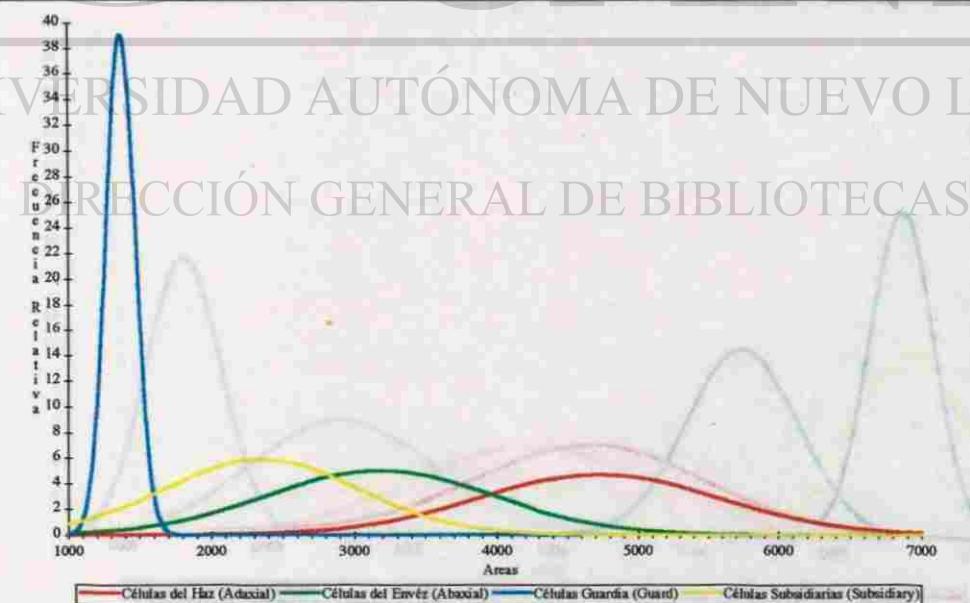
1.48 veces el promedio de las células del envéz.

El promedio de las células guardia es:

1.34 veces el promedio del ancho.

El promedio de las células subsidiarias es:

1.06 veces el promedio del ancho.



Cuadro S2. Datos estadísticos de CS8 *S. panamensis*.

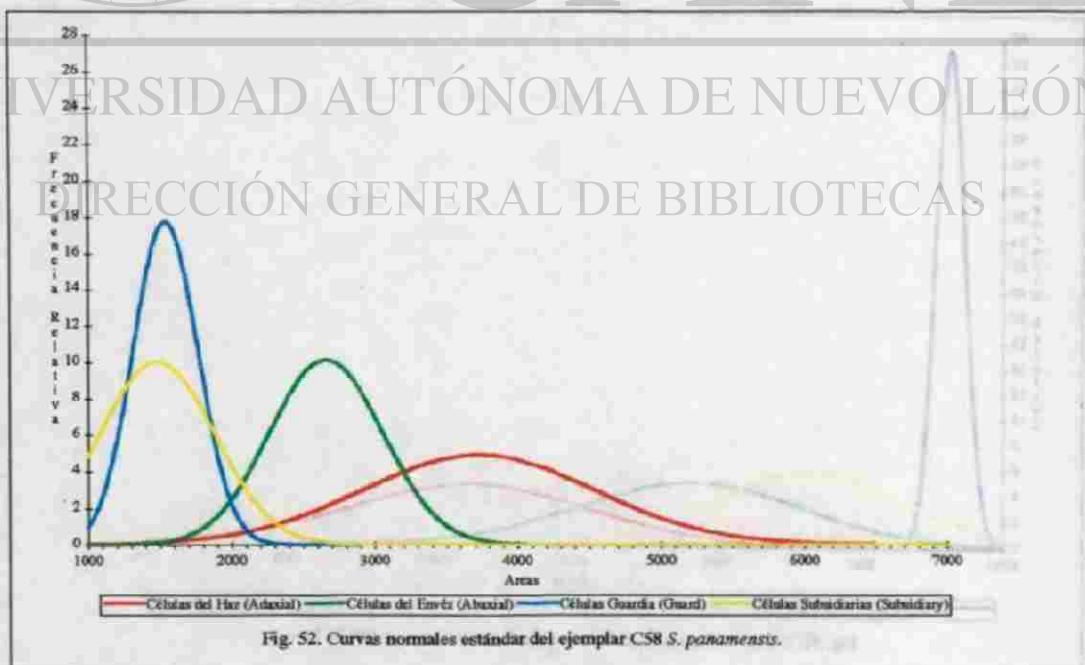
CS8. *S. panamensis* (Pm1) PM300996-14 Panamá (?)

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área (μm ²)	Largo (L _e)	Width (W _b)	Área (μm ²)	Largo (L _g)	Ancho (A _g)	Área (μm ²)	Largo (L _s)	Ancho (A _s)	Área (μm ²)								
	Índice	[μm]	[μm ²]	Índice	[μm]	[μm ²]	Índice	[μm]	[μm ²]	Índice	[μm]	[μm ²]								
1	0.60	64.02	0.48	51.69	3340.12	0.58	62.46	0.40	43.08	2690.65	0.45	48.46	0.35	37.69	1826.63	0.45	48.46	0.30	32.31	1565.68
2	0.90	96.92	0.55	59.23	3740.83	0.54	58.15	0.35	37.69	2191.95	0.42	45.23	0.30	32.31	1461.30	0.48	51.69	0.20	21.54	1113.37
3	0.85	91.54	0.51	54.92	5027.57	0.50	53.85	0.41	44.15	2377.51	0.42	45.23	0.35	37.69	1704.85	0.35	37.69	0.30	32.31	1217.75
4	0.51	54.92	0.48	51.69	2839.10	0.60	64.62	0.33	35.54	2396.33	0.40	43.08	0.35	37.69	1623.67	0.25	26.92	0.30	32.31	869.82
5	0.48	51.69	0.49	52.77	2727.76	0.45	48.46	0.40	43.08	2087.57	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.35	37.69	1623.67
6	0.65	70.00	0.48	51.69	3618.46	0.74	79.69	0.30	32.31	2574.67	0.35	37.69	0.30	32.31	1217.75	0.38	40.92	0.22	23.69	969.56
7	0.68	73.25	0.50	53.85	3943.19	0.62	66.77	0.42	45.23	3020.02	0.45	48.46	0.32	34.46	1670.06	0.35	37.69	0.20	21.54	811.83
8	0.63	67.83	0.50	53.85	3633.23	0.63	67.85	0.40	43.08	2922.60	0.45	48.46	0.32	34.46	1670.06	0.35	39.23	0.25	26.92	1594.67
9	0.50	53.85	0.51	54.92	2927.40	0.60	64.62	0.32	34.46	2262.75	0.40	43.08	0.32	34.46	1484.50	0.40	43.08	0.30	32.31	1391.72
10	0.50	53.85	0.49	52.77	2841.42	0.60	64.62	0.40	43.08	2783.43	0.42	45.23	0.30	32.31	1461.30	0.40	43.08	0.28	30.15	1298.98
11	0.50	53.85	0.52	56.00	3015.38	0.50	53.85	0.40	43.08	2319.53	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.35	37.69	2029.59
12	0.60	64.62	0.59	65.54	4105.56	0.69	74.31	0.43	46.31	3441.02	0.42	45.23	0.30	32.31	1461.30	0.48	51.69	0.38	40.92	2115.41
13	0.50	53.85	0.55	59.23	3189.33	0.62	66.77	0.35	37.69	2516.69	0.38	46.92	0.30	32.31	1322.13	0.58	62.46	0.32	34.46	2152.52
14	0.59	63.54	0.50	53.85	3421.30	0.73	78.62	0.40	43.08	3386.51	0.42	45.23	0.32	34.46	1558.72	0.52	56.00	0.22	23.69	1326.77
15	0.61	65.69	0.51	54.92	3608.02	0.62	66.77	0.40	43.08	2876.21	0.40	43.08	0.28	30.15	1298.93	0.58	62.46	0.32	34.46	2152.52
16	0.50	53.85	0.54	58.15	3131.36	0.56	60.31	0.40	43.08	2597.87	0.45	48.46	0.38	40.92	1588.19	0.35	37.69	0.25	26.92	1014.79
17	0.55	58.23	0.50	53.85	3189.35	0.52	56.00	0.42	45.23	2532.92	0.52	56.00	0.35	37.69	2110.77	0.45	48.46	0.30	32.31	1565.68
18	0.55	59.23	0.55	59.23	3508.28	0.46	49.54	0.43	46.31	2294.01	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.28	30.15	1461.30
19	0.49	52.77	0.65	70.00	3693.83	0.50	53.85	0.42	45.23	2435.50	0.42	45.23	0.28	30.15	1363.88	0.35	37.69	0.28	30.15	1136.57
20	0.52	56.00	0.64	68.92	3859.69	0.64	68.92	0.40	43.08	2968.99	0.40	43.08	0.32	34.46	1484.50	0.42	45.23	0.30	32.31	1461.30
21	0.55	58.23	0.65	70.00	4146.15	0.62	66.77	0.38	40.92	2732.46	0.42	45.23	0.30	32.31	1461.30	0.45	48.46	0.23	24.77	1200.35
22	0.47	50.82	0.52	56.00	2834.46	0.58	62.46	0.50	53.85	3363.51	0.38	40.92	0.28	30.15	1233.99	0.58	62.46	0.28	30.15	1883.46
23	0.65	70.00	0.70	75.38	5276.92	0.63	67.85	0.40	43.08	2922.60	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.28	30.15	1358.72
24	0.63	70.00	0.63	67.85	4749.25	0.60	64.62	0.40	43.08	2783.43	0.40	43.08	0.30	32.31	1391.72	0.52	56.00	0.30	32.31	1809.23
25	0.71	76.46	0.57	61.38	4693.56	0.40	43.08	0.45	48.46	2087.57	0.50	53.85	0.32	34.46	1855.62	0.48	51.69	0.32	34.46	1781.40
	Suma	1587.38	1465.69	93111.58		1564.77		1067.23	66430.07	10.47	1127.54	7.91	851.85	38537.77		1206.15	765.69	37106.62		
	Promedio	63.50	58.63	3724.06		62.59		42.69		0.42	45.10	0.32	34.07	3841.53		48.25	30.63	1484.24		
	D.E. (n)	11.88	6.84	822.46		8.94		4.50		392.69	0.04	3.91	0.03	2.80	224.85		9.06	4.97	397.20	

Promedio del área de las células del haz: 3724.46
 Promedio del área de las células del envés: 2657.20
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:

micras cuadradas
 micras cuadradas
 1.40 veces el promedio de las células del envés.
 1.32 veces el promedio del ancho.
 1.58 veces el promedio del ancho.

268.50 células/mm cuadrados
 376.34 células/mm cuadrados



Cuadro 53. Datos estadísticos de C59 *S. tigrina* 'Glory of Mexico.'

#	Células del Haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidary Cells)										
	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _c) Índice	Ancho (A _c) Índice	Área μm ²	Largo (L _d) Índice	Ancho (A _d) Índice	Área μm ²								
	Largo (L _a)	Ancho (A _a)	Área	Largo (L _b)	Ancho (A _b)	Área	Largo (L _c)	Ancho (A _c)	Área	Largo (L _d)	Ancho (A _d)	Área								
1	0.68	73.23	0.64	68.92	5047.29	0.45	48.46	0.50	53.85	2609.47	0.49	52.77	0.30	32.31	1704.85	0.69	74.31	0.80	86.15	6401.89
2	0.62	66.77	0.54	58.15	3488.89	0.52	56.00	0.50	53.85	3015.38	0.42	45.23	0.22	23.69	1071.62	0.50	53.85	0.48	51.69	2783.43
3	0.50	53.85	0.55	59.23	3189.35	0.55	59.23	0.50	53.85	3189.35	0.45	48.46	0.34	36.62	1774.44	0.50	53.85	0.39	42.00	2361.54
4	0.60	64.62	0.50	53.85	3479.29	0.59	63.54	0.45	48.46	3079.17	0.50	53.85	0.31	33.38	1297.69	0.60	64.62	0.64	68.92	4453.49
5	1.06	114.15	0.52	56.00	6392.61	0.52	56.00	0.50	53.85	3015.38	0.48	51.69	0.32	34.46	1781.40	0.60	64.62	0.40	43.08	2783.43
6	0.55	59.23	0.52	56.00	3316.92	0.41	44.15	0.46	43.08	1992.01	0.50	53.85	0.42	45.23	2435.50	0.55	59.23	0.40	43.08	2551.48
7	0.50	53.85	0.54	58.15	3131.36	0.40	43.06	0.50	53.85	2319.53	0.50	53.85	0.32	34.46	1855.62	0.66	71.08	0.60	64.62	4592.66
8	0.55	59.23	0.49	52.77	3125.56	0.69	74.31	0.60	64.62	4801.42	0.45	48.46	0.30	32.31	1565.68	0.58	62.46	0.49	52.77	3296.05
9	0.59	63.54	0.55	59.23	3763.43	0.50	50.50	0.50	53.85	2899.41	0.46	49.54	0.37	34.46	1707.17	0.41	44.15	0.62	66.77	2948.12
10	0.60	64.62	0.55	59.23	3827.22	0.55	59.23	0.52	56.00	3316.92	0.49	52.77	0.35	37.69	1988.99	0.55	59.23	0.60	64.62	3827.22
11	0.59	63.54	0.60	64.62	4105.56	0.41	44.15	0.49	52.77	2329.96	0.49	52.77	0.30	32.31	1704.85	0.80	86.15	0.60	64.62	5566.86
12	0.70	75.38	0.55	59.23	4465.09	0.46	49.54	0.50	53.85	2667.46	0.48	51.69	0.30	32.31	1670.06	0.86	92.62	0.60	64.62	5984.38
13	0.69	74.31	0.60	64.62	4801.42	0.49	52.77	0.42	45.23	2386.79	0.49	52.77	0.31	33.38	1761.68	0.70	75.38	0.40	43.08	3247.34
14	0.69	74.31	0.64	68.92	5121.51	0.70	75.38	0.50	53.85	4059.17	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.40	43.08	2783.43
15	0.75	80.77	0.50	53.85	4349.11	0.60	64.62	0.42	45.23	2922.60	0.48	51.69	0.38	40.92	2115.41	0.49	52.77	0.40	43.08	2273.14
16	0.80	86.15	0.50	53.85	4639.05	0.41	44.15	0.46	49.54	2187.31	0.49	52.77	0.32	34.46	1818.51	0.66	71.08	0.49	52.77	3750.67
17	0.75	80.77	0.59	63.54	5131.95	0.50	53.85	0.50	53.85	2899.41	0.52	56.00	0.32	34.46	1929.85	0.66	71.08	0.41	44.15	3138.32
18	0.60	64.62	0.59	63.54	4105.56	0.50	53.85	0.49	52.77	2841.42	0.48	51.69	0.33	35.54	1837.06	0.60	64.62	0.61	65.69	4244.73
19	0.70	75.38	0.65	70.00	5276.92	0.46	49.54	0.40	43.08	2133.96	0.48	51.69	0.31	33.38	1725.73	0.52	56.00	0.65	70.00	3928.00
20	0.69	74.31	0.65	70.00	5201.54	0.50	53.85	0.65	70.00	3769.23	0.50	53.85	0.38	40.92	2203.53	0.65	70.00	0.50	53.85	3769.23
21	0.60	64.62	0.55	59.23	3827.22	0.51	54.92	0.50	53.85	2957.40	0.49	52.77	0.31	33.38	1761.68	1.00	107.69	0.60	64.62	6958.58
22	0.85	91.54	0.50	53.85	4228.99	0.60	64.62	0.50	53.85	3479.29	0.46	49.54	0.32	34.46	1707.17	0.60	64.62	0.45	48.46	3131.36
23	0.70	75.38	0.50	53.85	4059.17	0.45	48.46	0.45	48.46	2348.52	0.48	51.69	0.30	32.31	1670.06	0.70	75.38	0.28	30.15	2273.14
24	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.50	53.85	2899.41	0.49	52.77	0.30	32.31	1704.85	0.70	75.38	0.40	43.08	3247.34
25	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.50	53.85	2899.41	0.50	53.85	0.40	43.08	2319.53	0.66	71.08	0.45	48.46	3444.50
Suma	1783.58	1488.31	106127.61		1375.23	1319.23	72929.39	12.02	1294.46	8.13	875.54	45439.52			1705.85		1363.38	93637.32		
Promedio	71.34	59.53	4245.10		55.01	52.77	3479.29	0.48	51.78	0.33	35.02	43.08			68.23		54.54	3745.29		
D. E. (σ)	12.97	5.70	836.57		8.51	5.82	639.82	0.02	2.35	0.04	4.29	262.96			13.45		12.95	1293.04		

Promedio del área de las células del haz: 4245.10

Promedio del área de las células del envés: 2917.18

El promedio de las células del haz es:

El promedio de las células guardia es:

El promedio de las células subsidiarias es:

255.57 células/mm cuadrados

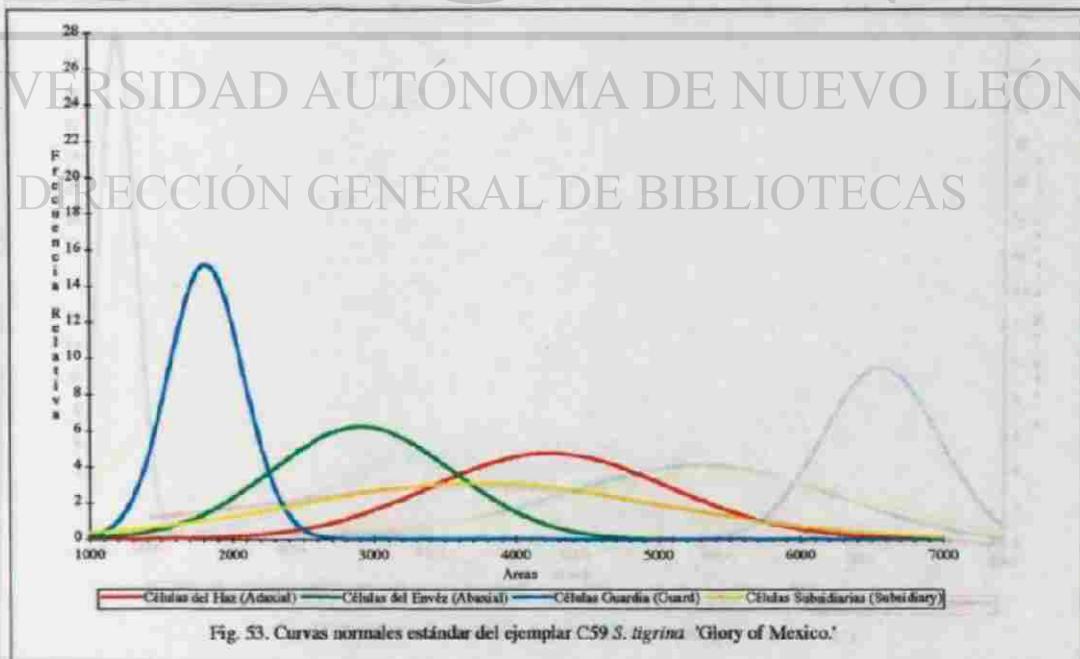
micras cuadradas

342.80 células/mm cuadrados

1.46 veces el promedio de las células del envés.

1.48 veces el promedio del ancho.

1.25 veces el promedio del ancho.



Cuadro 54. Datos estadísticos de C60 S. Love Potion 'No. 9.'

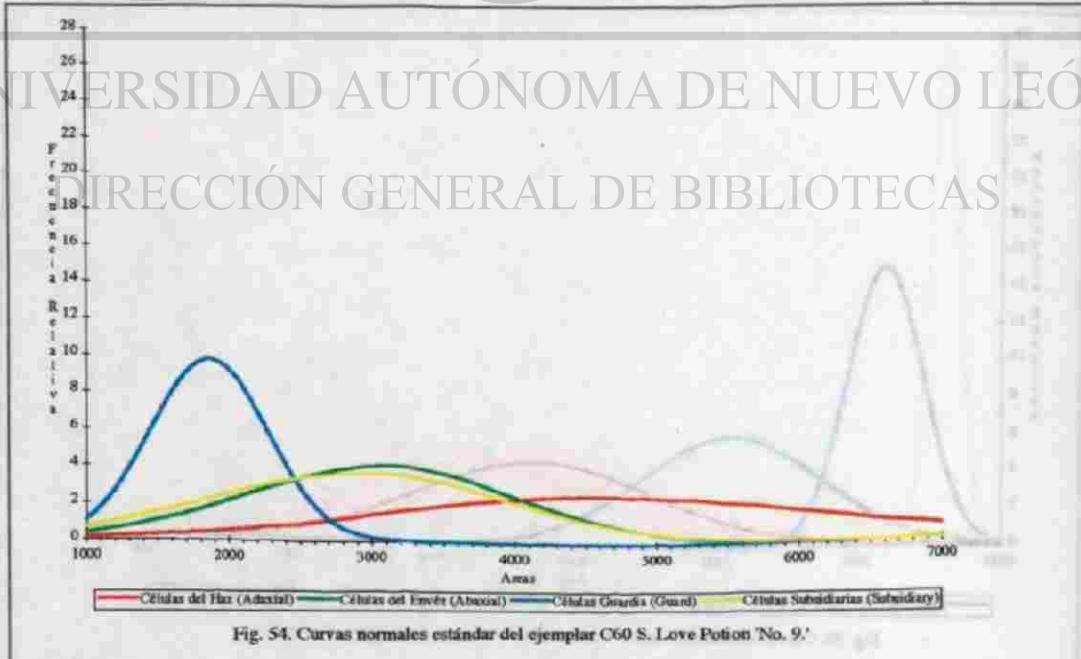
C60 S. Love Potion 'No. 9' Pla300996-16 (conreta x tijera) Híbrido primario hecho por hombre (Man-made primary hybrid).

#	Células del Haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a) Indice	Ancho (A _a) Indice	Área mm ²	Largo (L _b) Indice	Ancho (A _b) Indice	Área mm ²	Largo (L _g) Indice	Ancho (A _g) Indice	Área mm ²	Largo (L _s) Indice	Ancho (A _s) Indice	Área mm ²								
	[L _a]	[A _a]	[mm ²]	[L _b]	[A _b]	[mm ²]	[L _g]	[A _g]	[mm ²]	[L _s]	[A _s]	[mm ²]								
1	0.70	75.38	0.62	66.77	5033.37	0.58	62.46	0.40	43.08	2690.65	0.50	53.85	0.35	37.69	2029.39	0.60	64.62	0.45	48.46	3131.36
2	0.80	86.15	0.69	74.31	6401.89	0.62	66.77	0.45	48.46	3235.74	0.50	53.85	0.40	43.08	2319.53	0.50	53.85	0.55	59.23	3189.35
3	0.82	88.31	0.70	75.38	6657.04	0.65	70.00	0.40	43.08	3015.38	0.50	53.85	0.35	37.69	2029.39	0.35	37.69	0.50	53.85	2029.59
4	0.72	77.54	0.58	62.46	4843.17	0.65	70.00	0.45	48.46	3392.31	0.40	43.08	0.40	43.08	1855.62	0.67	72.15	0.43	46.31	3341.28
5	0.76	81.85	0.54	58.15	4759.67	0.60	64.62	0.48	51.69	3340.12	0.50	53.85	0.34	36.62	1971.60	0.55	59.23	0.26	28.00	1658.46
6	0.86	92.62	0.60	64.62	3984.58	0.88	94.77	0.42	45.23	4286.48	0.50	53.85	0.28	30.15	1623.67	0.60	64.62	0.39	42.00	2713.83
7	0.90	96.92	0.58	53.85	5218.93	0.59	63.54	0.43	46.31	2942.32	0.50	53.85	0.32	34.46	1855.62	0.58	62.46	0.25	26.92	1681.66
8	0.88	94.77	0.64	68.92	6531.79	0.58	62.46	0.46	49.54	3094.25	0.42	45.23	0.32	34.46	1558.72	0.50	53.85	0.35	37.69	2029.59
9	0.95	102.31	0.70	75.38	7712.42	0.60	64.62	0.28	30.15	1948.40	0.50	53.85	0.38	40.92	2203.55	0.54	58.15	0.52	56.00	3256.61
10	0.70	75.38	0.40	43.08	3247.34	0.35	37.69	0.28	30.15	1136.57	0.50	53.85	0.38	40.92	2203.55	0.52	56.00	0.50	53.85	3015.38
11	1.10	118.46	0.52	56.00	6633.85	0.50	53.85	0.30	32.31	1739.64	0.50	53.85	0.31	33.38	1797.63	0.72	77.54	0.35	37.69	2922.60
12	0.80	86.15	0.40	43.08	3711.34	0.60	64.62	0.35	37.69	2485.50	0.50	53.85	0.25	26.92	1449.70	0.50	53.85	0.20	21.54	1159.76
13	1.00	107.69	0.42	45.23	4871.01	0.85	91.54	0.30	32.31	2957.40	0.45	48.46	0.21	22.62	1095.98	0.55	59.23	0.30	32.31	1913.61
14	0.80	86.15	0.42	45.23	3896.80	0.95	102.31	0.45	48.46	4957.99	0.40	43.08	0.35	37.69	1623.67	0.48	51.69	0.25	26.92	1361.72
15	0.60	64.62	0.40	43.08	2783.43	0.60	64.62	0.30	32.31	2087.57	0.43	46.31	0.38	40.92	1895.05	0.80	86.15	0.35	59.23	5102.96
16	0.70	75.38	0.58	62.46	4708.64	0.68	73.73	0.36	38.77	2889.10	0.45	48.46	0.30	32.31	1565.68	0.60	64.62	0.60	4175.15	
17	0.59	63.54	0.58	62.46	3968.71	0.65	70.00	0.31	33.38	2336.92	0.52	56.00	0.35	37.69	2110.77	0.68	73.73	0.49	52.77	3864.33
18	0.72	77.54	0.40	43.08	3340.12	0.59	63.54	0.39	42.00	2668.62	0.35	37.69	0.30	32.31	1217.75	0.60	64.62	0.40	43.08	2783.43
19	0.46	49.54	0.45	48.46	2400.71	0.90	96.92	0.36	38.77	3757.63	0.48	51.69	0.50	53.85	2783.43	0.60	64.62	0.50	4175.15	
20	0.76	75.38	0.52	56.00	4221.54	0.59	63.54	0.41	44.15	2805.47	0.32	34.46	0.30	32.31	1113.37	0.64	68.92	0.55	59.23	4082.37
21	0.82	88.31	0.48	51.69	4864.83	0.75	80.77	0.50	53.85	4349.11	0.50	53.85	0.31	33.38	1797.63	0.65	70.00	0.50	53.85	3769.23
22	0.85	91.54	0.50	53.85	4928.99	0.85	91.54	0.42	45.23	4140.53	0.48	51.69	0.31	33.38	1725.73	0.60	64.62	0.60	4175.15	
23	0.72	77.54	0.52	56.00	4342.15	1.00	107.69	0.58	40.92	4407.10	0.52	56.00	0.36	38.77	2171.08	0.48	51.69	0.40	43.08	2226.75
24	0.80	86.15	0.36	38.77	3340.12	0.91	98.00	0.42	45.23	4432.61	0.52	56.00	0.40	43.08	2412.31	0.60	64.62	0.28	30.15	1948.40
25	0.66	71.08	0.25	26.92	1913.61	0.70	75.38	0.30	32.31	2435.50	0.50	53.85	0.38	40.92	2203.55	0.70	75.38	0.50	53.85	4059.17
Suma	2090.31	1375.23	116015.75		1854.46	1033.85	77432.75	11.74	1264.31	8.53	918.62	46614.36			1573.38		1159.85	75796.89		
Promedio	83.61	55.01	4640.75		74.18	41.35	700.75	0.47	50.57	0.34	36.74	1834.75			62.94		46.39	2951.89		
D.E. (t)	14.61	12.38	1463.51		16.96	7.17	950.08	0.05	5.82	0.06	6.24	407.75			10.08		13.26	1056.49		

Promedio del área de las células del haz: 4640.69
 Promedio del área de las células del envés: 3097.31
 El promedio de las células del haz es 1.56 veces el promedio de las células del envés.
 El promedio de las células guardia es 1.38 veces el promedio del ancho.
 El promedio de las células subsidiarias es 1.36 veces el promedio del ancho.

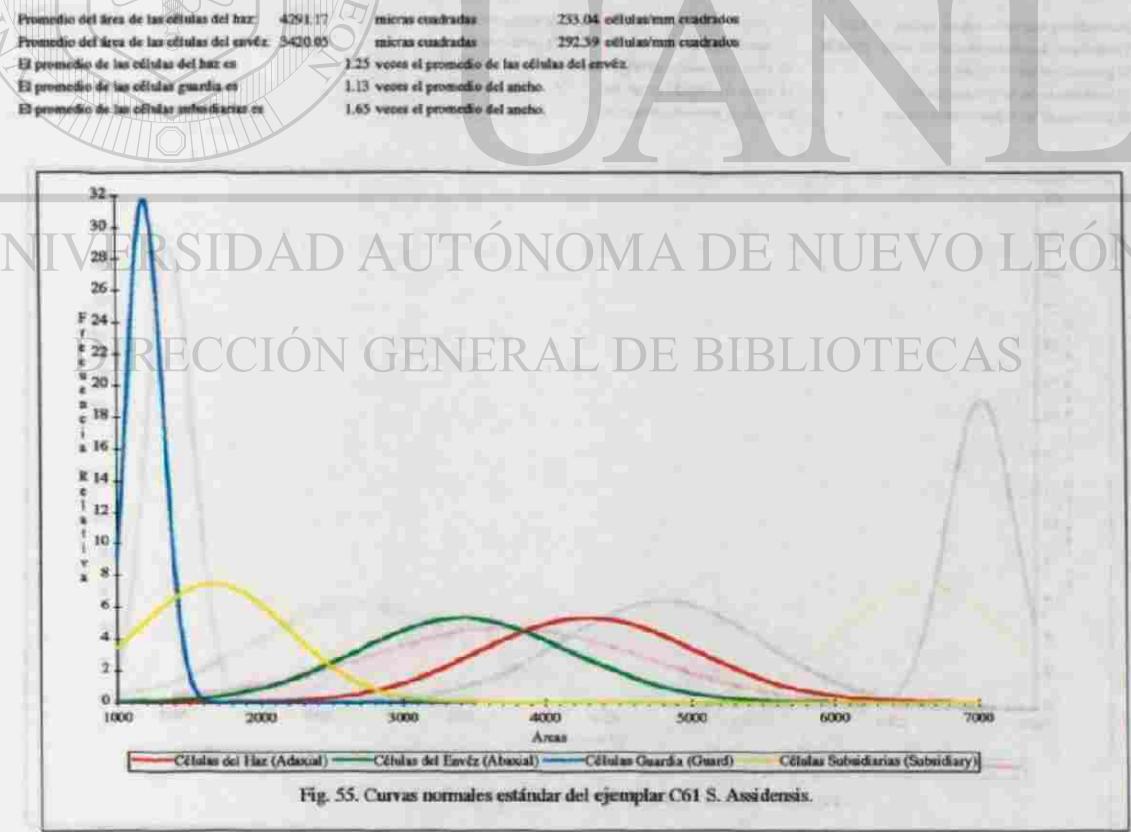
215.49 células/mm cuadrados

322.86 células/mm cuadrados



Cuadro 55. Datos estadísticos de C61 S. Assidensis.

C61 S. Assidensis P#091196-1 (<i>wardii</i> × <i>tigrina</i>) por Goldschmidt, 1922																				
#	Células del Ház (Adaxial Cells)			Células del Envíz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área	Largo (L _e)	Ancho (A _e)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área								
	Índice	P _{10%}	P _{50%}	Índice	P _{10%}	P _{50%}	Índice	P _{10%}	P _{50%}	Índice	P _{10%}	P _{50%}								
1	0.70	73.38	0.40	43.08	3247.34	0.65	70.00	0.68	73.23	5126.15	0.39	42.90	0.3	32.31	1356.92	0.49	52.77	0.3	32.31	1704.85
2	0.72	77.54	0.50	53.85	4175.15	0.52	56.00	0.51	54.92	3075.69	0.39	42.00	0.3	32.31	1356.92	0.45	48.46	0.18	19.38	939.41
3	0.78	84.00	0.45	48.46	4070.77	0.62	66.77	0.45	48.46	3295.74	0.38	40.92	0.3	32.31	1322.13	0.5	53.85	0.45	48.46	2609.47
4	0.69	74.31	0.48	51.69	5841.14	0.70	75.38	0.49	52.77	3977.99	0.35	37.69	0.3	32.31	1217.75	0.5	53.85	0.31	33.38	1797.63
5	0.72	77.54	0.58	62.46	4843.17	0.68	73.23	0.42	45.23	3312.28	0.35	37.69	0.3	32.31	1217.73	0.5	53.85	0.4	43.08	2319.35
6	0.72	77.54	0.60	64.62	5010.18	0.57	61.38	0.57	61.38	3768.07	0.3	32.31	0.28	30.15	974.20	0.46	49.54	0.21	22.62	1120.33
7	0.71	76.46	0.40	43.08	3293.73	0.70	75.38	0.45	48.46	3653.25	0.32	34.46	0.3	32.31	1113.37	0.6	64.62	0.36	38.77	2505.09
8	0.97	104.46	0.48	51.69	5399.86	0.50	53.85	0.55	59.23	3189.35	0.37	39.85	0.29	31.23	1244.43	0.5	53.85	0.35	37.69	2029.59
9	0.77	82.92	0.40	43.08	3572.07	0.45	48.46	0.54	58.15	2818.22	0.31	33.38	0.31	33.38	1114.53	0.42	45.23	0.28	30.15	1363.88
10	0.72	77.54	0.50	53.85	4175.15	0.64	68.92	0.50	53.85	3711.34	0.36	38.77	0.36	38.77	1503.05	0.4	43.08	0.35	37.69	1623.07
11	0.63	67.85	0.52	56.00	3799.38	0.61	65.69	0.59	63.54	4173.99	0.35	37.69	0.29	31.23	1177.16	0.42	45.23	0.22	23.69	1071.62
12	0.80	86.15	0.56	60.31	5195.74	0.60	64.62	0.45	48.46	3131.36	0.33	35.54	0.29	31.23	1109.89	0.5	53.85	0.29	31.23	1681.66
13	0.80	86.15	0.46	49.45	4267.99	0.53	54.92	0.59	63.54	3489.79	0.31	33.38	0.3	32.31	1078.58	0.4	43.08	0.2	21.54	927.81
14	1.00	107.69	0.42	45.23	4871.01	0.52	56.00	0.59	63.54	3558.15	0.37	34.46	0.3	32.31	1113.37	0.58	62.46	0.2	21.54	1345.33
15	0.64	68.92	0.40	43.08	2968.99	0.65	70.00	0.45	48.46	3392.31	0.33	35.54	0.3	32.31	1148.17	0.32	34.46	0.26	28.00	964.92
16	0.76	81.85	0.42	45.23	3701.96	0.80	86.15	0.49	52.77	4546.27	0.31	33.38	0.3	32.31	1078.38	0.45	48.46	0.2	21.54	1043.79
17	0.75	80.77	0.51	54.92	4436.09	0.50	53.85	0.49	52.77	2841.42	0.37	39.85	0.3	32.31	1287.54	0.5	53.85	0.21	22.62	1217.75
18	0.95	102.31	0.50	53.85	5508.87	0.57	61.38	0.57	63.54	3768.07	0.31	33.38	0.31	33.38	1114.53	0.5	53.85	0.3	32.31	1799.64
19	0.70	75.38	0.50	53.85	4059.17	0.70	75.38	0.36	58.77	2922.60	0.31	33.38	0.29	31.23	1042.63	0.56	60.31	0.31	33.38	2013.35
20	0.85	91.54	0.55	59.23	5421.89	0.50	53.85	0.40	43.08	2319.35	0.31	33.38	0.31	33.38	1114.53	0.5	53.85	0.28	30.15	1623.67
21	0.62	66.77	0.52	56.00	3739.08	0.42	45.23	0.42	45.23	2045.82	0.37	39.85	0.3	32.31	1287.34	0.55	59.23	0.3	32.31	1913.61
22	0.82	88.31	0.58	62.46	5515.83	0.50	53.85	0.41	44.15	2377.51	0.32	34.46	0.3	32.31	1113.37	0.55	59.23	0.3	32.31	1913.61
23	0.85	91.54	0.45	48.46	4436.09	0.49	52.77	0.58	62.46	3296.05	0.35	37.69	0.3	32.31	1217.75	0.5	53.85	0.49	52.77	2841.42
24	0.67	72.15	0.52	56.00	4040.61	0.70	75.38	0.61	65.69	4952.19	0.35	37.69	0.31	33.38	1258.34	0.5	53.85	0.28	30.15	1623.67
25	0.60	64.62	0.55	57.08	3688.05	0.54	58.15	0.45	48.46	2818.22	0.39	42.00	0.31	33.38	1402.15	0.5	53.85	0.32	34.46	1855.62
Suma			2039.69	1317.06	107279.25	1576.02	1358.00	85501.22	8.55	920.77	7.55	813.08	29964.80	1308.46		791.54	41790.91			
Promedio			81.59	52.68	4299.17	63.06	54.32	5620.00	0.34	36.83	0.30	32.52	3108.50	52.34		31.66	1671.64			
D.E. (σ)			11.36	6.54	750.50	10.35	8.57	759.37	0.03	3.19	0.01	1.52	125.73	6.67		8.42	533.89			



Cuadro 56. Datos estadísticos de C62 S. tigrinus.

Células del Fijo (Adaxial Cells)				Células del Envío (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)							
Largo (L _a)	Ancho (A _b)	Área (μm ²)	Índice	Largo (L _e)	Ancho (A _c)	Área (μm ²)	Índice	Largo (L _g)	Ancho (A _g)	Área (μm ²)	Índice	Largo (L _s)	Ancho (A _s)	Área (μm ²)	Índice				
1. 0.82	18.31	0.65	70.00	6181.34	0.62	66.77	0.48	51.69	3451.46	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.52	56.00	2412.31
2. 0.80	86.15	0.51	54.92	4751.83	0.80	86.15	0.59	63.54	5474.08	0.41	44.15	0.38	40.92	1806.91	0.40	43.08	0.38	40.92	1762.84
3. 0.82	88.31	0.50	53.83	4755.05	0.70	75.38	0.50	53.83	4059.17	0.40	43.08	0.35	37.69	1623.67	0.41	44.15	0.38	40.92	1806.91
4. 0.62	66.77	0.52	56.00	3739.08	0.70	75.38	0.52	56.00	4221.54	0.39	42.00	0.26	28.00	1176.00	0.48	51.69	0.42	45.23	2338.08
5. 0.80	86.15	0.61	65.69	5639.64	0.56	60.31	0.46	49.54	2987.55	0.40	43.08	0.30	32.31	1391.72	0.49	52.77	0.39	42.00	221.63
6. 0.61	65.69	0.71	76.46	5002.93	0.55	53.83	0.55	59.23	3189.35	0.35	37.69	0.24	25.83	974.20	0.47	50.62	0.52	56.00	2834.46
7. 0.48	51.69	0.48	51.69	2677.09	0.61	65.69	0.59	63.54	4173.95	0.40	43.08	0.31	33.38	1488.11	0.42	45.23	0.42	45.23	2045.82
8. 0.65	70.00	0.50	53.83	3769.23	0.55	59.23	0.50	53.83	3189.35	0.38	40.92	0.31	33.38	1366.20	0.49	52.77	0.56	60.31	3182.39
9. 0.72	77.54	0.65	70.00	5427.69	0.50	53.85	0.49	52.77	2841.42	0.37	39.85	0.30	32.31	1287.34	0.49	52.77	0.50	53.85	2841.42
10. 0.82	88.31	0.72	77.54	6847.24	0.70	75.38	0.50	53.85	4059.17	0.41	44.15	0.40	43.08	1902.01	0.41	44.15	0.32	34.46	1521.61
11. 0.70	75.38	0.62	64.77	5883.37	0.70	75.38	0.41	44.15	3328.52	0.42	45.23	0.40	43.08	1948.40	0.48	51.69	0.22	23.69	1241.71
12. 0.70	75.38	0.68	73.23	5520.47	0.59	63.54	0.39	42.00	2668.62	0.40	43.08	0.34	36.62	1577.28	0.46	49.54	0.28	30.15	1483.77
13. 0.60	64.62	0.70	75.38	4871.01	0.69	74.31	0.49	52.77	3921.16	0.35	37.69	0.34	36.62	1380.12	0.44	47.38	0.29	31.23	1479.86
14. 0.80	86.15	0.53	57.06	4917.40	0.66	71.08	0.42	45.23	3214.86	0.39	42.00	0.28	30.15	1266.46	0.38	40.92	0.29	31.23	1278.06
15. 0.62	66.77	0.52	56.00	3739.08	0.40	43.08	0.53	57.08	2458.70	0.35	37.69	0.33	35.54	1339.33	0.43	46.31	0.32	34.46	1595.83
16. 0.74	79.69	0.50	53.85	4291.12	0.60	64.62	0.46	49.54	3206.95	0.36	38.77	0.30	33.38	1252.54	0.41	44.15	0.29	31.23	1378.94
17. 0.61	65.69	0.60	64.62	4244.73	0.72	77.54	0.55	59.23	4592.66	0.32	34.46	0.29	31.23	1076.26	0.45	48.46	0.26	28.00	1356.92
18. 0.60	64.62	0.68	73.23	4731.83	0.74	79.69	0.50	53.85	4291.12	0.36	38.77	0.31	33.38	1294.30	0.48	51.69	0.31	33.38	1725.73
19. 0.50	53.85	0.49	52.77	2841.42	0.57	61.38	0.53	57.08	3503.64	0.41	44.15	0.30	32.31	1426.51	0.45	48.46	0.39	42.00	2055.38
20. 0.51	54.92	0.60	64.62	3348.88	0.73	80.77	0.45	48.46	3914.20	0.40	43.08	0.25	26.92	1159.76	0.50	53.85	0.28	30.15	1623.67
21. 0.62	66.77	0.59	63.54	5424.41	0.60	64.62	0.58	62.46	4035.98	0.32	34.46	0.35	37.69	1298.93	0.49	52.77	0.29	31.23	1648.07
22. 0.70	75.38	0.64	68.92	5195.74	0.61	65.69	0.50	53.85	3537.28	0.40	43.08	0.30	32.31	1391.72	0.38	40.92	0.32	34.46	1410.27
23. 0.79	85.06	0.60	64.62	5478.26	0.51	54.92	0.43	46.31	2543.36	0.36	38.77	0.31	33.38	1294.30	0.30	32.31	0.21	22.62	730.65
24. 0.65	70.00	0.55	59.23	4146.15	0.59	63.54	0.46	49.54	3147.60	0.40	43.08	0.29	31.23	1345.33	0.40	43.08	0.20	21.54	927.81
25. 0.69	74.31	0.60	64.62	4801.42	0.62	66.77	0.50	53.85	3395.27	0.36	38.77	0.29	31.23	1210.79	0.41	44.15	0.31	33.38	1474.06
Suma	1827.34		1588.46	116428.62		1678.92		1353.23	89600.98		1024.15		8483.25	34620.09		1176.00	933.69	4-645.86	
Promedio	73.10		63.54	4921.34		67.16		50.33			49.97		33.73			47.04		37.35	1773.82
D.E. (σ)	11.15		8.19	969.70		10.04		5.76			3.05		4.39			5.17		10.68	595.79

Promedio del área de las células del hígado: 4657

Proporción del área de las células del envés: 3.5%

El promedio de las ópticas del haz es:

El promedio de las células guardadas es

micros cuadradas

micas cuadradas

30 veces el promedio de las células

21 veces el promedio del ancho.

234/72 editoras/mex. enadrado

279.01 *ctinodactylus quadrivittatus*

u del coñéz.

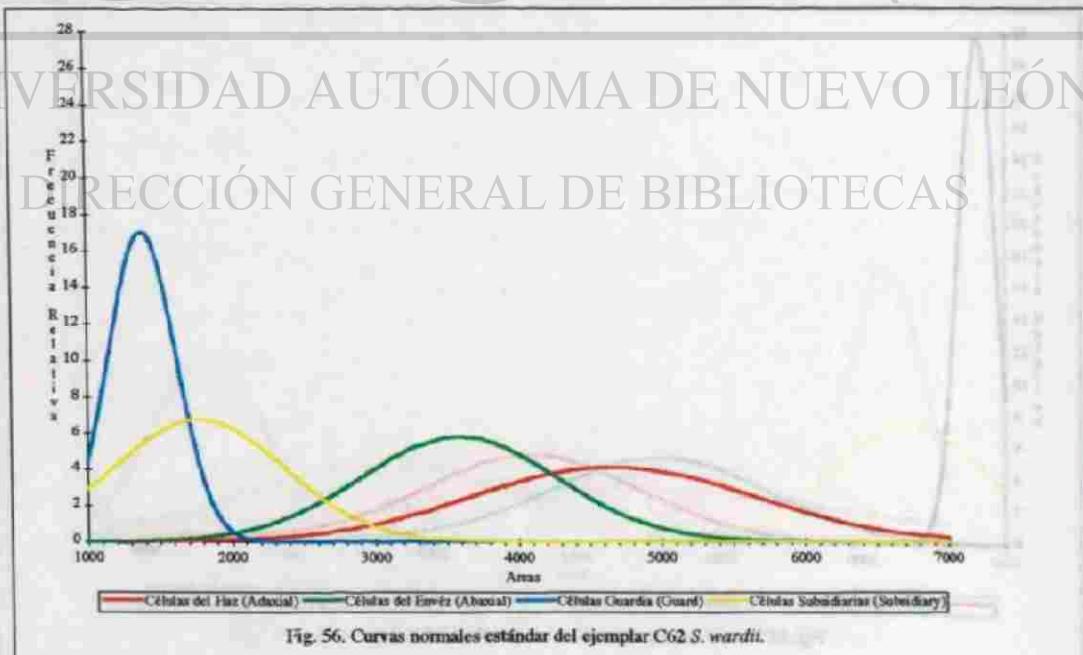


Fig. 56. Curvas normales estándar del ejemplar C62 *S. wardii*.

Cuadro 57. Datos estadísticos de C63 S. Penelope.

C63 S. Penelope				PLD91196-3 (colección: se secó para la microscopía por Hey, 1968)																
#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _a)	Ancho (A _a)	Área (μm ²)	Largo (L _c)	Ancho (A _c)	Área (μm ²)	Largo (L _g)	Ancho (A _g)	Área (μm ²)	Largo (L _s)	Ancho (A _s)	Área (μm ²)								
	Índice	μm	μm ²	Índice	μm	μm ²	Índice	μm	μm ²	Índice	μm	μm ²								
1	0.80	86.15	0.55	59.25	5102.96	0.70	75.38	0.42	45.23	3409.70	0.40	43.08	0.29	31.25	1345.35	0.61	65.69	0.40	43.08	2829.82
2	0.68	73.29	0.38	40.92	2996.83	0.75	80.77	0.40	43.08	3479.29	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.30	32.31	1799.64
3	0.94	101.23	0.45	48.46	4905.80	0.69	74.31	0.42	45.25	3360.99	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.27	29.08	1565.68
4	0.84	90.46	0.45	48.46	4583.90	0.71	76.46	0.48	51.69	3952.47	0.40	43.08	0.30	32.31	1391.72	0.52	56.00	0.20	21.54	1206.15
5	0.70	75.38	0.42	45.23	3409.70	0.44	47.38	0.44	47.38	2245.30	0.48	51.69	0.29	31.25	1614.39	0.50	53.85	0.36	38.77	2087.57
6	0.61	65.69	0.40	43.08	2829.82	0.46	49.54	0.50	53.85	2667.46	0.38	40.92	0.29	31.25	1278.06	0.50	53.85	0.25	26.92	1449.70
7	1.00	107.69	0.48	51.69	5565.86	0.50	53.85	0.59	63.54	3421.30	0.40	43.08	0.33	35.54	1330.89	0.46	49.54	0.41	44.15	2187.31
8	0.65	70.00	0.54	58.15	4070.77	0.70	75.38	0.54	58.15	4383.90	0.35	37.69	0.26	28.00	1055.38	0.48	51.69	0.42	45.23	2338.08
9	0.73	78.62	0.40	43.08	3386.51	0.45	48.46	0.35	37.69	1826.63	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.25	26.92	1449.70
10	0.69	64.62	0.53	39.23	3807.22	0.51	54.92	0.39	42.00	2306.77	0.40	43.08	0.29	31.25	1345.33	0.39	42.00	0.21	22.62	949.85
11	1.08	116.31	0.41	44.15	5135.43	0.48	51.69	0.35	37.69	1948.40	0.40	43.08	0.32	34.46	1484.50	0.41	44.15	0.28	30.15	1331.41
12	0.50	53.85	0.49	52.77	2841.42	0.45	48.46	0.39	42.00	2085.38	0.41	44.15	0.30	32.31	1426.51	0.48	51.69	0.45	48.46	2505.09
13	0.63	67.85	0.40	43.08	2922.60	0.50	53.85	0.35	57.69	2029.59	0.40	43.08	0.32	34.46	1484.50	0.42	45.23	0.38	40.92	1850.98
14	0.70	75.38	0.58	62.46	4708.64	0.58	82.46	0.35	37.69	2354.32	0.40	43.08	0.29	31.25	1345.33	0.40	43.08	0.32	34.46	1484.50
15	0.72	77.54	0.50	53.85	4173.15	0.60	64.62	0.40	43.08	2783.48	0.40	43.08	0.30	32.31	1391.72	0.42	45.23	0.32	34.46	1558.72
16	0.90	96.92	0.50	53.85	5218.93	0.59	63.54	0.48	51.69	3284.45	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.27	29.08	1565.68
17	0.82	88.31	0.50	53.85	4755.03	0.59	63.54	0.46	49.54	3147.60	0.40	43.08	0.28	30.15	1298.93	0.49	52.77	0.28	30.15	1591.20
18	0.63	67.85	0.53	57.08	3872.45	0.63	67.85	0.40	43.08	2922.60	0.44	47.38	0.25	26.92	1275.74	0.39	42.00	0.22	23.69	995.08
19	0.78	94.00	0.36	38.77	3256.61	0.59	63.54	0.38	40.92	2600.19	0.40	43.08	0.29	31.25	1345.33	0.57	56.00	0.30	32.31	1809.21
20	0.63	67.85	0.49	52.77	3580.19	0.64	58.92	0.43	46.31	3191.67	0.43	46.31	0.30	32.31	1496.09	0.50	53.85	0.30	32.31	1739.64
21	0.70	75.38	0.45	48.46	3633.25	0.45	48.46	0.30	32.31	1565.68	0.46	49.54	0.23	24.77	1227.03	0.54	58.15	0.53	57.08	3319.24
22	0.60	64.62	0.46	49.54	3200.95	0.45	48.46	0.36	38.77	1878.82	0.39	42.00	0.25	26.92	1130.77	0.50	53.85	0.32	34.46	1855.62
23	0.60	64.62	0.50	53.85	3479.29	0.50	53.85	0.29	31.25	1681.66	0.40	43.08	0.23	24.77	1066.98	0.42	45.23	0.26	28.00	1366.46
24	0.90	96.92	0.45	48.46	4697.04	0.56	60.31	0.45	48.46	2922.60	0.50	53.85	0.30	32.31	1739.64	0.40	43.08	0.26	28.00	1206.15
25	0.70	75.38	0.40	43.08	3347.34	0.59	63.54	0.35	37.69	2394.91	0.44	47.38	0.31	33.38	1381.92	0.40	43.08	0.28	30.15	1298.95
Suma		1985.85		1253.54	99234.70		1519.54		1106.00	67795.11	10.28	1107.08	7.22	77.54	34422.53		1265.38		844.31	43181.46
Promedio		79.43		50.14	3908.00		60.78		44.24	44.24	0.41	44.28	0.29	31.10	31.10		50.62		33.77	1727.26
D.E. (σ)		15.29		6.41	840.61		10.40		7.67	740.51	0.03	3.41	0.03	2.79	159.09		6.06		8.63	564.83

Promedio del área de las células del haz:

251.95 células/mm cuadrados

Promedio del área de las células del envés:

368.76 células/mm cuadrados

El promedio de las células del haz es:

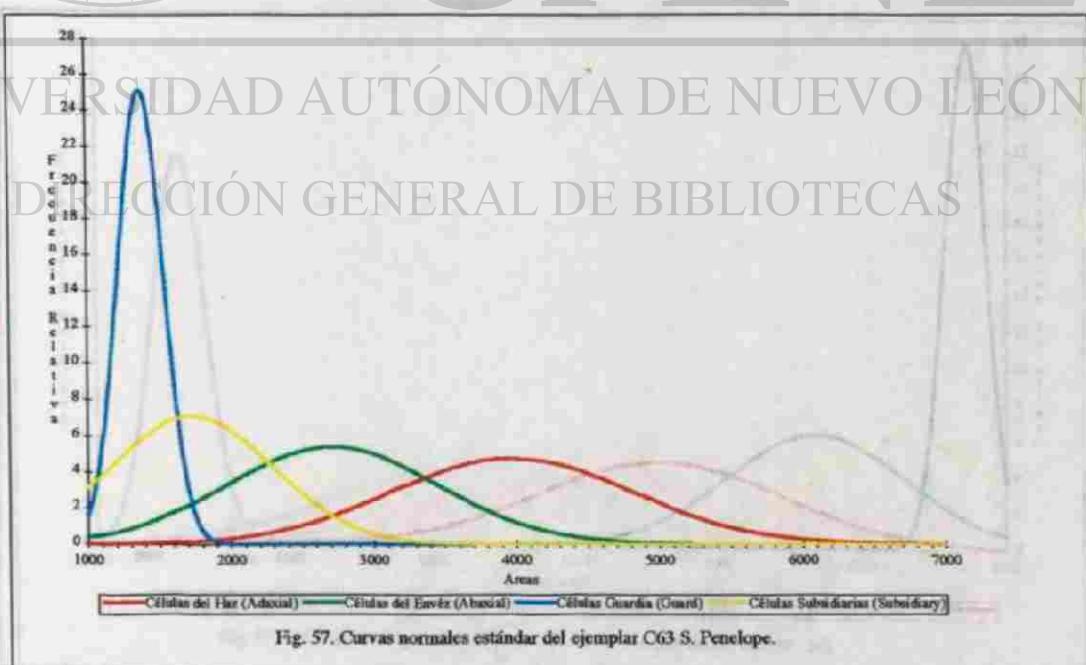
1.46 veces el promedio de las células del envés.

El promedio de las células guardia es:

1.42 veces el promedio del ancho.

El promedio de las células subsidiarias es:

1.50 veces el promedio del ancho.

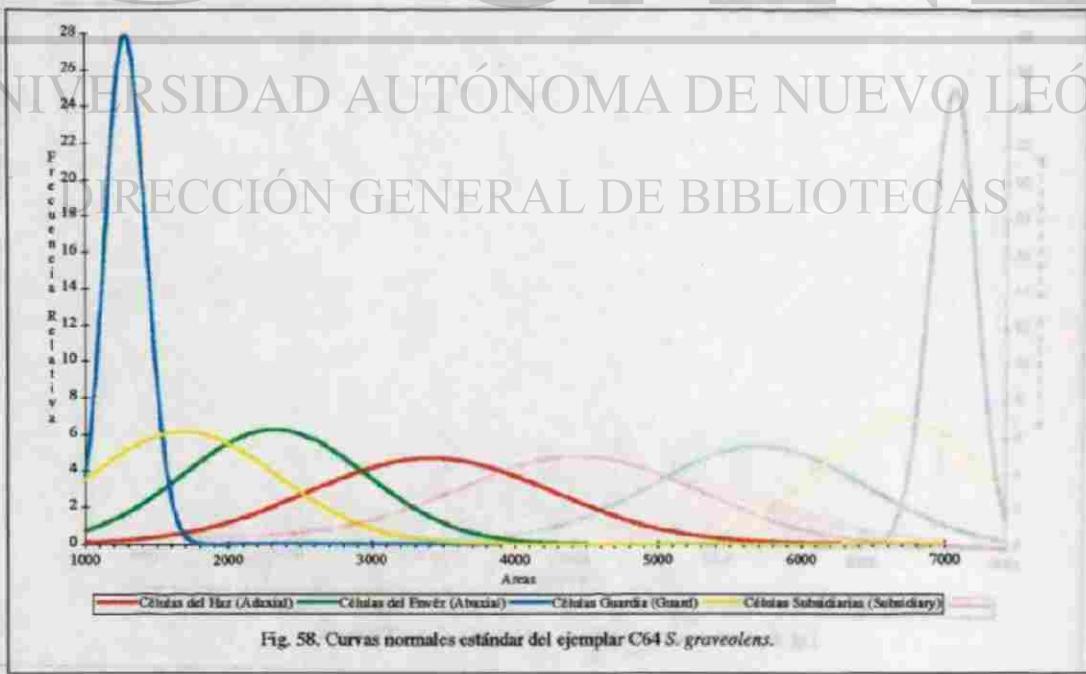


Cuadro S8. Datos estadísticos de C64.S. graveolens.

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (L _a) Índice	Ancho (A _a) Índice	Área μm ²	Largo (L _b) Índice	Ancho (A _b) Índice	Área μm ²	Largo (L _g) Índice	Ancho (A _g) Índice	Área μm ²	Largo (L _s) Índice	Ancho (A _s) Índice	Área μm ²
	L _a	A _a	L _b	A _b	L _g	A _g	L _s	A _s		L _a	A _a	L _b
1	0.78	84.00	0.49	52.77	4482.61	0.45	48.46	0.36	38.77	1878.82	0.40	43.08
2	0.96	103.38	0.48	51.69	3344.19	0.57	61.38	0.45	48.46	2974.79	0.38	40.92
3	0.78	84.00	0.45	48.46	4070.77	0.55	59.23	0.45	48.46	2870.41	0.38	40.92
4	0.65	70.00	0.49	52.77	3693.85	0.40	43.08	0.36	38.77	1670.06	0.39	42.00
5	0.60	64.62	0.58	62.46	4085.98	0.40	43.08	0.30	32.31	1391.72	0.38	40.92
6	0.53	57.08	0.40	43.08	2458.70	0.45	48.46	0.30	32.31	1565.68	0.35	37.69
7	0.59	63.54	0.45	48.46	3079.17	0.70	75.58	0.28	30.15	2273.14	0.38	40.92
8	0.70	75.38	0.48	51.69	3896.80	0.55	59.23	0.40	43.08	2551.48	0.38	40.92
9	0.65	70.00	0.52	56.00	3920.00	0.57	61.38	0.40	43.08	2644.26	0.36	38.77
10	0.57	61.38	0.31	33.38	2049.30	0.48	51.69	0.30	32.31	1670.06	0.40	43.08
11	0.69	74.31	0.30	32.31	2400.71	0.40	43.08	0.40	42.00	1855.62	0.39	40.92
12	0.62	66.77	0.40	43.08	2876.21	0.60	64.62	0.29	31.23	2017.99	0.33	35.54
13	0.79	85.08	0.52	56.00	4764.31	0.55	59.23	0.35	37.69	2232.54	0.38	40.92
14	0.84	90.46	0.52	56.00	5065.85	0.55	59.23	0.30	32.31	1913.61	0.39	42.00
15	0.76	81.85	0.38	40.92	3349.40	0.65	70.00	0.35	37.69	2638.46	0.40	43.08
16	0.80	86.15	0.36	38.77	3340.12	0.60	64.62	0.40	43.08	2783.43	0.40	43.08
17	0.58	62.46	0.40	43.08	2690.65	0.60	64.62	0.25	24.77	1600.47	0.30	32.31
18	0.77	82.92	0.30	32.31	2679.05	0.75	80.77	0.26	28.00	2261.54	0.38	40.92
19	0.68	73.23	0.42	45.23	3312.28	0.62	66.77	0.39	42.00	2804.31	0.40	43.08
20	0.77	82.92	0.36	38.77	3214.86	0.60	64.62	0.42	45.23	2922.60	0.38	40.92
21	0.64	68.92	0.41	44.15	3043.22	0.60	64.62	0.38	40.92	2644.26	0.34	36.62
22	0.71	76.46	0.39	43.00	3211.58	0.53	57.08	0.40	43.08	2458.70	0.38	40.92
23	0.70	75.38	0.32	34.46	2597.87	0.44	47.38	0.32	34.46	1682.95	0.36	38.77
24	0.61	65.69	0.40	43.08	2829.82	0.76	81.85	0.30	32.31	2644.26	0.42	43.08
25	0.66	71.08	0.40	43.08	3061.77	0.63	67.85	0.58	62.46	4237.77	0.40	43.08
Suma	1877.08	1134.00	85418.88		1507.69		966.00	58138.93		1017.69	789.38	3220.82
Promedio	75.08	45.36	3434.78		60.31		38.64	3022.9		40.71	31.58	1059.4
O.E. (σ)	10.74		8.14		10.85		8.09	634.30		2.82	2.01	148.12

Promedio del área de las células del haz: 3416.76
 Promedio del área de las células del envéz: 2325.56
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:

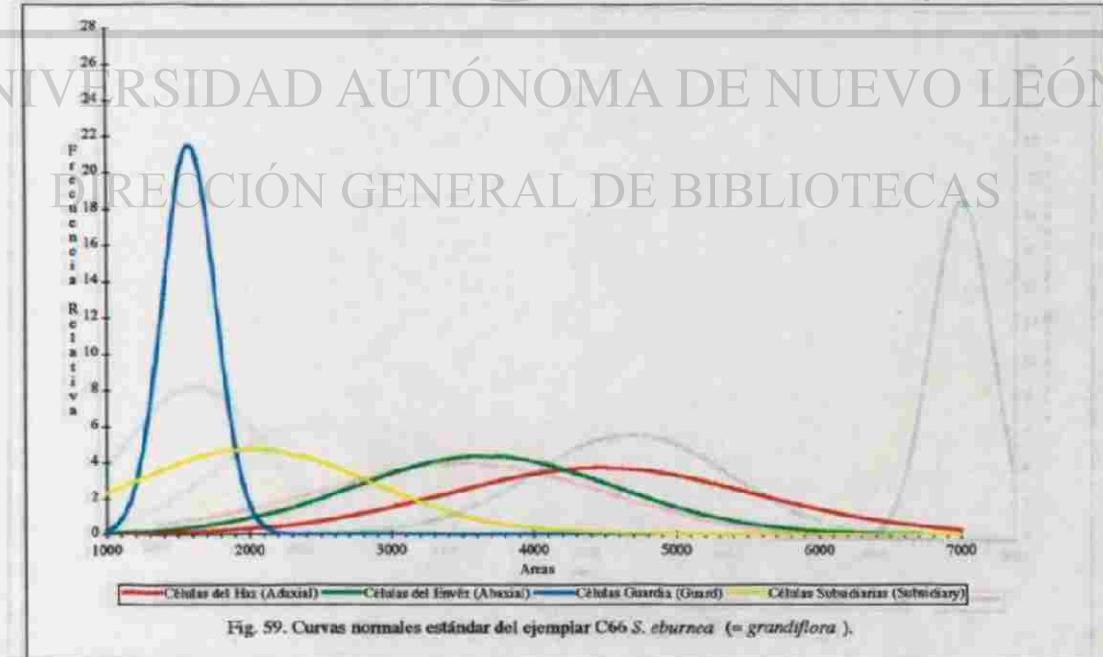
31.58 células cuadradas
 43.00 células cuadradas
 1.47 veces el promedio de las células del envéz.
 1.29 veces el promedio del ancho.
 1.61 veces el promedio del ancho.



Cuadro 59. Datos estadísticos de C66 *S. eburnea*.

#	Células del Ház (Adaxial Cells)			Células del Envéz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subodiarias (Subidiary Cells)																	
	Largo (L _a)	Ancho (A _a)	Área (μm ²)	Largo (L _b)	Ancho (A _b)	Área (μm ²)	Largo (L _g)	Ancho (A _g)	Área (μm ²)	Largo (L _s)	Ancho (A _s)	Área (μm ²)															
	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice	Índice															
1	0.78	84.00	0.43	46.31	3889.85	0.76	81.85	0.54	58.15	4759.67	0.36	38.77	0.32	34.46	1336.05	0.51	54.92	0.25	26.92	1478.70							
2	0.62	66.77	0.43	46.31	3091.93	0.69	74.31	0.50	53.85	4001.18	0.44	47.38	0.37	39.83	1888.09	0.37	59.85	0.24	25.85	1029.87							
3	0.80	86.15	0.48	51.69	4433.49	0.60	64.62	0.54	58.15	3757.63	0.40	43.08	0.32	34.46	1484.50	0.32	56.00	0.22	23.69	1326.77							
4	1.36	146.46	0.40	43.08	6309.11	0.60	64.62	0.49	52.77	3409.70	0.44	47.38	0.39	42.00	1990.15	0.39	42.00	0.26	28.00	1176.00							
5	1.40	150.77	0.40	43.08	6494.67	0.82	88.31	0.45	48.46	4279.53	0.41	44.15	0.36	38.77	1711.81	0.48	51.69	0.30	32.31	1670.06							
6	0.90	96.92	0.43	46.31	4488.28	0.48	51.69	0.50	53.85	2783.43	0.41	44.15	0.36	38.77	1711.81	0.50	53.85	0.29	31.29	1681.66							
7	0.88	94.77	0.48	51.69	4886.84	0.60	64.62	0.60	64.62	4175.15	0.42	45.28	0.36	38.77	1753.56	0.50	53.85	0.43	46.31	2493.49							
8	0.94	101.23	0.40	43.08	4986.71	0.76	81.85	0.56	60.31	4951.95	0.41	44.15	0.35	37.69	1664.26	0.60	64.62	0.32	34.46	2226.75							
9	0.75	80.77	0.40	43.08	3479.29	0.46	49.54	0.50	53.85	2667.46	0.39	42.00	0.33	35.54	1492.62	0.50	53.85	0.29	31.23	1681.66							
10	0.70	75.98	0.50	53.85	4059.17	0.60	64.62	0.54	58.15	3757.63	0.40	43.08	0.32	34.46	1484.50	0.46	43.08	0.30	32.31	1391.72							
11	0.90	96.92	0.51	54.92	5323.31	0.90	96.92	0.54	58.15	5636.45	0.40	43.08	0.39	42.00	1809.23	0.60	64.62	0.39	42.00	2713.85							
12	1.12	120.62	0.48	51.69	6234.99	0.67	72.15	0.52	56.00	4840.61	0.45	48.46	0.36	38.77	1878.82	0.49	52.77	0.28	30.15	1591.20							
13	0.86	92.62	0.50	53.85	4986.98	0.67	72.15	0.40	43.08	3108.17	0.40	43.08	0.31	33.38	1458.11	0.49	52.77	0.36	38.77	2045.82							
14	1.00	107.69	0.45	48.46	5218.93	0.43	46.31	0.51	54.92	2343.36	0.41	44.15	0.32	34.46	1521.61	0.59	63.54	0.30	32.31	2032.78							
15	1.00	107.69	0.45	48.46	5218.93	0.60	64.62	0.53	57.08	3688.05	0.40	43.08	0.35	37.69	1623.67	0.42	45.23	0.29	31.23	1412.59							
16	0.90	96.92	0.45	48.46	4697.04	0.78	84.00	0.50	53.85	4523.08	0.40	43.08	0.35	37.69	1623.67	0.51	54.92	0.30	32.31	1774.44							
17	0.83	89.38	0.50	53.85	4813.02	0.78	84.00	0.49	52.77	4432.61	0.40	43.08	0.32	34.46	1484.50	0.45	48.46	0.30	32.31	1565.68							
18	0.53	57.08	0.50	53.85	3075.37	0.49	52.77	0.42	45.23	2386.79	0.40	43.08	0.37	34.46	1484.50	0.45	48.46	0.39	42.00	2385.38							
19	0.80	86.15	0.44	47.38	4082.37	0.68	73.23	0.52	54.46	2523.64	0.40	43.08	0.32	34.46	1484.50	0.50	53.85	0.28	30.15	1623.67							
20	0.79	85.08	0.43	46.31	3939.72	0.77	82.92	0.49	52.77	4375.79	0.40	43.08	0.30	32.31	1391.72	0.50	53.85	0.28	30.15	1623.67							
21	0.54	58.15	0.40	43.08	2505.09	0.52	56.00	0.49	52.77	2955.08	0.40	43.08	0.32	34.46	1484.50	0.51	54.92	0.30	32.31	1774.44							
22	0.70	75.58	0.49	52.77	3977.90	0.47	50.62	0.49	52.77	2670.98	0.42	45.23	0.33	35.54	1607.43	0.66	71.08	0.59	63.54	4516.12							
23	0.57	61.58	0.48	51.69	3173.11	0.47	50.52	0.44	47.38	2398.39	0.40	43.08	0.32	34.46	1484.50	0.58	62.45	0.32	34.46	2152.52							
24	0.57	61.58	0.48	51.69	3173.11	0.80	86.15	0.50	53.85	4639.05	0.33	35.75	0.31	33.38	1193.63	0.50	53.85	0.56	60.31	3247.34							
25	0.92	99.06	0.55	59.23	5868.40	0.64	68.92	0.39	42.00	2894.77	0.40	43.08	0.32	34.46	1484.50	0.59	63.54	0.60	64.62	4105.56							
Suma		2278.77		1284.15		111811.61		1727.38		1319.23		91344.11		1086.83		906.77		39512.20		1358.00		908.92	50891.71				
Promedio		91.15		49.37		4072.00		69.10		52.77		46.31		43.47		36.27		2000.00		54.32		36.36	2015.67				
D.E. (17)		23.87				4.51		1085.51				14.27		6.46		922.35		2.50		2.71		185.96		7.60		11.20	848.03

Promedio del área de las células del haz: 4472.46
 Promedio del área de las células del envéz: 3623.76
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subodiaria es:

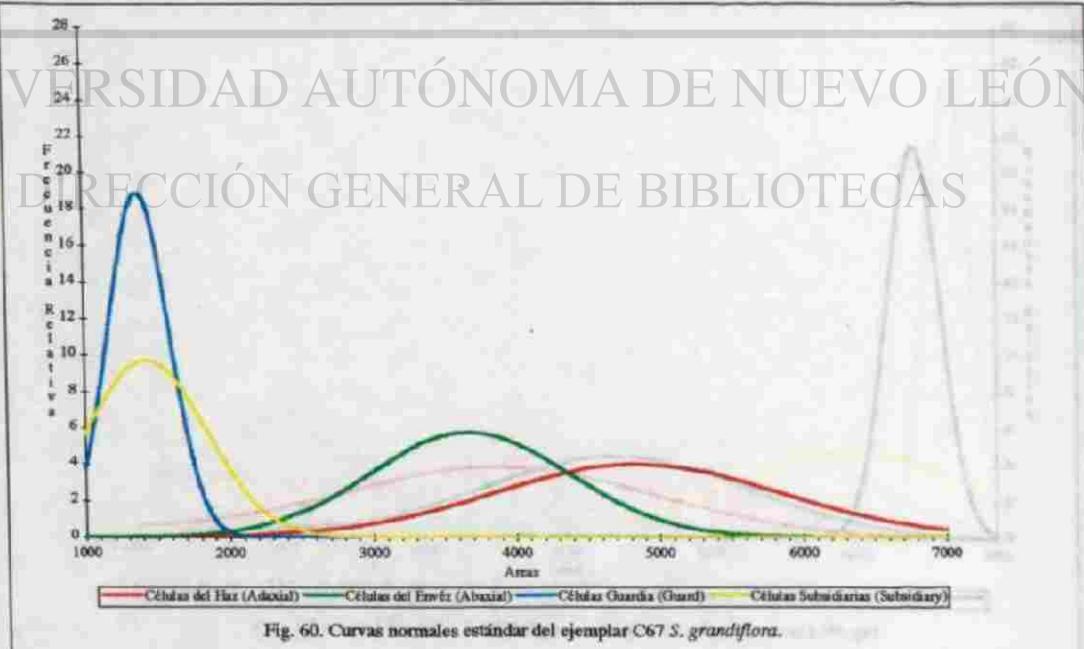


Cuadro 60. Datos estadísticos de C67 *S. grandiflora*.

#	C67 <i>S. grandiflora</i>				PM#091196-6 Brasil, Trinidad, Las Guayanas, Colombia, Perú, Venezuela				Células del Ház (Adaxial Cells)				Células del Envíz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidiary Cells)					
	Largo (Lh)		Ancho (Ah)		Área (mg)		Largo (Le)		Ancho (Ae)		Área (Pmg)		Largo (Lg)		Ancho (Ag)		Área (mg)		Largo (La)		Ancho (Aa)		Área (mg)			
	Índice	μg	Indice	μg	Índice	μg	Indice	μg	Índice	μg	Indice	μg	Índice	μg	Indice	μg	Índice	μg	Indice	μg	Índice	μg	Indice	μg		
1	0.68	73.23	0.59	63.54	4652.97	0.87	98.69	0.50	53.85	5044.97	0.42	45.23	0.31	33.38	1510.01	0.38	40.92	0.29	31.23	1278.06						
2	0.61	65.69	0.50	53.85	3337.28	0.60	64.62	0.31	54.92	3548.88	0.42	45.23	0.31	33.38	1510.01	0.40	43.08	0.29	31.23	1345.33						
3	0.61	65.69	0.52	56.00	3478.77	0.60	64.62	0.59	53.85	3479.29	0.40	43.08	0.30	32.31	1391.72	0.37	39.85	0.28	30.15	1201.51						
4	0.75	80.77	0.54	58.15	4697.04	0.54	58.15	0.56	60.31	3507.12	0.33	35.54	0.29	31.23	1199.89	0.42	45.23	0.23	24.77	1129.33						
5	0.80	86.15	0.50	53.85	4639.05	0.54	58.15	0.57	61.38	3569.75	0.35	37.69	0.30	32.31	1217.75	0.50	53.85	0.38	40.92	2203.55						
6	0.90	96.92	0.50	53.85	5218.93	0.43	46.31	0.70	75.38	3490.89	0.30	32.31	0.29	31.23	1008.99	0.39	42.00	0.30	32.31	1356.92						
7	0.65	70.00	0.58	62.46	4371.31	0.48	51.69	0.62	66.77	3451.46	0.32	34.46	0.29	31.23	1076.26	0.49	52.77	0.30	32.31	1704.85						
8	0.74	79.69	0.58	62.46	4977.70	0.65	70.00	0.64	68.92	4824.61	0.41	44.15	0.31	33.38	1474.06	0.53	59.23	0.37	39.85	2360.12						
9	0.81	87.23	0.60	64.62	5636.45	0.50	53.85	0.62	66.77	3595.27	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.31	33.38	2336.92						
10	0.60	64.62	0.61	65.69	4244.73	0.52	56.00	0.52	56.00	3136.00	0.36	38.77	0.34	36.62	1419.55	0.35	37.69	0.42	45.23	1704.85						
11	0.60	64.62	0.53	57.08	3688.05	0.62	66.77	0.62	66.77	4458.13	0.40	43.08	0.34	36.62	1577.28	0.40	43.08	0.32	34.46	1484.50						
12	0.74	79.69	0.51	54.92	4376.95	0.60	64.62	0.50	53.85	3479.29	0.37	39.85	0.30	32.31	1287.34	0.42	45.23	0.20	21.54	974.20						
13	1.00	107.69	0.58	62.46	6726.63	0.68	73.23	0.60	64.62	4731.83	0.40	43.08	0.30	32.31	1391.72	0.39	42.00	0.21	22.62	949.85						
14	0.59	53.85	0.50	53.85	2895.41	0.50	53.85	0.50	53.85	2899.41	0.42	45.23	0.31	33.38	1510.01	0.38	40.92	0.30	32.31	1322.13						
15	0.85	91.54	0.59	63.54	5816.21	0.57	51.38	0.55	59.25	3635.86	0.40	43.08	0.31	33.38	1438.11	0.50	53.85	0.32	34.46	1855.62						
16	0.85	91.54	0.62	66.77	6111.95	0.41	44.15	0.55	59.25	2615.27	0.40	43.08	0.30	32.31	1391.72	0.48	51.69	0.21	22.62	1169.04						
17	0.90	96.92	0.51	54.92	5323.31	0.41	44.15	0.55	59.25	2615.27	0.40	43.08	0.31	33.38	1438.11	0.42	45.23	0.20	21.54	974.20						
18	0.85	91.54	0.52	56.00	5126.15	0.49	52.77	0.50	53.85	2841.42	0.40	43.08	0.44	47.38	2041.18	0.40	43.08	0.28	30.15	1298.93						
19	0.82	88.31	0.49	52.77	4659.93	0.46	49.54	0.68	73.23	3627.74	0.37	39.85	0.35	37.69	1623.67	0.41	44.15	0.28	30.15	1331.41						
20	0.66	71.08	0.50	53.85	3827.22	0.46	49.54	0.68	73.23	3627.74	0.37	39.85	0.31	33.38	1330.25	0.39	42.00	0.31	33.38	1402.15						
21	0.80	86.15	0.49	52.77	4546.27	0.40	43.08	0.69	74.31	3200.95	0.40	43.08	0.31	33.38	1438.11	0.49	52.77	0.30	32.31	1704.85						
22	1.03	110.92	0.59	63.54	7347.88	0.60	64.62	0.55	59.25	3827.72	0.37	39.85	0.29	31.23	1244.43	0.43	46.31	0.19	20.46	947.53						
23	0.87	93.69	0.50	53.85	5044.97	0.65	70.00	0.50	53.85	3769.23	0.32	34.46	0.29	31.23	1076.26	0.44	47.38	0.20	21.54	1020.59						
24	0.71	76.46	0.50	53.85	4117.16	0.73	78.62	0.62	66.77	5249.09	0.40	43.08	0.30	32.31	1391.72	0.40	43.08	0.32	34.46	1484.50						
25	0.87	93.69	0.60	64.62	6053.96	0.57	61.38	0.55	59.25	3635.86	0.38	40.92	0.28	30.15	1233.99	0.40	43.08	0.26	28.00	1206.15						
	Suma	2067.69		1459.23	121021.28		1494.77		1548.62	91862.52		1027.98		897.85	34523.83		1168.46		761.38	35798.10						
	Promedio	92.71		58.87	4880.49		59.79		61.94		41.10		33.51		46.74		30.46		1429.52							
	D.E. (σ)	14.27		4.90	1006.68		11.91		7.23	698.98		3.66		3.40	212.69		7.19		6.44	412.68						

Promedio del área de las células del haz: 4840.83
 Promedio del área de las células del envíz: 3674.50

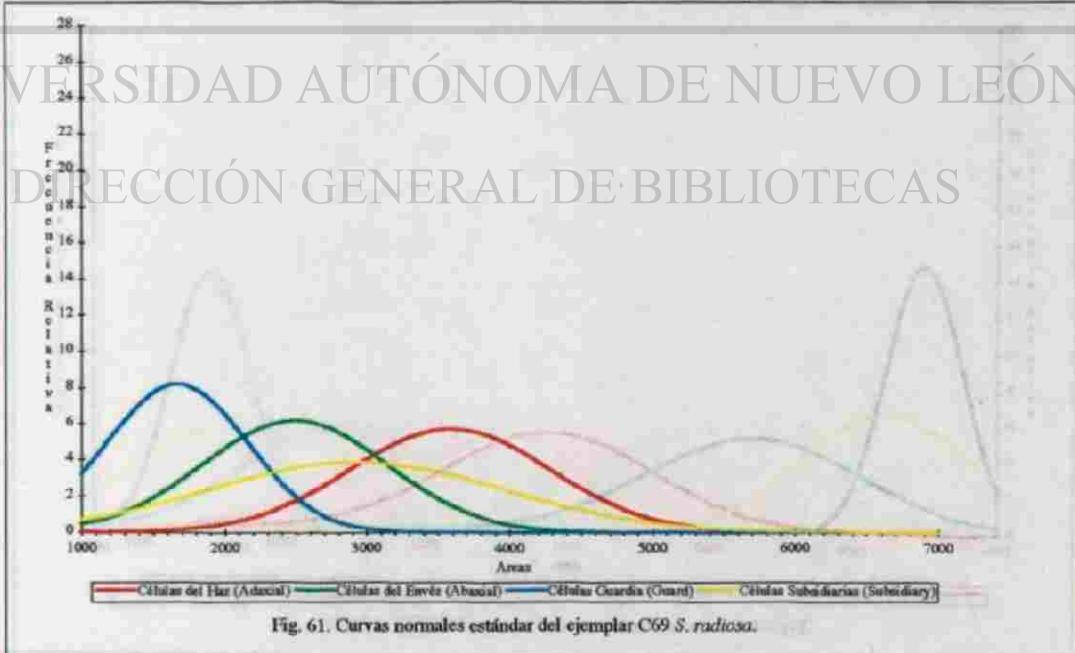
El promedio de las células del haz es 1.32 veces el promedio de las células del envíz.
 El promedio de las células guardia es 1.23 veces el promedio del ancho.
 El promedio de las células subsidiarias es 1.53 veces el promedio del ancho.



Cuadro 61. Datos estadísticos de C69 *S. radiosa*.

C69 *S. radiosa* (Mex) - PMP190/97-L México (1)

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)										
	Largo (L _h)	Ancho (A _h)	Área	Largo (L _e)	Ancho (A _e)	Área	Largo (L _g)	Ancho (A _g)	Área	Largo (L _s)	Ancho (A _s)	Área								
	Índice	μ_{\pm}	μ_{\pm}	Índice	μ_{\pm}	μ_{\pm}	Índice	μ_{\pm}	μ_{\pm}	Índice	μ_{\pm}	μ_{\pm}								
1	0.79	85.08	0.42	45.23	3848.09	0.62	56.77	0.35	37.69	2516.69	0.52	56.00	0.42	45.23	2532.92	0.72	77.54	0.46	49.54	3641.14
2	0.82	88.31	0.40	43.08	3804.02	0.79	85.08	0.22	23.69	2015.67	0.52	56.00	0.40	43.08	2412.31	0.62	66.77	0.35	37.69	2516.69
3	1.00	107.69	0.45	48.46	5218.93	0.35	37.69	0.30	32.31	1217.75	0.51	54.92	0.49	52.77	2898.25	0.60	64.62	0.50	53.85	3479.29
4	0.88	94.77	0.45	48.46	4592.66	0.76	81.85	0.28	30.15	2467.98	0.50	51.85	0.49	52.77	2841.42	0.60	64.62	0.45	48.46	3131.36
5	0.69	74.31	0.40	43.08	3200.95	0.49	52.77	0.40	43.08	2273.14	0.35	37.69	0.30	32.31	1217.75	0.79	75.38	0.65	70.00	2576.92
6	0.69	74.31	0.40	43.08	3200.95	0.44	47.38	0.30	32.31	1530.89	0.46	49.54	0.40	43.08	2133.96	0.68	73.23	0.52	56.00	4100.92
7	0.65	70.00	0.40	43.08	3015.38	0.64	68.92	0.30	32.31	2226.75	0.39	42.00	0.30	32.31	1356.92	0.51	54.92	0.37	39.85	2188.47
8	0.70	75.38	0.46	49.54	3754.44	0.70	75.38	0.30	32.31	2435.50	0.39	42.00	0.29	31.23	1311.69	0.48	51.69	0.32	34.46	1781.40
9	0.68	73.23	0.42	45.23	3312.28	0.50	53.85	0.29	31.23	1681.66	0.40	43.08	0.32	34.46	1484.50	0.55	59.23	0.30	32.31	1913.61
10	0.79	85.08	0.40	43.08	3664.83	0.79	85.08	0.32	34.46	2931.88	0.36	38.77	0.36	38.77	1503.05	0.51	54.92	0.40	43.08	2365.92
11	0.70	75.38	0.50	53.85	4059.17	0.60	54.62	0.26	28.00	1809.23	0.42	45.23	0.31	33.38	1510.01	0.68	73.23	0.40	43.08	3154.56
12	0.90	96.92	0.50	53.85	5218.93	0.84	90.46	0.22	23.69	2143.24	0.43	46.31	0.30	32.31	1496.09	0.55	59.23	0.45	48.46	2870.41
13	0.82	88.31	0.45	48.46	4279.33	0.59	63.54	0.22	23.69	1305.37	0.39	42.00	0.30	32.31	1356.92	0.60	64.62	0.49	52.77	3409.70
14	0.60	64.62	0.50	53.85	3479.29	0.71	76.46	0.26	30.15	2305.68	0.42	45.23	0.28	30.15	1363.88	0.54	68.92	0.50	53.85	3711.24
15	0.59	63.54	0.42	45.23	2873.89	0.89	95.85	0.25	26.92	2380.47	0.40	43.08	0.28	30.15	1298.93	0.50	64.62	0.19	20.46	1322.13
16	0.60	64.62	0.52	56.00	3618.46	0.69	74.31	0.45	48.46	3601.06	0.40	43.08	0.32	34.46	1484.50	0.54	58.15	0.26	28.00	1628.31
17	0.60	64.62	0.40	43.08	2783.43	0.89	86.15	0.36	38.77	3340.12	0.40	43.08	0.36	38.77	1670.06	0.46	49.54	0.31	33.38	1653.82
18	0.54	58.15	0.41	44.15	2567.72	0.72	77.54	0.35	37.69	2292.60	0.40	43.08	0.30	32.31	1391.72	0.65	70.00	0.40	43.08	3015.38
19	0.60	64.62	0.45	48.46	3131.36	0.81	87.23	0.35	37.69	3287.93	0.40	43.08	0.32	34.46	1484.50	0.60	64.62	0.31	33.38	2157.16
20	0.61	65.69	0.40	43.08	2629.82	0.70	73.38	0.33	37.69	2841.42	0.40	43.08	0.30	32.31	1391.72	0.62	66.77	0.28	30.15	2013.35
21	0.91	98.00	0.30	32.31	3146.15	0.70	75.38	0.30	32.31	2435.50	0.40	43.08	0.29	31.23	1345.33	0.60	64.62	0.47	50.62	3270.53
22	0.58	62.46	0.41	44.15	2737.92	0.90	96.92	0.30	32.31	3131.36	0.40	43.08	0.31	33.38	1438.11	0.79	85.08	0.56	60.31	5130.79
23	0.65	70.00	0.50	53.85	3769.23	0.86	92.62	0.30	32.31	2992.19	0.48	51.69	0.31	33.38	1725.73	0.60	64.62	0.38	40.92	2644.26
24	0.82	88.31	0.40	43.08	3804.02	0.74	79.69	0.30	32.31	2574.67	0.44	47.38	0.32	34.46	1612.95	0.69	74.31	0.50	53.85	4001.18
25	0.80	86.15	0.40	43.08	3711.34	0.76	81.85	0.43	44.15	3613.82	0.42	45.23	0.30	32.31	1461.30	0.60	64.62	0.38	40.92	2644.26
Suma	1939.54	1158.77	89642.73		1872.77		855.69	62382.50	10.60	1141.54	8.37	901.38	41744.51		1635.85		1098.46	73222.81		
Promedio	77.58	46.35	2885.71		74.91		33.43	11.63	0.42	45.66	0.33	36.06	11.63		65.43		43.94	2928.91		
D.E. (n)	13.39		5.22	702.10		15.15		6.22	650.91	0.05	5.14	0.06	6.46	487.39		8.33		11.37	1040.04	



Cuadro 62. Datos estadísticos de C77 *S. oculata*.

#	C77 <i>S. oculata</i> (Méns)			Méjico; Chiapas (1)			Células del Ház (Adaxial Cells)			Células del Envíz (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)				
	Largo (Lh)	Ancho (Ah)	Área	Largo (Lc)	Ancho (Ac)	Área	Largo (Lg)	Ancho (Ag)	Área	Largo (Ls)	Ancho (As)	Área	Largo (Lg)	Ancho (Ag)	Área	Largo (Ls)	Ancho (As)	Área		
	Índice	[μm]	[μm]	Índice	[μm]	[μm]	Índice	[μm]	[μm]	Índice	[μm]	[μm]	Índice	[μm]	[μm]	Índice	[μm]	[μm]		
1	0.75	80.77	0.56	60.31	4871.01	0.70	75.38	0.40	43.08	3247.34	0.39	42.00	0.33	35.54	1492.62	0.42	43.23	0.23	24.77	1120.33
2	0.70	75.38	0.50	53.85	4059.17	0.42	45.23	0.38	40.92	1850.98	0.40	43.08	0.32	34.46	1484.50	0.51	54.92	0.39	42.00	2306.77
3	0.64	68.92	0.47	50.62	3488.57	0.55	59.23	0.40	43.08	2551.48	0.40	43.08	0.33	35.54	1510.89	0.39	42.00	0.20	21.54	904.62
4	0.72	77.54	0.50	53.85	4175.15	0.50	53.85	0.40	43.08	2319.53	0.50	53.85	0.39	42.00	2261.54	0.40	43.08	0.39	42.00	1809.23
5	0.60	64.62	0.40	43.08	2783.43	0.55	59.23	0.42	45.23	2679.05	0.40	43.08	0.34	36.62	1577.28	0.39	42.00	0.28	30.15	1266.46
6	0.60	64.62	0.52	56.00	3618.46	0.43	46.31	0.40	43.08	1994.79	0.39	42.00	0.30	32.31	1356.92	0.30	32.31	0.30	32.31	1043.79
7	0.76	81.85	0.40	43.08	3525.68	0.40	43.08	0.40	43.08	1855.62	0.40	43.08	0.35	37.69	1623.67	0.48	51.69	0.40	43.08	2226.75
8	0.94	101.23	0.48	51.69	5252.85	0.44	47.38	0.43	46.31	2194.27	0.38	46.92	0.30	32.31	1322.13	0.52	56.00	0.40	43.08	2412.31
9	0.78	84.00	0.50	53.85	4523.08	0.41	44.15	0.40	43.08	1902.01	0.47	50.62	0.31	33.38	1689.77	0.40	43.08	0.30	32.31	1391.72
10	0.65	70.00	0.50	53.85	3769.23	0.45	48.46	0.35	37.69	1826.63	0.39	42.00	0.30	32.31	1356.92	0.46	49.54	0.28	30.15	1483.77
11	0.65	70.00	0.50	53.85	3769.23	0.44	47.38	0.43	46.31	2194.77	0.39	42.00	0.29	31.23	1311.69	0.51	54.92	0.40	43.08	2365.92
12	0.80	86.15	0.53	57.08	4917.40	0.41	44.15	0.40	43.08	1902.01	0.40	43.08	0.35	37.69	1623.67	0.40	43.08	0.30	32.31	1391.72
13	0.88	94.77	0.49	52.77	5000.90	0.42	45.23	0.32	54.46	1558.72	0.42	45.23	0.27	29.98	1315.17	0.50	53.85	0.24	25.85	1391.72
14	0.78	84.00	0.45	48.46	4070.77	0.62	66.77	0.45	48.46	3235.74	0.43	44.15	0.35	37.69	1664.26	0.57	61.38	0.30	32.31	1983.19
15	0.69	74.31	0.52	56.00	4161.23	0.64	68.92	0.48	51.69	3562.79	0.41	44.15	0.36	38.77	1711.81	0.58	62.46	0.48	51.69	3228.78
16	0.65	70.00	0.60	64.62	4523.08	0.58	62.46	0.44	47.38	2959.72	0.42	45.23	0.36	38.77	1753.56	0.50	53.85	0.40	43.08	2319.53
17	0.78	84.00	0.50	53.85	4523.08	0.60	64.62	0.48	51.69	3340.12	0.42	45.23	0.35	37.69	1704.85	0.46	49.54	0.42	45.23	2240.66
18	0.80	86.15	0.40	43.08	3711.24	0.48	51.69	0.46	49.54	2560.76	0.40	43.08	0.36	38.77	1670.06	0.45	48.46	0.36	38.77	1878.82
19	0.76	75.38	0.59	63.54	4789.82	0.54	58.15	0.45	48.46	2818.22	0.38	46.92	0.30	32.31	1322.13	0.42	45.23	0.30	32.31	1461.30
20	0.51	54.92	0.58	57.08	3134.84	0.63	67.85	0.50	53.85	3653.25	0.34	36.62	0.26	28.00	1025.28	0.41	44.15	0.31	33.38	1474.06
21	0.90	96.92	0.48	51.69	5010.18	0.53	57.08	0.49	52.77	3011.90	0.43	46.31	0.26	28.00	1296.62	0.40	43.08	0.30	32.31	1391.72
22	0.50	53.85	0.50	53.85	2899.41	0.68	73.25	0.49	52.77	3864.33	0.43	46.31	0.39	42.00	1944.92	0.40	43.08	0.39	42.00	1809.23
23	0.93	100.15	0.50	53.85	5392.90	0.63	67.85	0.46	49.54	3360.99	0.40	43.08	0.30	32.31	1391.72	0.52	56.00	0.48	51.69	2894.77
24	0.71	76.46	0.40	43.08	3293.75	0.51	54.92	0.45	48.46	2661.66	0.38	40.92	0.28	30.15	1233.99	0.40	43.08	0.21	22.62	974.20
25	0.86	92.62	0.42	45.23	4189.06	0.75	80.77	0.52	56.00	4523.08	0.32	34.46	0.30	32.31	1113.37	0.46	49.54	0.30	32.31	1600.47
	Suma	1968.62		1318.15	103433.48		1433.38		1163.08	67629.27		1084.46		866.92	37779.28		1211.54		903.31	44381.82
	Promedio	78.74		52.73	4187.34		57.34		46.52	38.95		43.38		34.68	1201.17		48.46		36.01	1773.27
	D.E. (g)	12.77		5.91	733.64		11.09		5.18	761.39		3.78		4.02	268.34		7.04		8.37	601.60

Promedio del área de las células del haz: 4137.34
 Promedio del área de las células del envíz: 2705.17
 El promedio de las células del haz es:
 El promedio de las células generaria es:
 El promedio de las células subsidiarias es:

1.53 veces el promedio de las células del envíz.
 1.25 veces el promedio del ancho.
 1.35 veces el promedio del ancho.



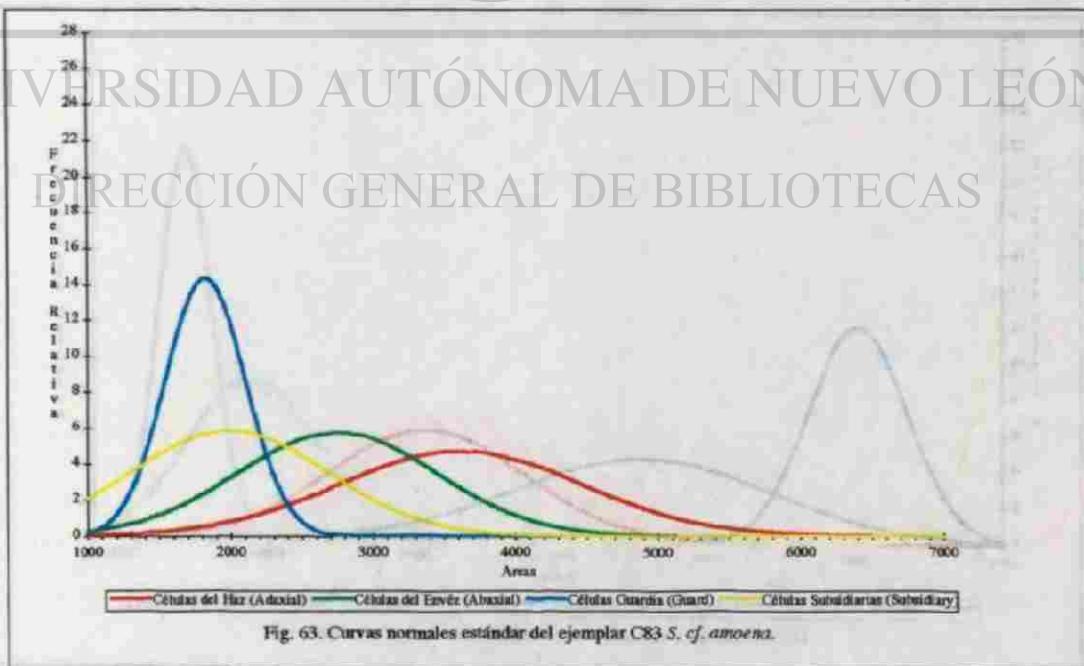
Cuadro 63. Datos estadísticos de C83 S. (*cf.*) amoena

C83 S. sp. ign. (<i>cf.</i> amoena)				Pl#290737-4				Slide: 210897; photo: 290897				Flu: 1of5 open; 241097; 1of5 open; 041197				
Células del Ház (Adaxial Cells)				Células del Envéz (Abaxial Cells)				Células Guardia (Guard Cells)				Células Subsidiarias (Subsidary Cells)				
Largo (Lx)	Ancho (Ax)	Área	Índice	Largo (Lx)	Ancho (Ax)	Área	Índice	Largo (Lx)	Ancho (Ax)	Área	Índice	Largo (Lx)	Ancho (Ax)	Área		
#	Índice	μm	μm	#	Índice	μm	μm	#	Índice	μm	μm	#	Índice	μm	μm	
1	0.80	86.15	0.55	59.23	5102.96	0.75	78.62	0.38	40.92	3217.18	0.40	45.08	0.35	37.69	1625.67	0.59
2	0.56	69.31	0.55	59.23	3572.07	0.75	80.77	0.30	32.31	2609.47	0.40	43.08	0.39	42.00	1809.23	0.80
3	0.57	61.38	0.57	61.38	3768.07	0.68	73.25	0.28	30.15	2208.19	0.36	38.77	0.32	34.46	1336.05	0.90
4	0.57	61.38	0.50	53.85	3305.32	0.88	94.77	0.30	32.31	3061.77	0.37	39.85	0.32	34.46	1373.16	0.60
5	0.40	43.08	0.50	53.85	2419.53	0.82	88.31	0.29	31.23	2757.92	0.40	43.08	0.32	34.46	1484.50	0.63
6	0.71	76.46	0.50	53.85	4117.16	0.80	86.15	0.33	35.54	3061.77	0.46	49.54	0.38	40.92	2027.27	0.53
7	0.50	53.85	0.58	62.46	3363.31	0.42	45.23	0.38	40.92	1850.98	0.45	48.46	0.37	39.85	1931.01	0.50
8	0.49	52.77	0.49	52.77	2784.59	0.46	49.54	0.30	32.31	1600.47	0.42	45.23	0.38	40.92	1850.98	0.53
9	0.50	53.85	0.63	67.85	3653.25	0.48	51.69	0.33	35.54	1837.06	0.46	49.54	0.35	37.69	1867.22	0.53
10	0.75	80.77	0.45	48.46	3914.20	0.55	59.23	0.34	36.62	2168.76	0.41	44.15	0.31	33.38	1474.06	0.55
11	0.60	64.62	0.60	64.62	4175.15	0.82	88.31	0.40	43.08	3804.02	0.46	49.54	0.31	33.38	1633.82	0.64
12	0.53	57.08	0.60	64.62	3688.05	0.79	85.08	0.26	28.00	2382.13	0.46	49.54	0.38	40.92	2027.27	0.68
13	0.41	44.15	0.59	63.54	2805.47	0.32	34.46	0.41	44.15	1521.61	0.46	49.54	0.39	42.00	2080.62	0.65
14	0.49	52.77	0.62	66.77	3523.36	0.65	70.00	0.39	42.00	2940.04	0.47	50.62	0.41	44.15	2234.86	0.65
15	0.49	52.77	0.51	54.92	2898.25	0.70	75.38	0.40	43.08	3247.34	0.44	47.38	0.36	38.77	1837.06	0.58
16	0.60	64.62	0.55	59.23	3827.22	0.50	53.85	0.40	43.08	2319.55	0.45	48.46	0.34	38.77	1878.82	0.56
17	0.65	70.00	0.59	63.54	4447.69	0.92	99.08	0.40	43.08	4267.93	0.49	52.77	0.40	43.08	2273.14	0.61
18	0.52	56.00	0.49	52.77	2955.08	0.85	91.54	0.39	42.00	3844.61	0.42	45.23	0.38	40.92	1850.98	0.69
19	0.50	53.85	0.55	58.23	3189.35	0.70	75.38	0.37	39.85	3003.79	0.43	46.31	0.40	43.08	1994.79	0.35
20	0.49	52.77	0.35	37.69	1988.99	0.65	70.00	0.40	43.08	3015.38	0.49	52.77	0.36	38.77	2045.82	0.61
21	0.64	68.92	0.56	60.31	4150.59	0.52	56.00	0.39	42.00	2352.00	0.49	52.77	0.35	37.69	1988.99	0.52
22	0.40	43.08	0.59	63.54	2737.04	0.72	77.54	0.39	42.00	3256.61	0.45	48.46	0.29	31.23	1513.49	0.60
23	0.68	73.25	0.54	58.15	4028.65	0.62	66.77	0.42	45.23	3020.02	0.40	43.08	0.33	35.54	1530.89	0.60
24	0.80	86.15	0.42	45.23	3886.86	0.60	64.62	0.44	47.38	3061.77	0.50	53.85	0.40	43.08	2319.53	0.60
25	0.85	92.62	0.60	54.62	5884.38	0.42	45.23	0.46	49.54	2740.66	0.40	43.08	0.35	37.69	1623.67	0.61
Suma				1562.67				1451.69				90432.53				
Promedio				62.50				58.07				2746.04				
D.E. (σ)				13.77				7.14				860.64				

Promedio del área de las células del haz: 3617.30
 Promedio del área de las células del envéz: 2746.04
 El promedio de las células del haz es:
 El promedio de las células guardia es:
 El promedio de las células subsidiaria es:

376.45 células/mm cuadrados
 364.16 células/mm cuadrados

1.32 veces el promedio de las células del envéz.
 1.22 veces el promedio del ancho.
 2.12 veces el promedio del ancho.



Cuadro 64. Datos estadísticos de C86 G. superba.

#	Células del haz (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células guarda (Guard Cells)			Células Subsidiarias (Subsidiary Cells)		
	Largo (Lh)	Ancho (Ah)	Área (μm²)	Largo (Lc)	Ancho (Ac)	Área (μm²)	Largo (Lg)	Ancho (Ag)	Área (μm²)	Largo (La)	Ancho (As)	Área (μm²)
	Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm	Índice	μm
1	0.57	61.38	0.73	78.62	4825.77	0.52	56.00	0.60	64.62	3618.46	0.51	54.92
2	0.54	58.15	0.67	72.15	4196.02	0.58	62.46	0.60	64.62	4083.98	0.46	49.54
3	0.60	64.62	0.78	84.00	5427.69	0.67	72.15	0.60	64.62	4662.25	0.46	49.54
4	0.56	60.31	0.80	86.15	5193.74	0.66	71.08	0.55	59.23	4209.94	0.50	53.85
5	0.50	53.85	0.60	64.62	3479.29	0.50	53.85	0.55	59.23	3189.35	0.48	51.69
6	0.64	68.92	0.65	70.00	4824.61	0.50	53.85	0.65	70.00	3769.23	0.41	44.15
7	0.70	75.38	0.65	70.00	5276.92	0.65	70.00	0.46	49.54	3467.69	0.41	44.15
8	0.69	74.31	0.69	74.31	5521.63	0.50	53.85	0.65	70.00	3769.24	0.45	48.46
9	0.89	95.85	0.60	64.62	6193.14	0.46	49.54	0.46	49.54	2454.06	0.46	49.54
10	0.65	70.00	0.81	87.23	6106.15	0.60	64.62	0.46	49.54	3200.95	0.39	42.00
11	0.60	64.62	0.71	76.46	4940.59	0.58	62.46	0.67	72.15	4506.84	0.51	54.92
12	0.70	75.38	0.56	60.31	4546.27	0.60	64.62	0.66	71.08	4592.66	0.49	52.77
13	0.69	74.31	0.60	64.62	4801.42	0.38	40.92	0.42	45.23	1850.98	0.44	47.38
14	0.79	85.08	0.66	71.08	6047.01	0.60	64.62	0.55	59.23	3827.23	0.40	43.08
15	0.70	75.38	0.62	66.77	5013.37	0.78	84.00	0.60	64.62	5427.69	0.45	48.46
16	0.64	68.92	0.64	68.92	4750.39	0.64	68.92	0.38	40.92	2820.54	0.52	56.00
17	0.55	59.23	0.60	64.62	3827.22	0.60	64.62	0.36	38.77	2505.09	0.49	52.77
18	0.70	75.38	0.60	64.62	4871.01	0.70	75.38	0.35	37.69	2841.42	0.42	45.23
19	0.48	51.69	0.82	88.31	4564.83	0.70	75.38	0.45	48.46	3463.25	0.48	51.69
20	0.47	50.62	0.82	88.31	4469.73	0.76	81.85	0.42	45.23	3701.96	0.46	49.54
21	0.61	65.69	0.66	71.08	4669.21	0.54	58.15	0.40	43.08	2505.09	0.48	51.69
22	0.60	64.62	0.68	73.23	4751.88	0.56	60.31	0.45	48.46	2922.60	0.40	43.08
23	0.72	77.54	0.61	65.69	5093.68	0.59	63.54	0.50	53.85	3421.30	0.40	43.08
24	0.60	64.62	0.60	64.62	4475.15	0.61	65.69	0.50	53.85	3537.28	0.40	43.08
25	0.70	75.38	0.69	74.31	5601.66	0.45	48.46	0.34	36.62	1774.44	0.40	43.08
Suma	1711.23	1814.62	123170.33		1586.31		1360.15	86265.50		1213.69	1017.69	49642.50
Promedio	68.45	72.58	4806.61		63.45		54.41			48.55	40.71	4006.76
D.E. (σ)	10.42	8.48	664.80		10.33		11.23	378.66		4.46	4.04	333.67
												3.29
												7.77
												282.78

Promedio del área de las células del haz:

4926.89

Promedio del área de las células del envés:

5450.62

El promedio de las células del haz es:

63.45

El promedio de las células guarda es:

54.41

El promedio de las células subsidiarias es:

48.55

millas cuadradas/millones cuadrados:

202.97 células/mm cuadrados

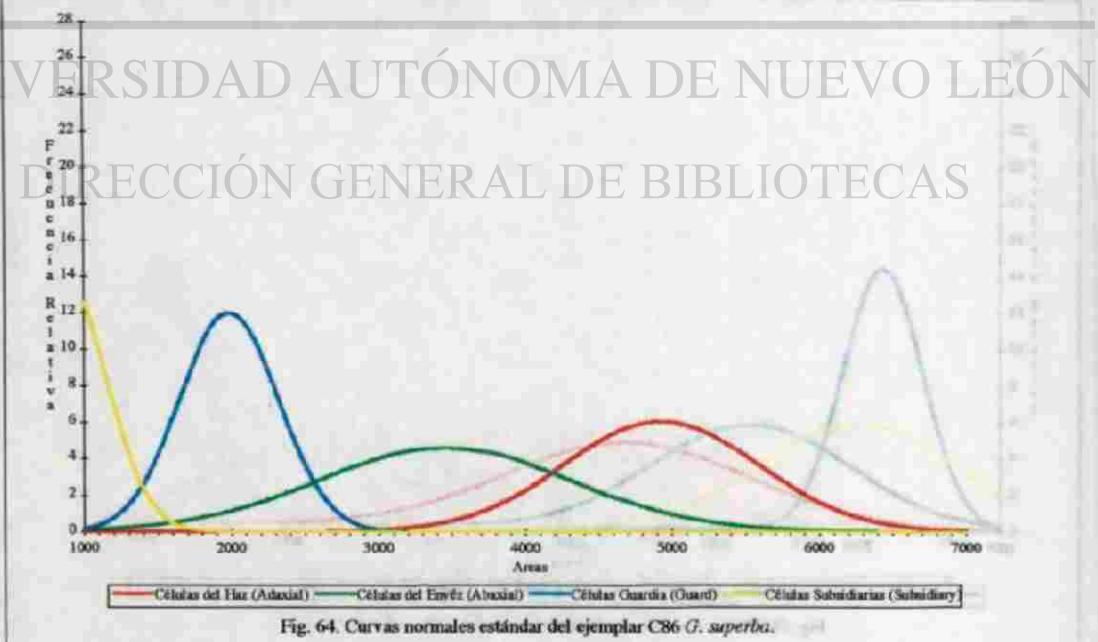
millas cuadradas/millones cuadrados:

289.80 células/mm cuadrados

1.43 veces el promedio de las células del envés.

1.19 veces el promedio del ancho.

1.92 veces el promedio del ancho.



Cuadro 65. Datos estadísticos de C88 S. maculosa.

C88 S. maculosa (Méjico) - PLP241097-1 México; Sonora, área de Tepopula

#	Células del Haz (Axial Cell)			Células del Envés (Abaxial Cell)			Células Guardia (Guard Cell)			Células Subsidiarias (Subsidiary Cell)										
	Células del Haz (Axial Cell)			Células del Envés (Abaxial Cell)			Células Guardia (Guard Cell)			Células Subsidiarias (Subsidiary Cell)										
	Largo (L) Índice	Ancho (A) Índice	Área Índice	Largo (Lc) Índice	Ancho (Ac) Índice	Área Índice	Largo (Lg) Índice	Ancho (Ag) Índice	Área Índice	Largo (Ls) Índice	Ancho (As) Índice	Área Índice								
1	0.68	73.25	0.51	54.92	4022.06	0.52	56.00	0.38	40.92	2291.69	0.43	48.46	0.35	37.69	1826.63	0.50	53.85	0.40	43.08	2191.53
2	0.68	73.25	0.41	44.15	3233.42	0.48	51.69	0.39	42.00	2171.08	0.39	42.00	0.30	32.31	1356.92	0.56	60.31	0.52	56.00	3377.23
3	0.70	75.38	0.51	54.92	4140.35	0.52	56.00	0.32	34.46	1929.85	0.41	44.15	0.30	32.31	1426.51	0.63	70.00	0.21	22.62	1583.08
4	0.55	59.25	0.55	59.23	3508.29	0.70	75.38	0.40	43.08	3247.34	0.40	43.08	0.34	36.62	1577.28	0.59	63.54	0.32	34.46	2189.63
5	0.60	64.02	0.56	60.31	3896.80	0.51	54.92	0.25	26.92	1478.70	0.39	42.00	0.36	38.77	1628.31	0.52	56.00	0.30	32.31	1809.73
6	0.60	64.02	0.56	60.31	3896.80	0.39	42.00	0.40	43.08	1809.23	0.41	44.15	0.32	34.46	1521.61	0.38	40.92	0.37	39.85	1630.63
7	0.62	66.77	0.50	53.85	3395.77	0.35	37.69	0.30	32.31	1217.75	0.40	43.08	0.32	34.46	1484.50	0.56	60.31	0.30	32.31	1948.40
8	0.65	70.00	0.50	53.85	3769.23	0.44	47.38	0.46	49.54	2347.36	0.40	43.08	0.40	43.08	1855.62	0.63	66.77	0.22	23.69	1581.92
9	0.63	70.00	0.42	45.23	3166.15	0.46	49.54	0.35	37.69	1887.22	0.45	48.46	0.37	39.85	1931.01	0.48	51.69	0.30	32.31	1670.06
10	0.75	80.77	0.48	51.69	4175.15	0.50	53.85	0.40	45.08	2319.53	0.45	48.46	0.32	34.46	1670.06	0.42	45.23	0.25	26.92	1217.75
11	0.59	63.34	0.49	32.77	3352.88	0.72	77.34	0.31	33.38	2388.39	0.40	43.08	0.39	42.00	1809.23	0.55	59.25	0.25	26.92	1594.67
12	0.51	54.92	0.49	32.77	2898.25	0.67	72.15	0.30	32.31	2331.12	0.40	43.08	0.39	42.00	1809.23	0.45	48.46	0.30	32.31	1565.68
13	0.64	68.92	0.48	51.69	3562.79	0.65	70.00	0.35	37.69	2638.46	0.44	47.38	0.40	43.08	2041.18	0.60	64.62	0.25	26.92	1739.64
14	0.76	81.85	0.31	33.38	2752.40	0.55	59.23	0.30	32.31	1913.61	0.44	47.38	0.35	37.69	1786.04	0.48	51.69	0.37	39.85	2059.74
15	0.80	86.15	0.31	33.38	2876.21	0.60	64.62	0.30	32.31	2087.57	0.40	43.08	0.35	37.69	1623.67	0.50	53.85	0.29	31.23	1681.66
16	0.75	78.62	0.59	42.00	3301.85	0.35	37.69	0.40	43.08	1623.67	0.44	47.38	0.34	36.62	1735.01	0.50	53.85	0.26	28.00	1507.69
17	0.79	85.00	0.31	33.38	2840.26	0.48	51.69	0.33	35.54	1837.06	0.41	44.15	0.34	36.62	1616.71	0.60	64.62	0.32	34.46	2226.75
18	0.74	79.69	0.30	32.31	2574.67	0.47	50.62	0.33	35.54	1798.79	0.40	43.08	0.38	40.92	1762.84	0.60	64.62	0.30	32.31	2087.57
19	0.68	73.23	0.50	53.85	3943.19	0.52	66.77	0.30	32.31	2157.16	0.40	43.08	0.30	32.31	1391.72	0.45	48.46	0.41	44.15	2139.76
20	0.85	91.54	0.46	49.54	4534.67	0.68	73.23	0.34	36.62	2681.37	0.40	43.08	0.32	34.46	1484.50	0.60	64.62	0.30	32.31	2087.57
21	0.61	63.69	0.45	48.46	3183.55	0.52	56.00	0.31	33.38	1869.54	0.40	43.08	0.32	34.46	1484.50	0.58	62.46	0.31	33.38	2083.23
22	0.65	70.00	0.45	48.46	3392.31	0.52	56.00	0.35	37.69	2110.77	0.36	38.77	0.34	36.62	1419.55	0.60	64.62	0.29	31.23	2017.99
23	0.75	80.77	0.60	64.62	5218.95	0.56	60.31	0.40	43.08	2597.87	0.40	43.08	0.32	34.46	1484.50	0.56	60.31	0.30	32.31	1948.40
24	0.65	70.00	0.44	47.38	3316.92	0.36	38.77	0.35	37.69	1461.30	0.45	48.46	0.35	37.69	1826.63	0.60	64.62	0.36	38.77	2505.09
25	0.64	68.92	0.44	47.38	3265.89	0.45	48.46	0.45	48.46	2348.52	0.44	47.38	0.31	33.38	1581.92	0.55	59.23	0.32	34.46	2041.18
Suma	1816.77	1229.85	8898.51		1407.54		944.46	52725.15		1112.46		924.00	41135.64		1451.85		842.15	48616.11		
Promedio	72.67	49.19	329.52		56.30		37.78	2154.01		44.50		36.96	1645.47		58.15		33.69	1944.64		
D.E. (σ)	8.78	8.87	605.66		11.58		5.59	452.46		2.61		3.36	184.80		7.43		7.12	434.48		

Promedio del área de las células del haz:

3555.95

Promedio del área de las células del envés:

2109.01

El promedio de las células del haz es:

1.68 veces el promedio de las células del envés.

El promedio de las células guardia es:

1.20 veces el promedio del ancho.

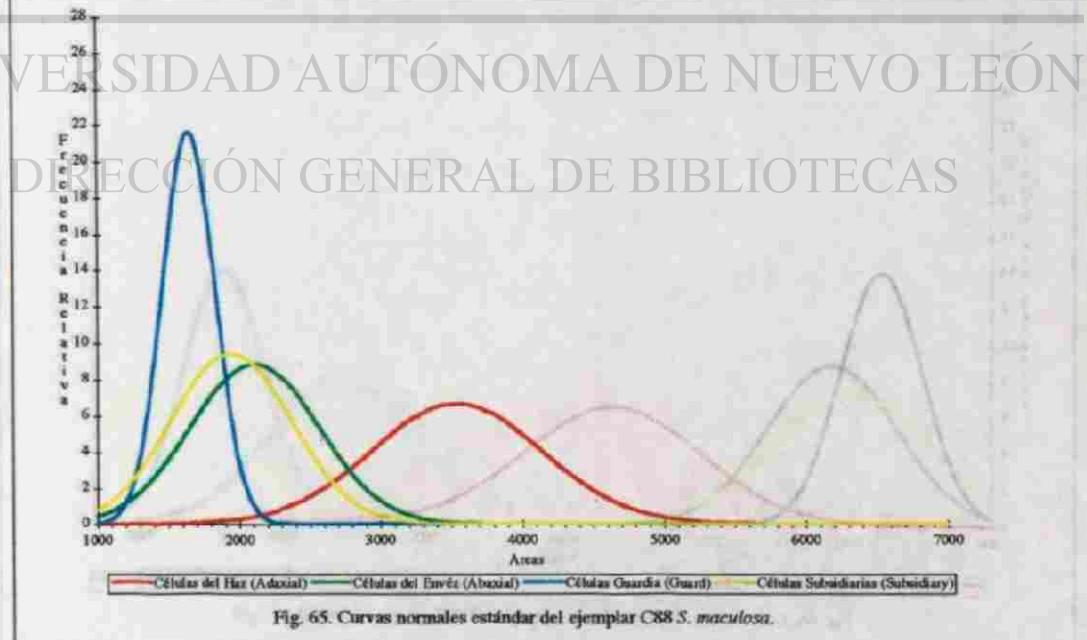
La media de las células subsidiarias es:

1.73 veces el promedio del ancho.

micas cuadradas

282.81 células/mm cuadrados

474.16 células/mm cuadrados



Cuadro 66. Datos estadísticos de C93 S. sp. ign. 'Huatusco'

Células del Ház (Adaxial Cells)			Células del Envir (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subsidiarias (Subsidiary Cells)			
#	Largo (L _a) μm	Ancho (A _a) μm	Área μm ²	Largo (L _e) μm	Ancho (A _e) μm	Área μm ²	Largo (L _g) μm	Ancho (A _g) μm	Área μm ²	Largo (L _s) μm	Ancho (A _s) μm	Área μm ²
1	0.70	73.38	0.48	51.69	3896.80	0.50	53.85	0.33	35.54	1913.61	0.48	51.69
2	0.65	70.00	0.50	53.85	3769.23	0.55	59.23	0.35	37.69	2232.54	0.44	47.38
3	0.89	95.85	0.48	51.69	4954.51	0.61	65.69	0.30	32.31	2122.37	0.45	48.46
4	0.66	71.08	0.32	34.46	2449.42	0.49	52.77	0.29	31.23	1648.02	0.40	43.08
5	0.85	91.54	0.41	44.15	4041.77	0.58	62.46	0.30	32.31	2017.99	0.41	44.15
6	0.85	91.54	0.45	48.46	4436.09	0.58	62.46	0.24	25.83	1614.39	0.41	44.15
7	0.86	92.62	0.40	43.08	3989.59	0.52	56.00	0.36	38.77	2171.08	0.40	43.08
8	0.92	99.08	0.36	38.77	3841.14	0.42	45.23	0.39	42.00	1899.69	0.44	47.38
9	0.66	71.08	0.50	53.85	3827.22	0.58	62.46	0.40	43.08	2690.65	0.50	53.85
10	0.68	73.23	0.54	58.15	4258.65	0.32	34.46	0.33	35.54	1224.71	0.50	53.85
11	0.61	63.69	0.49	52.77	3466.53	0.42	45.23	0.35	37.69	1704.85	0.46	49.54
12	0.60	64.62	0.40	43.08	2783.43	0.51	54.92	0.31	33.38	1833.59	0.46	49.54
13	0.59	63.54	0.40	43.08	2757.04	0.42	45.23	0.40	40.08	1948.40	0.44	47.38
14	0.78	84.00	0.39	42.00	3528.00	0.42	45.23	0.38	40.92	1850.98	0.50	53.85
15	0.75	80.77	0.42	45.23	3453.25	0.55	59.23	0.48	51.69	3061.77	0.41	44.15
16	0.75	80.77	0.40	43.08	3479.29	0.58	62.46	0.44	47.38	2959.72	0.40	43.08
17	0.69	74.31	0.40	43.08	3200.95	0.54	58.15	0.35	37.69	2191.95	0.49	52.77
18	0.86	92.62	0.40	43.08	3989.59	0.50	53.85	0.40	43.08	2319.53	0.40	43.08
19	0.60	64.62	0.43	45.23	2922.60	0.77	82.92	0.30	32.31	2679.03	0.40	43.08
20	0.80	86.15	0.54	58.15	5910.18	0.60	64.62	0.25	26.92	1739.64	0.46	49.54
21	0.81	87.23	0.39	42.00	3466.59	0.80	86.15	0.31	33.38	2876.21	0.41	44.15
22	0.70	73.38	0.38	40.92	3084.97	0.55	59.23	0.35	37.69	2252.54	0.41	44.15
23	0.77	82.92	0.38	40.92	3393.47	0.51	54.92	0.30	32.31	1774.44	0.34	36.62
24	0.80	86.15	0.38	40.92	3325.68	0.55	59.23	0.35	37.69	2232.54	0.40	43.08
25	0.70	73.38	0.46	49.54	3754.44	0.59	63.54	0.31	33.38	2121.21	0.40	43.08
Suma	1993.54	1151.23	91637.53		1449.54		922.92	53061.48		1164.15	948.77	43389.93
Promedio	79.82	46.05	3845.30		57.98		36.92	3122.48		46.57	37.95	1735.77
D.F. (n)	19.61	8.12	622.61		11.04		6.02	451.56		4.42	3.31	287.25

Promedio del área de las células del haz:

3665.50 micras cuadradas

272.81 células/mm cuadrados

Promedio del área de las células del envir:

2122.46 micras cuadradas

471.15 células/mm cuadrados

El promedio de las células del haz es:

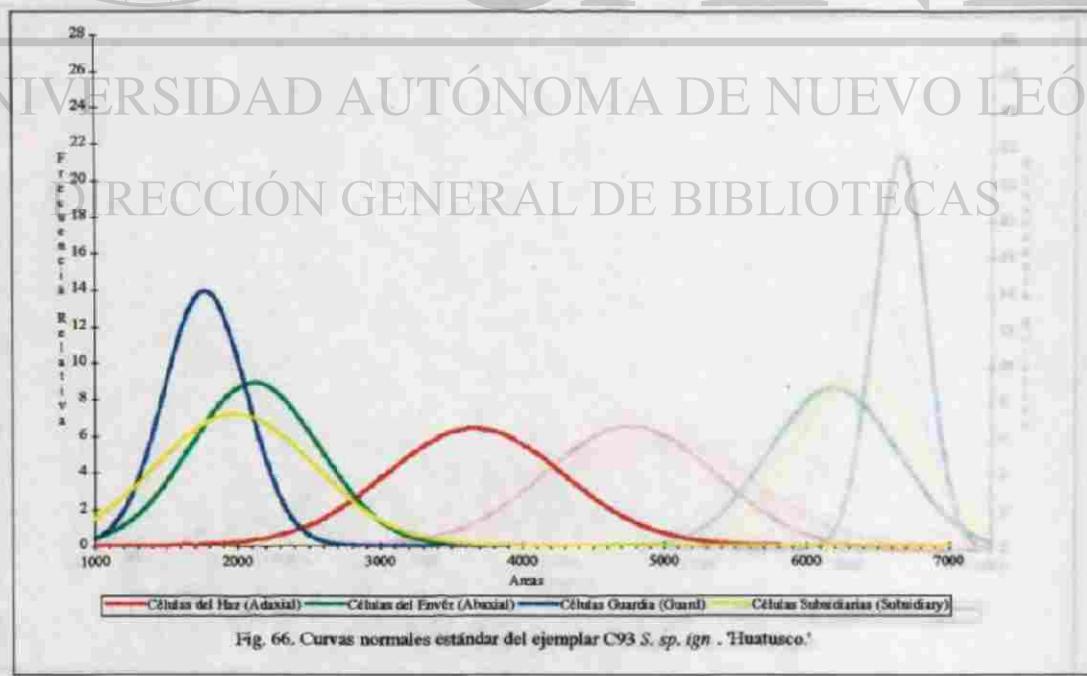
1.73 veces el promedio de las células del envir.

El promedio de las células guarda es:

1.23 veces el promedio del ancho.

El promedio de las células subsidiarias es:

1.57 veces el promedio del ancho.



Cuadro 67. Datos estadísticos de C94 *S. tigrina* '331 ER.'

#	Células del Ház (Adaxial Cells)			Células del Envés (Abaxial Cells)			Células Guardia (Guard Cells)			Células Subadiarias (Subsidary Cells)										
	Largo (Lz)	Ancho (Az)	Área	Largo (Lz)	Ancho (Az)	Área	Largo (Lz)	Ancho (Ag)	Área	Largo (Lz)	Ancho (Az)	Área								
	Índice	μ_{Lz}	μ_{Az}	μ_{Aa}	Índice	μ_{Lz}	μ_{Az}	μ_{Aa}	Índice	μ_{Lz}	μ_{Az}	μ_{Aa}								
1	0.75	80.77	0.52	56.00	4323.08	0.63	67.85	0.46	49.54	3360.99	0.42	45.23	0.30	32.31	1461.30	0.60	64.62	0.25	26.92	1739.64
2	0.86	92.62	0.50	53.85	4986.98	0.42	45.23	0.40	43.08	1948.40	0.48	51.69	0.31	33.38	1725.73	0.54	58.15	0.20	21.54	1252.54
3	0.88	94.77	0.50	53.85	5102.96	0.60	64.62	0.35	37.69	2435.50	0.48	51.69	0.37	39.85	2059.74	0.41	44.15	0.22	23.69	1046.11
4	0.89	94.77	0.43	46.31	4388.54	0.55	59.23	0.38	40.92	2423.90	0.46	49.54	0.40	43.08	2133.96	0.50	53.85	0.19	20.46	1101.77
5	0.81	87.23	0.60	64.62	5636.45	0.60	64.62	0.30	32.31	2087.57	0.50	53.85	0.37	39.85	2145.56	0.60	64.62	0.18	19.38	1252.54
6	0.96	103.38	0.42	45.25	4676.17	0.50	53.85	0.40	43.08	2319.33	0.49	52.77	0.40	43.08	2273.14	0.55	59.23	0.25	26.92	1594.67
7	0.66	71.08	0.42	45.23	3214.86	0.52	56.00	0.35	37.69	2110.77	0.48	51.69	0.36	38.77	2004.07	0.72	77.54	0.28	30.15	2338.08
8	0.64	68.92	0.51	54.92	3785.47	0.66	71.08	0.38	40.92	2008.69	0.48	51.69	0.40	43.08	2226.75	0.48	51.69	0.29	31.29	1614.39
9	0.78	84.00	0.39	42.00	3528.00	0.56	60.31	0.33	35.54	2143.24	0.46	49.54	0.38	40.92	2027.27	0.45	48.46	0.23	24.77	1200.53
10	0.71	76.46	0.44	47.38	3623.10	0.60	64.62	0.37	39.85	2574.67	0.46	49.54	0.38	40.92	2027.27	0.60	64.62	0.21	22.62	1461.30
11	0.81	87.23	0.44	47.38	4133.40	0.60	64.62	0.38	40.92	2644.26	0.46	49.54	0.31	33.38	1653.82	0.47	50.62	0.19	20.46	1035.67
12	0.80	86.15	0.50	53.85	4639.05	0.75	80.77	0.40	43.08	3479.29	0.49	52.77	0.35	37.69	1988.99	0.57	61.38	0.40	43.08	2644.26
13	0.85	91.54	0.42	45.23	4140.35	0.56	60.31	0.38	40.92	2467.98	0.46	49.54	0.37	39.85	1973.92	0.58	62.46	0.25	26.92	1681.66
14	0.60	54.62	0.42	45.23	2922.60	0.75	80.77	0.42	45.23	3653.25	0.48	51.69	0.37	39.85	2059.74	0.50	53.85	0.20	21.54	1159.76
15	0.90	96.92	0.41	44.15	4279.55	0.51	54.92	0.41	44.15	2425.06	0.48	51.69	0.41	44.15	2282.41	0.51	54.92	0.22	23.69	1301.25
16	0.81	87.23	0.46	49.54	4321.28	0.70	73.38	0.39	42.00	3166.15	0.48	51.69	0.41	44.15	2282.41	0.50	53.85	0.21	22.62	1217.75
17	0.69	54.62	0.49	52.77	3409.70	0.65	70.00	0.45	48.46	3392.31	0.49	52.77	0.32	34.46	1818.51	0.40	43.08	0.25	26.92	1159.76
18	0.69	74.31	0.50	53.85	4001.18	0.62	66.77	0.40	43.08	2876.21	0.42	45.23	0.32	34.46	1558.72	0.50	53.85	0.20	21.54	1159.76
19	0.80	86.15	0.42	45.23	3806.80	0.64	68.92	0.39	42.00	2894.77	0.42	45.23	0.33	35.54	1607.43	0.50	53.85	0.36	38.77	2087.57
20	0.88	94.77	0.47	50.62	4796.78	0.76	83.85	0.29	31.23	2556.12	0.42	45.23	0.32	34.46	1558.72	0.41	44.15	0.23	24.77	1093.66
21	0.60	64.62	0.46	49.54	3200.95	0.69	74.31	0.42	45.23	3360.99	0.45	48.46	0.35	37.69	1826.63	0.50	53.85	0.49	52.77	2841.42
22	0.89	95.85	0.45	48.46	4644.85	0.55	59.23	0.40	43.08	2551.48	0.50	53.85	0.40	43.08	2319.53	0.41	44.15	0.25	26.92	1188.76
23	0.78	84.00	0.42	45.23	3799.38	0.65	70.00	0.45	48.46	3392.31	0.49	52.77	0.40	43.08	2278.14	0.49	52.77	0.34	36.62	1321.17
24	0.85	91.54	0.50	53.85	4928.99	0.62	66.77	0.44	47.38	3163.83	0.37	39.85	0.32	34.46	1373.16	0.49	52.77	0.40	43.08	2273.14
25	0.80	86.15	0.30	53.85	4639.05	0.59	63.54	0.48	51.69	3264.45	0.42	45.23	0.35	37.69	1704.85	0.40	43.08	0.28	30.15	1298.93
Suma	2109.69	1248.15	105219.51		1645.54		1057.54	69621.74		1242.77	969.23	48366.76		1365.54	707.54	38676.94				
Promedio	84.39	49.93	4226.74		65.82		42.30	3787.74		49.71	38.77	2324.41		54.62	28.30	1547.08				
D.E. (d)	11.07		5.14		671.54		8.87		4.96	505.55		3.53	3.83	286.94		8.25		8.44	522.84	

Promedio del área de las células del haz:

4208.78

micras cuadradas 237.60 células/mm cuadrados

Promedio del Área de las células del envés:

2784.87

micras cuadradas 339.08 células/mm cuadrados

El promedio de las células del haz es:

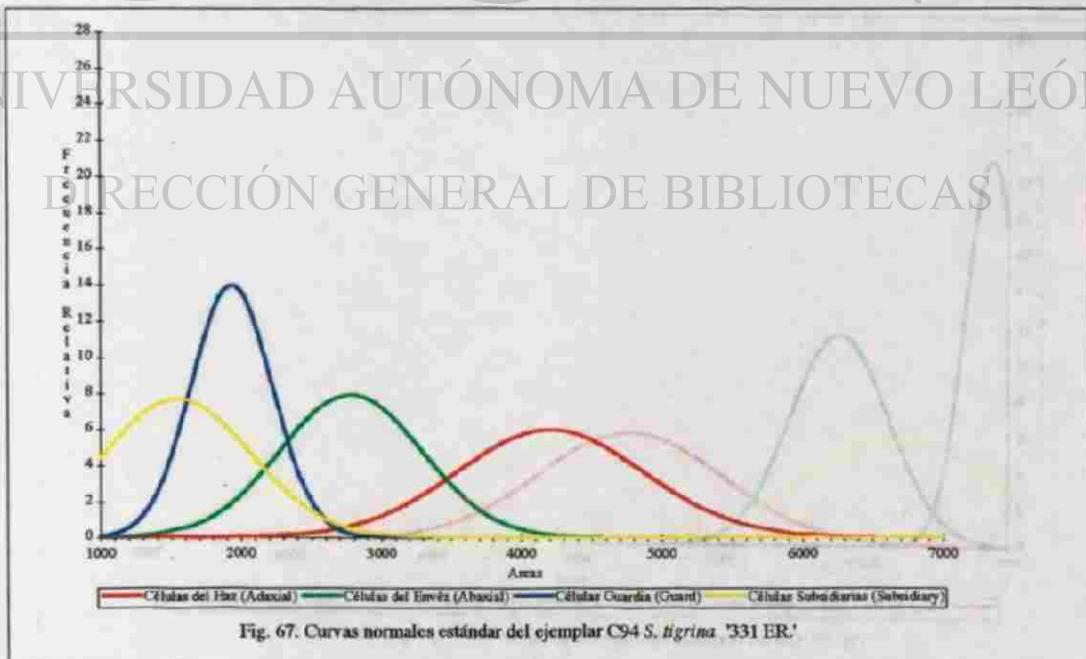
1.28 veces el promedio de las células del envés.

El promedio de las células guardia es:

1.28 veces el promedio del ancho.

El promedio de las células subsidiarias es:

1.93 veces el promedio del ancho.

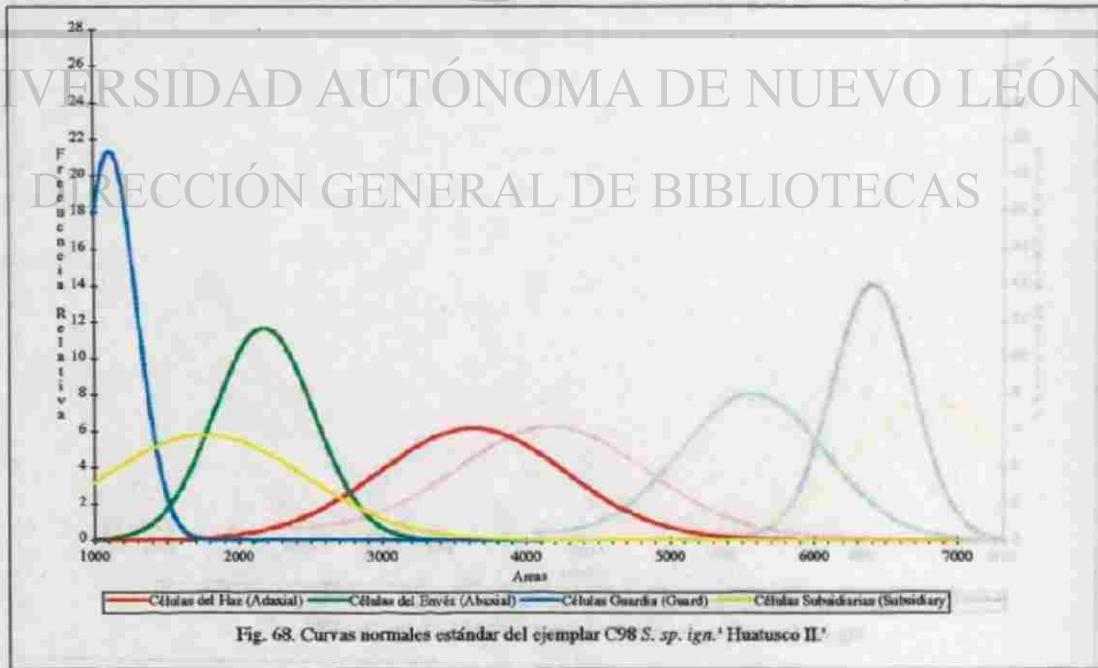


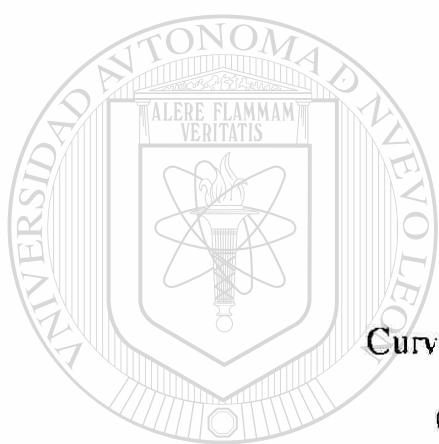
Cuadro 68. Datos estadísticos de C98 S. sp. ign. 'Huatusco II.'

C98 S. sp. ign. 'Huatusco II' PM/240798-1			Méx. Ver. Huatusco I; N.19d. 08.458° W.96d. 57.395° elev. 1200 m (±33.3600 ft); planta con 1 infl 240798; fotografada.																	
#	Células del Hax (Adaxial Cells)		Células del Envéz (Abaxial Cell)		Células Guardia (Guard Cells)		Células Subadiarias (Subsidiary Cells)													
	Largo (Lh) Índice	Ancho (Alt) Índice	Largo (Le) Índice	Ancho (Ae) Índice	Área μm²	Largo (Lg) Índice	Ancho (Ag) Índice	Área μm²	Largo (Ls) Índice	Ancho (As) Índice	Área μm²									
1	0.73	80.77	0.51	54.92	4436.09	0.52	56.00	0.40	43.08	241.31	0.42	45.23	0.28	30.15	1363.88	0.36	38.77	0.49	52.77	2045.82
2	0.65	70.00	0.50	53.85	3769.23	0.49	52.77	0.37	39.85	2102.65	0.41	44.15	0.28	30.15	1331.41	0.39	42.00	0.26	28.00	1176.00
3	0.61	65.69	0.46	49.54	3254.30	0.56	60.31	0.42	45.73	2727.76	0.38	40.92	0.30	32.31	1322.13	0.40	43.08	0.22	23.69	1020.59
4	0.70	75.58	0.39	42.00	3166.15	0.61	65.69	0.37	39.85	2617.59	0.31	33.38	0.26	28.00	934.77	0.34	36.62	0.20	21.54	788.64
5	0.81	87.23	0.41	44.15	3851.57	0.59	63.54	0.38	46.92	2600.19	0.30	32.31	0.30	32.31	1043.79	0.47	50.62	0.47	50.62	2561.92
6	0.86	92.62	0.46	49.54	4588.02	0.50	53.85	0.41	44.15	2377.51	0.38	40.92	0.21	22.62	925.49	0.30	32.31	0.42	45.23	1461.30
7	0.60	64.62	0.46	49.54	3200.95	0.50	53.85	0.40	43.08	2319.53	0.37	34.46	0.26	28.00	964.92	0.52	56.00	0.40	43.08	2412.31
8	0.85	91.54	0.46	49.54	4334.67	0.46	49.54	0.31	33.38	1653.82	0.33	35.54	0.23	24.77	880.26	0.56	60.31	0.41	44.15	2662.82
9	0.76	81.85	0.50	53.85	4407.10	0.52	56.00	0.40	43.08	2412.31	0.33	35.54	0.30	32.31	1148.17	0.22	23.69	0.40	43.08	1020.59
10	0.86	92.62	0.38	40.92	3790.11	0.52	56.00	0.40	43.08	2412.31	0.33	35.54	0.27	29.08	1033.35	0.38	40.92	0.22	23.69	969.56
11	0.79	85.08	0.42	45.23	3848.09	0.40	43.08	0.31	33.38	1438.11	0.25	26.92	0.20	21.54	579.88	0.23	24.77	0.49	43.08	1066.98
12	0.55	59.23	0.40	43.08	2351.48	0.44	47.38	0.36	38.77	1857.06	0.39	42.00	0.26	28.00	1176.00	0.28	30.15	0.45	48.46	1461.30
13	0.80	86.15	0.40	43.08	3711.34	0.51	54.92	0.36	38.77	2129.35	0.39	42.00	0.28	30.15	1266.46	0.28	30.15	0.40	43.08	1298.98
14	0.60	64.62	0.34	36.62	2365.92	0.51	54.92	0.33	33.54	1951.88	0.37	39.85	0.30	32.31	1287.34	0.58	62.46	0.30	53.85	3303.51
15	0.60	64.62	0.38	40.92	2644.26	0.47	50.62	0.41	44.15	2234.86	0.35	37.69	0.30	32.31	1217.75	0.28	30.15	0.30	53.85	1623.67
16	0.78	84.00	0.40	43.08	3618.46	0.57	61.38	0.37	39.85	2445.94	0.37	39.85	0.23	24.77	986.96	0.29	31.23	0.36	38.77	1210.79
17	0.77	82.92	0.41	44.15	3661.37	0.50	53.85	0.35	37.69	2029.59	0.36	38.77	0.25	26.92	1043.79	0.30	32.31	0.45	48.46	1565.68
18	0.82	88.31	0.35	37.69	3328.52	0.57	61.38	0.37	39.85	2445.94	0.40	43.08	0.26	28.00	1206.15	0.37	34.46	0.40	43.08	1484.50
19	0.53	57.08	0.40	43.08	2458.70	0.58	62.46	0.30	32.31	2017.99	0.36	38.77	0.30	32.31	1252.54	0.30	32.31	0.40	43.08	1391.72
20	0.66	64.62	0.47	50.62	3270.33	0.47	50.62	0.28	30.15	1526.25	0.40	43.08	0.22	23.69	1020.59	0.30	32.31	0.40	43.08	1391.72
21	0.72	77.54	0.50	53.85	4175.15	0.50	53.85	0.31	33.38	1797.63	0.40	43.08	0.28	30.15	1298.93	0.50	53.85	0.45	48.46	2609.47
22	0.80	86.15	0.41	44.15	3804.02	0.60	64.62	0.30	32.31	2087.57	0.39	42.00	0.28	30.15	1366.46	0.51	54.92	0.41	44.15	2425.06
23	0.83	91.54	0.41	44.15	4041.77	0.50	53.85	0.41	44.15	2377.51	0.34	36.62	0.25	26.92	985.80	0.41	44.15	0.50	53.85	2377.51
24	0.80	86.15	0.40	43.08	3711.24	0.59	63.54	0.36	38.77	2463.34	0.35	37.69	0.24	25.85	974.20	0.53	57.08	0.40	43.08	2458.70
25	0.92	99.08	0.42	45.25	4481.32	0.52	56.00	0.33	33.54	1990.15	0.38	40.92	0.29	31.23	1278.00	0.39	42.00	0.50	53.85	2261.54
Suma	1979.38	1145.85	90670.28		1400.00		970.31	54409.13		970.31		714.00	27789.08		1016.62		1078.00	44110.43		
Promedio	79.18	45.85	34826.80		56.00		38.81	3400.00		38.81		28.56	3331.30		40.66		43.12	1764.42		
D.E. (σ)	12.00	5.07	632.96		5.69		4.47	343.05		4.29		3.26	187.19		11.48		9.51	680.19		

Promedio del área de las células del hax: 3426.81
 Promedio del área de las células del envéz: 2176.37
 El promedio de las células del hax es:
 El promedio de las células guardia es:
 El promedio de las células subadiarias es:

micras cuadradas 275.72 células/mm cuadrados
 micras cuadradas 459.48 células/mm cuadrados
 1.67 veces el promedio de las células del envéz.
 1.36 veces el promedio del ancho.
 0.94 veces el promedio del ancho.





Anexo II

Curvas Normales Estándar de Combinaciones

(Normal Standard Curves of Combinations)

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DIRECCIÓN GENERAL DE BIBLIOTECAS

INDICE DE COMBINACIONES DE LAS CURVAS NORMALES ESTANDAR
 (Index of Combinations of Normal Standard Curves)

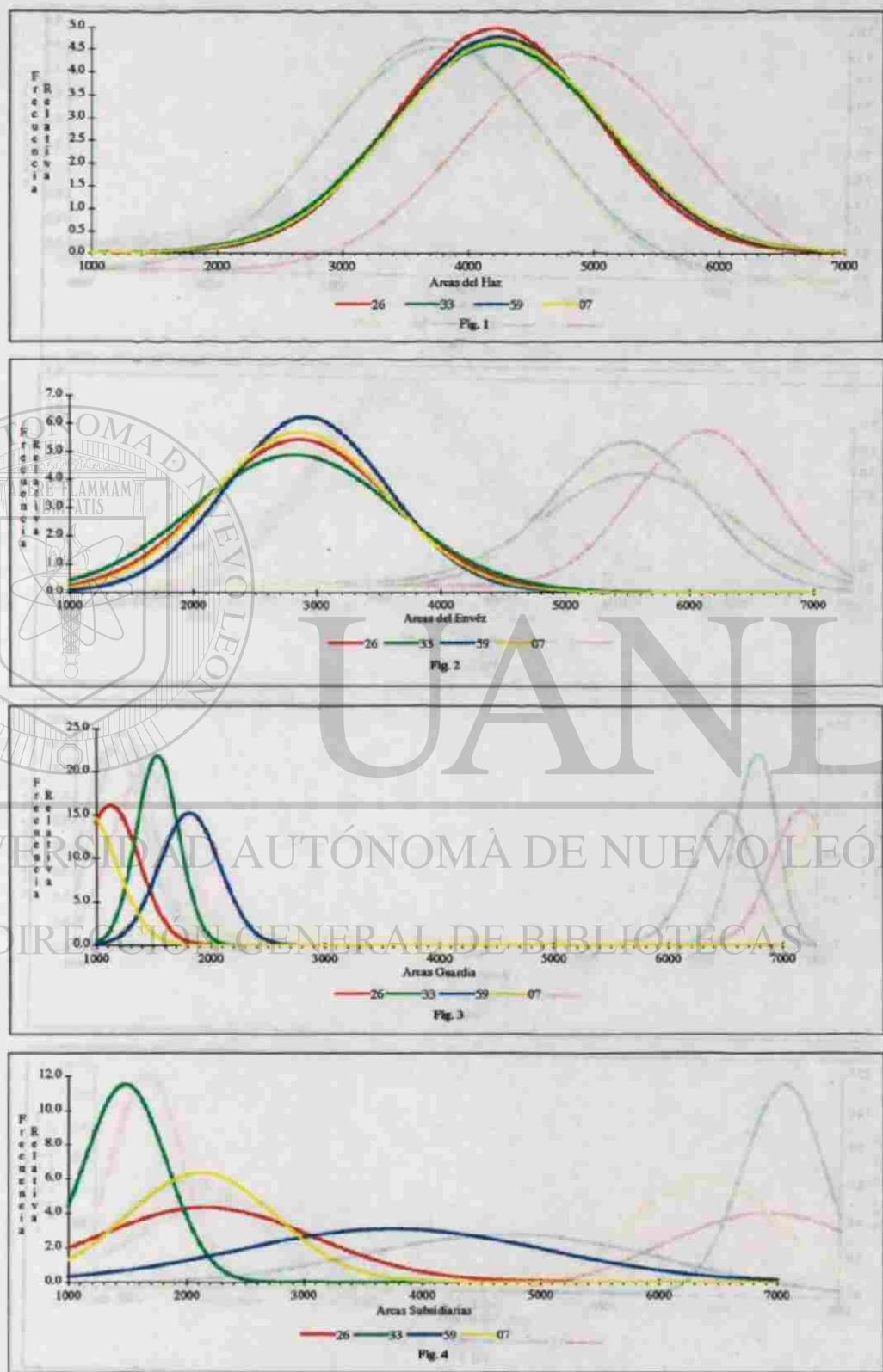
Figuras	Emplejares	Página
1 - 4	C26, C33, C59, C07 <i>S. tigrina</i>	A II - 1
5 - 8	C15 <i>S. nigroviolacea</i> ; C33, C59, C07 <i>S. tigrina</i>	A II - 2
9-12	C13, C12, C62, C14 <i>S. wardii</i>	A II - 3
13-16	C51 <i>S. intermedia</i> ; C09, C08, C64 <i>S. graveolens</i>	A II - 4
17-20	C51 <i>S. intermedia</i> ; C02, C45, C01 <i>S. saccata</i>	A II - 5
21-24	C51 <i>S. intermedia</i> ; C04, C49, C53 <i>S. hernandezii</i>	A II - 6
25-28	C51 <i>S. intermedia</i> ; C06, C77, C05 <i>S. oculata</i>	A II - 7
29-32	C66, C22 <i>S. eburnea</i> ; C25, C67 <i>S. grandiflora</i>	A II - 8
33-36	C51 <i>S. intermedia</i> ; C05, C06 <i>S. oculata</i> ; C21 <i>S. reichenbachiana</i>	A II - 9
37-40	C02, C45, C01 <i>S. saccata</i> ; C69 <i>S. radiosa</i>	A II - 10
41-44	C83 <i>S. cf. amoena</i> ; C13, C12, C14 <i>S. wardii</i>	A II - 11
45-48	C17 <i>S. costaricensis</i> ; C83 <i>S. cf. amoena</i> ; C58 <i>S. panamensis</i> ; C23 <i>S. ecornuta</i>	A II - 12
49-52	C58 <i>S. panamensis</i> ; C56 <i>S. Chocolate Chips 'Lindt'</i> ; C59, C07 <i>S. tigrina</i>	A II - 13
53-56	C59, C07 <i>S. tigrina</i> ; C60 <i>S. Love Potium 'No. 9'</i> ; C28 <i>S. connata</i>	A II - 14
57-60	C26 <i>S. tigrina</i> ; C61 <i>S. Assideensis</i> ; C13, C62 <i>S. wardii</i>	A II - 15
61-64	C23 <i>S. ecornuta</i> ; C63 <i>S. Penelope</i> ; C77, C06 <i>S. oculata</i>	A II - 16
65-68	C35 <i>G. utriculata</i> ; C38 <i>M. corymbosa</i> ; C37, C86 <i>G. supurba</i>	A II - 17
69-72	C28 <i>M. corymbosa</i> ; C37, C86 <i>G. supurba</i> ; C39 <i>Spiranthes sp. ign.</i>	A II - 18
73-76	C37 <i>G. utriculata</i> ; C86 <i>G. supurba</i> ; C39, C36 <i>Spiranthes spp. ign.</i>	A II - 19
77-80	C51 <i>S. intermedia</i> ; C03, C16 <i>S. insignis</i> ; C21 <i>S. reichenbachiana</i>	A II - 20
81-84	C94 <i>S. tigrina</i> '331 ER'; C33, C59, C07 <i>S. tigrina</i>	A II - 21
85-88	C51 <i>S. hernandezii</i> ; C31, C54 <i>S. platyceras</i> ; C21 <i>S. reichenbachiana</i>	A II - 22
89-92	C04 <i>S. hernandezii</i> ; C52 <i>S. connata</i> ; C16, C03 <i>S. insignis</i>	A II - 23
93-96	C50 <i>S. pulla</i> ; C31 <i>S. platyceras</i> ; C47 <i>S. embreei</i> ; C21 <i>S. reichenbachiana</i>	A II - 24
97-100	C45 <i>S. saccata</i> ; C08 <i>S. graveolens</i> ; C10 <i>S. martiana</i> ; C69 <i>S. radiosa</i>	A II - 25
101-104	C93 <i>S. cf. amoena</i> ; C98 <i>S. 'Huatusco II'</i> ; C93 <i>S. 'Huatusco'</i> ; C17 <i>S. costaricensis</i>	A II - 26
105-108	C48 <i>S. inodora</i> ; C93 <i>S. 'Huatusco'</i> ; C98 <i>S. 'Huatusco II'</i> ; C06 <i>S. oculata</i>	A II - 27

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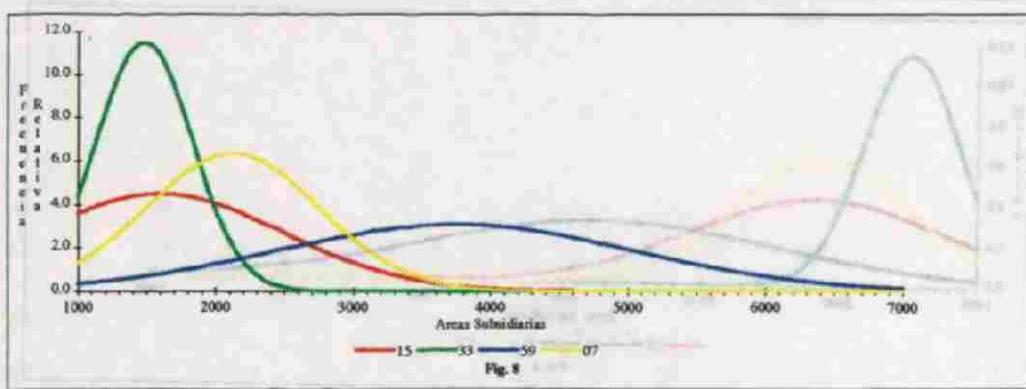
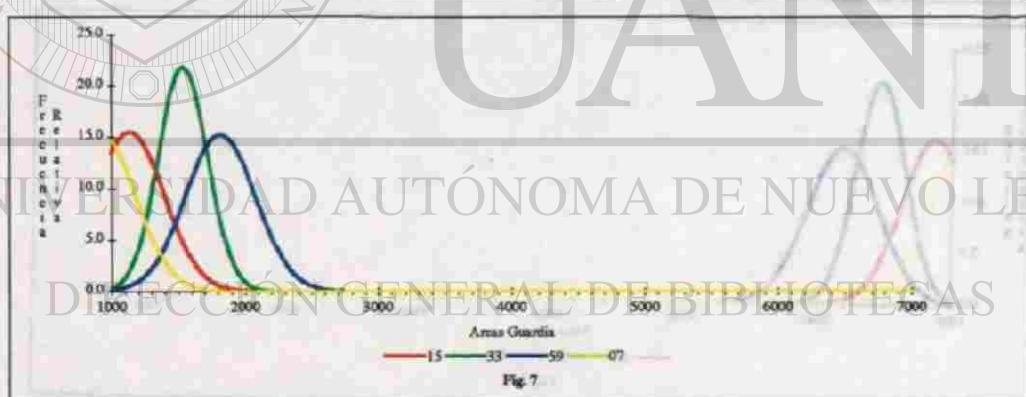
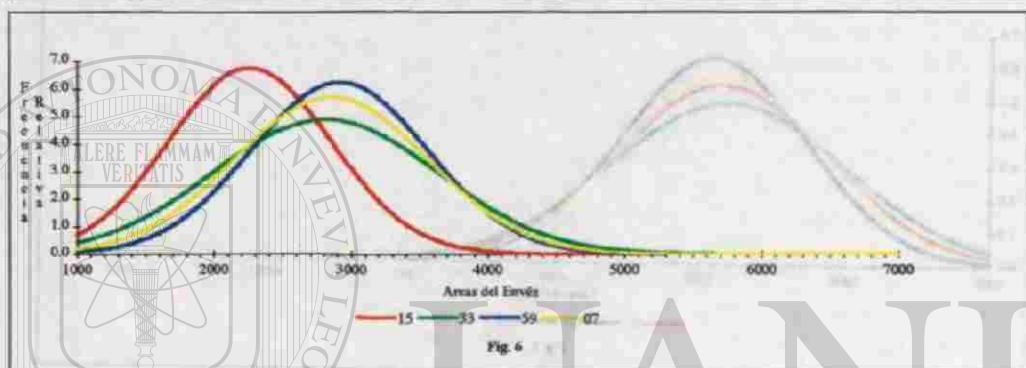
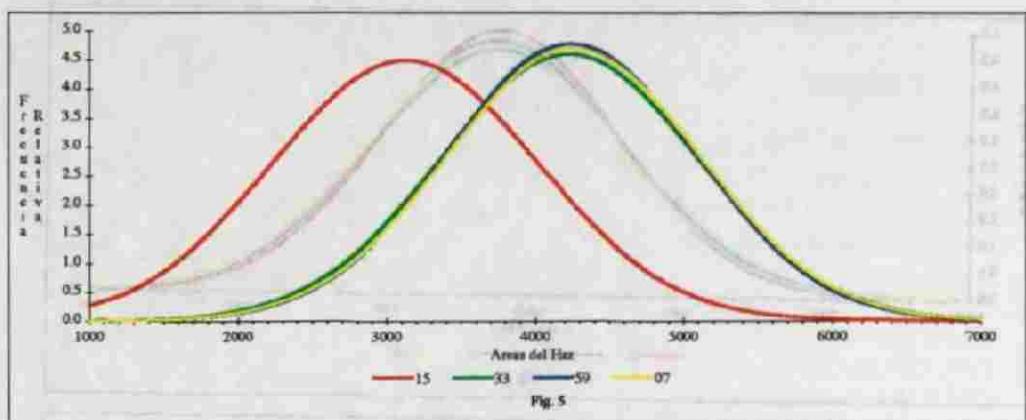
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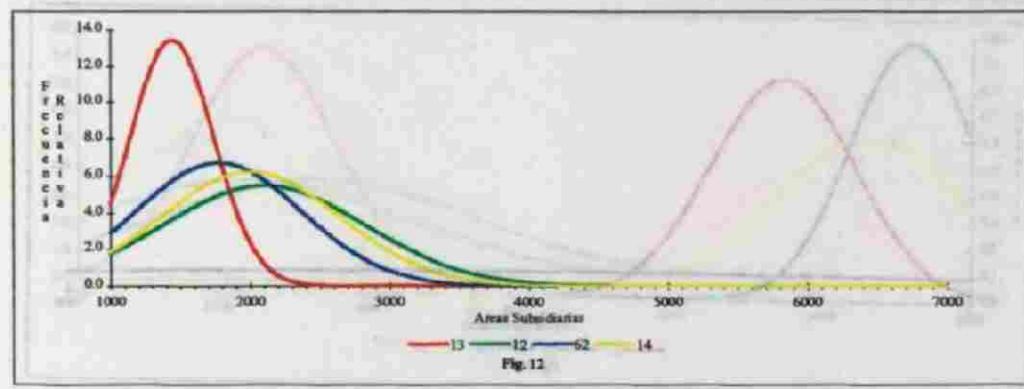
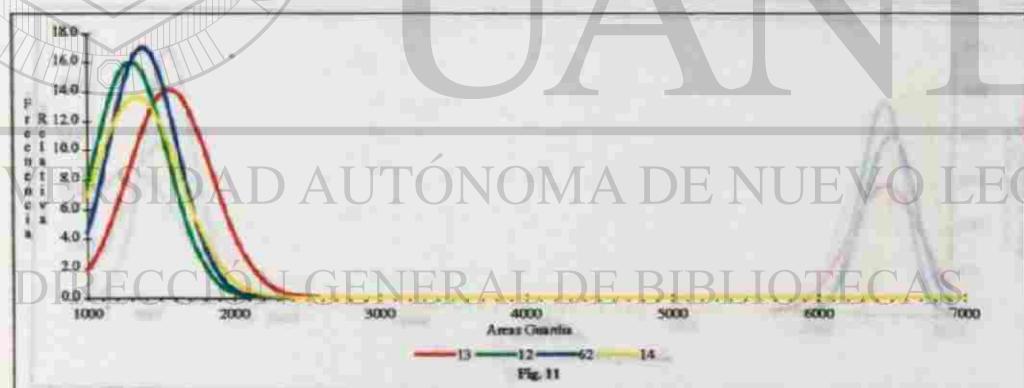
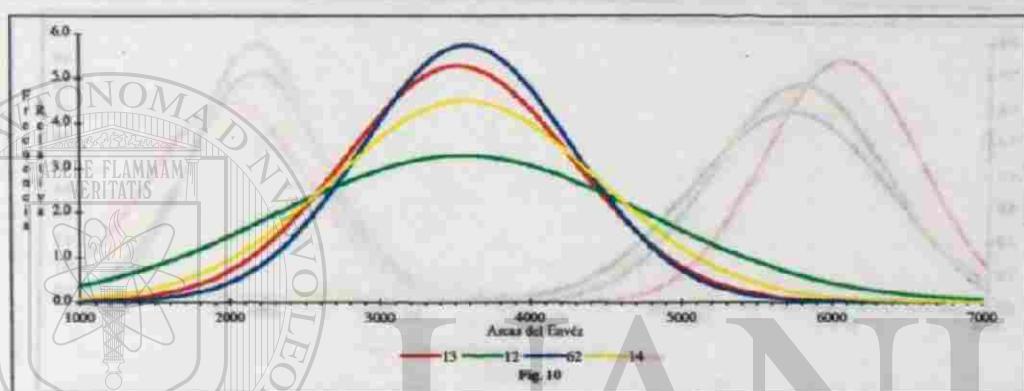
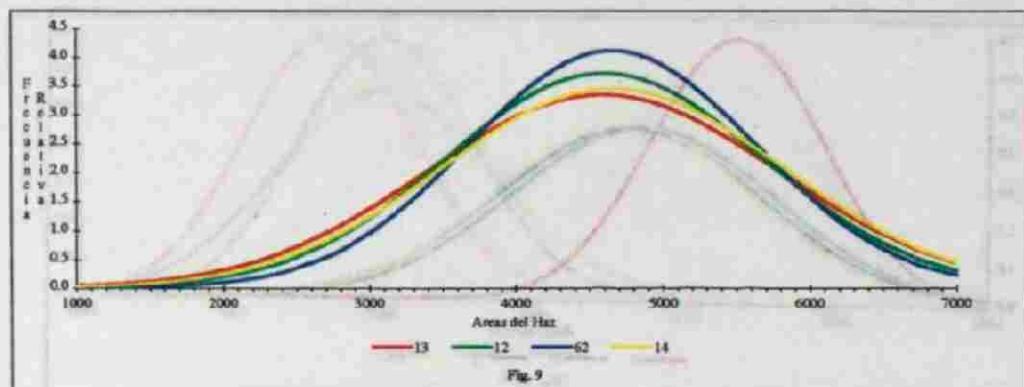
Figuras 1-4. Curvas de Gauss: C26, C33, C59, C07 S. *tigrinus*.



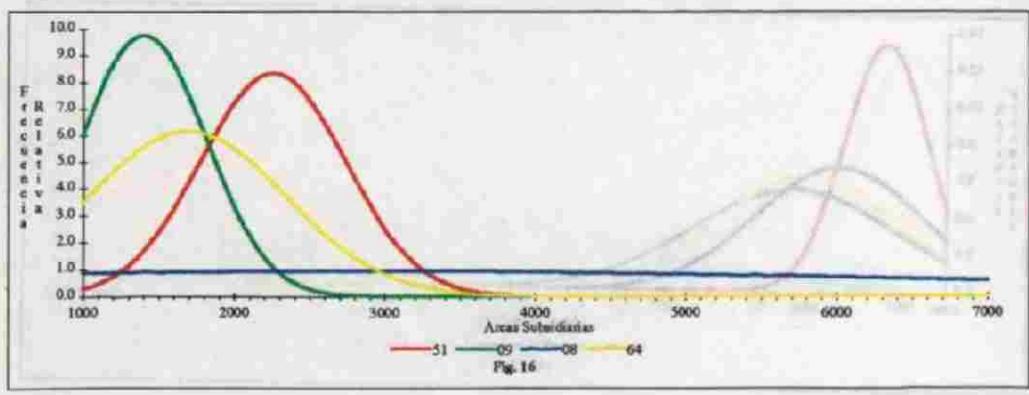
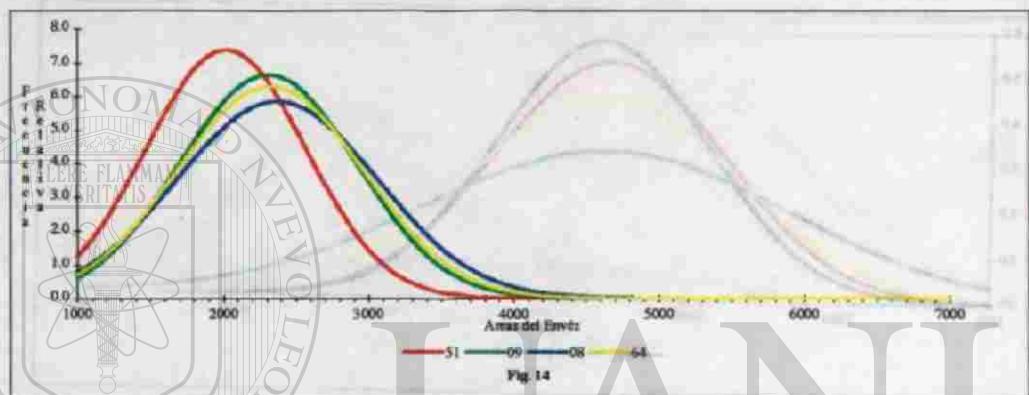
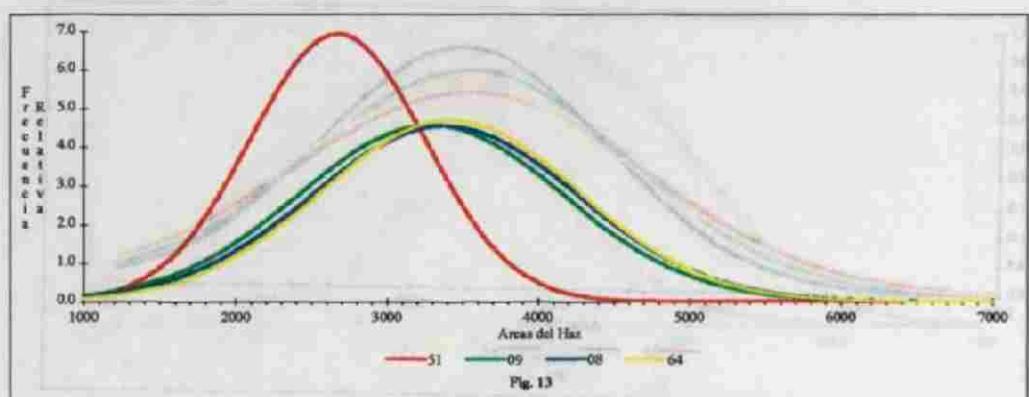
Figuras 5-8. Curvas de Gauss: C15 *S. nigroviridis* y C33, CS9, CU7 *S. tigrinus*.



Figuras 9-12. Curvas de Gauss: C13, C12, C62, y C14.S. wardi.



Figuras 13-16. Curvas de Gauss. CSI S. intermedia y C09, C08, C64 S. graveolera.



Figuras 17-20. Curvas de Gauss: CSI S. intermedia y C02, C04, C01 S. siccata.

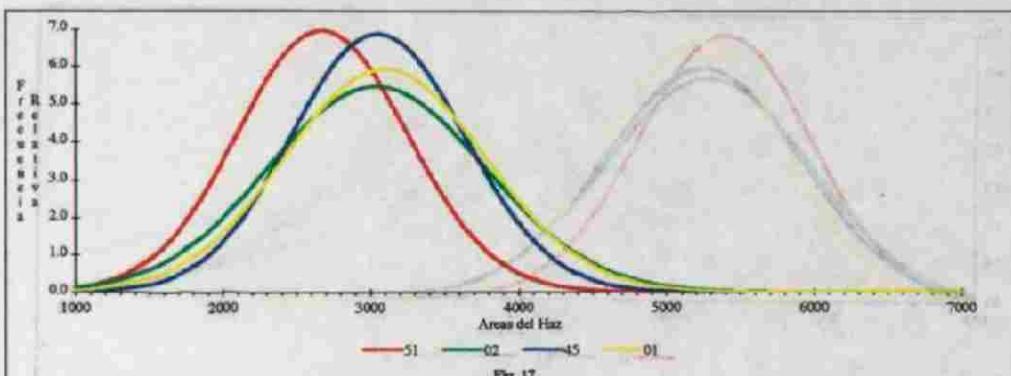


Fig. 17

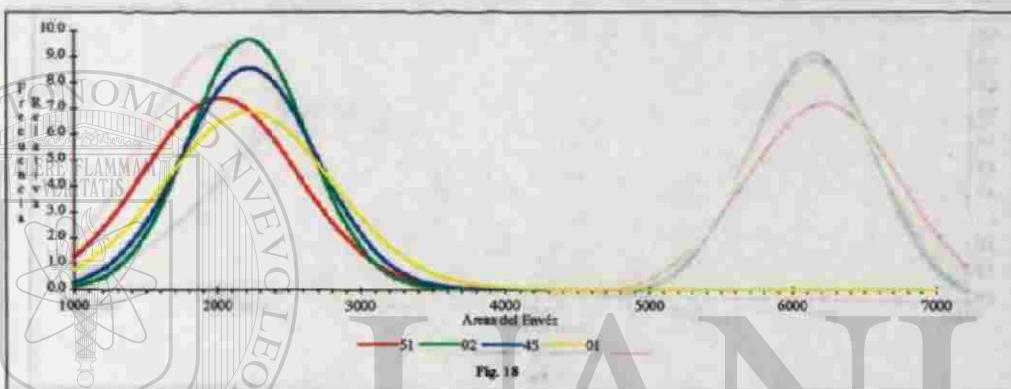


Fig. 18

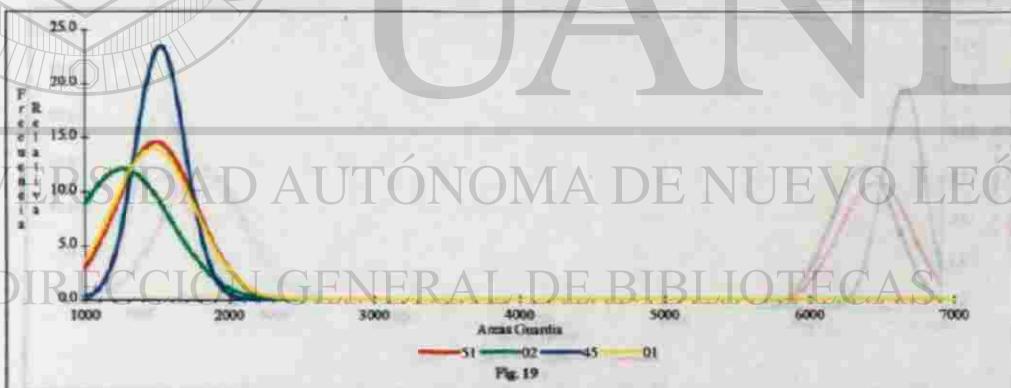


Fig. 19

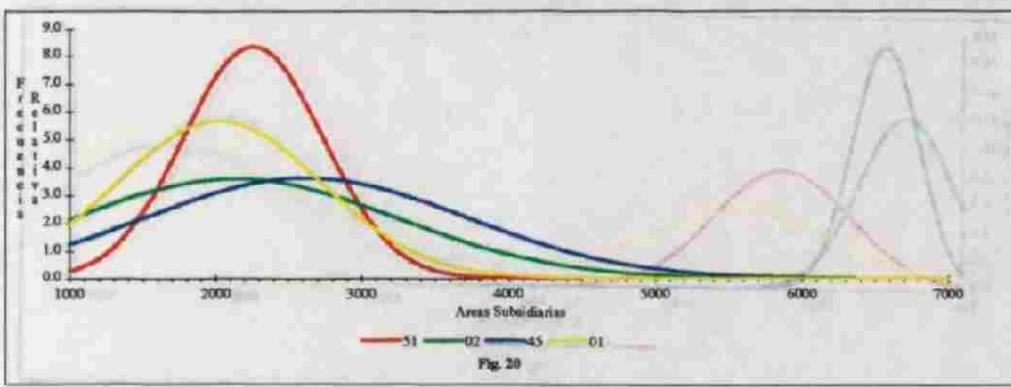
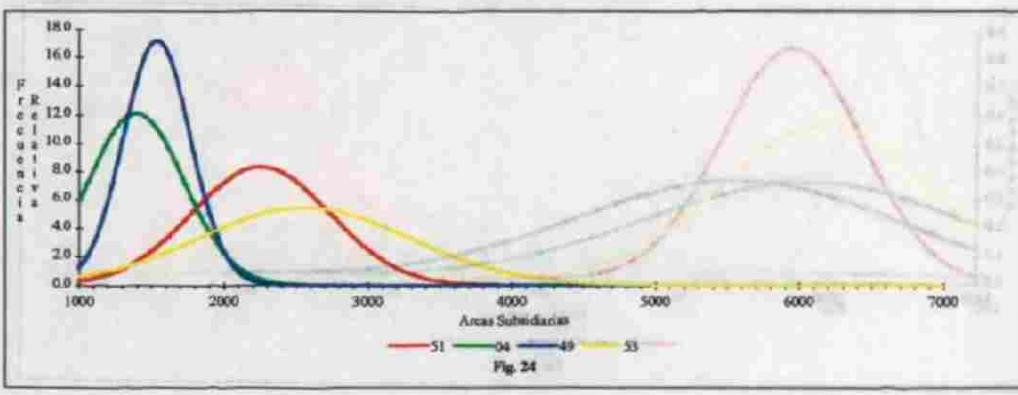
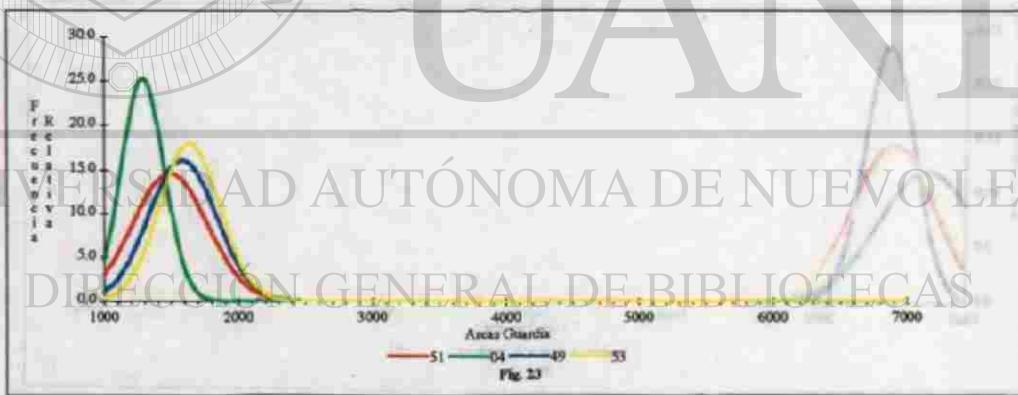
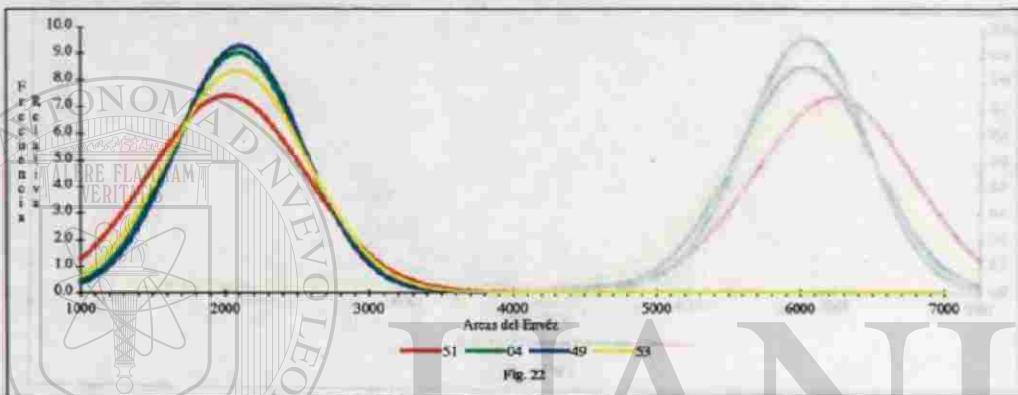
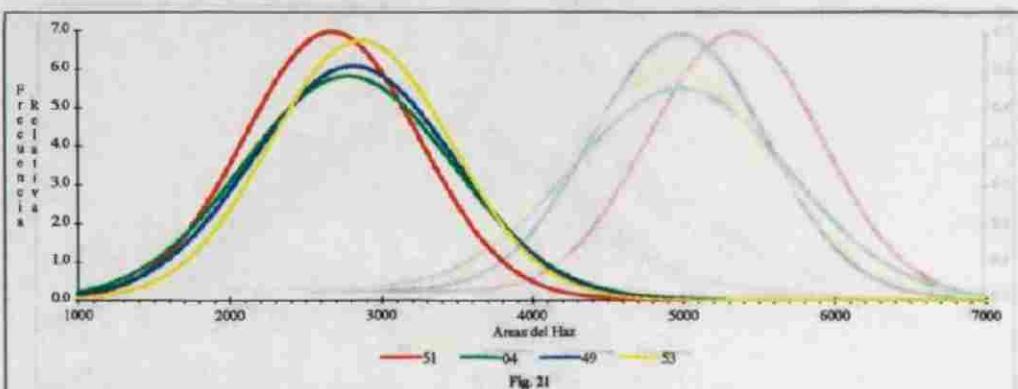
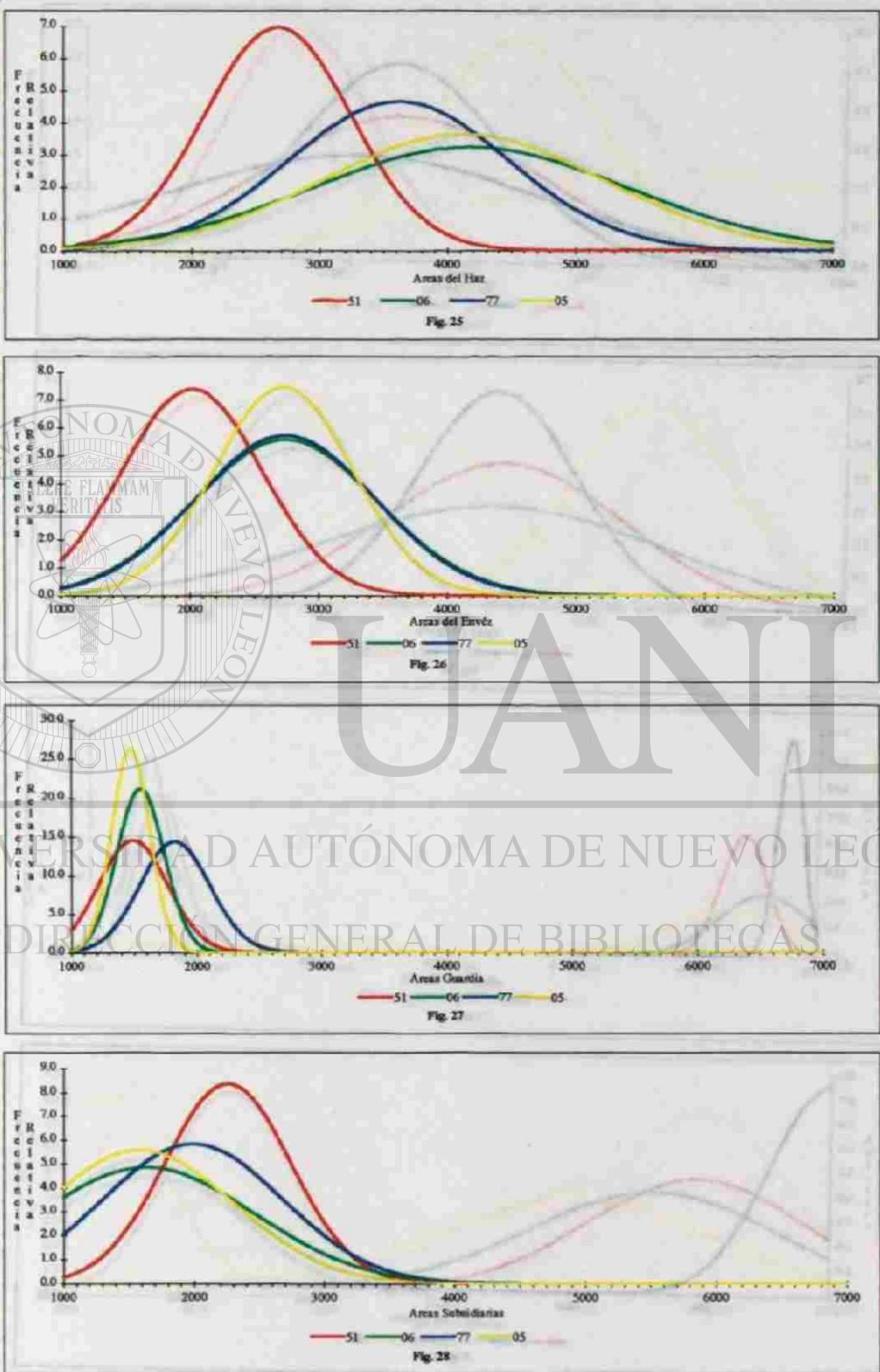


Fig. 20

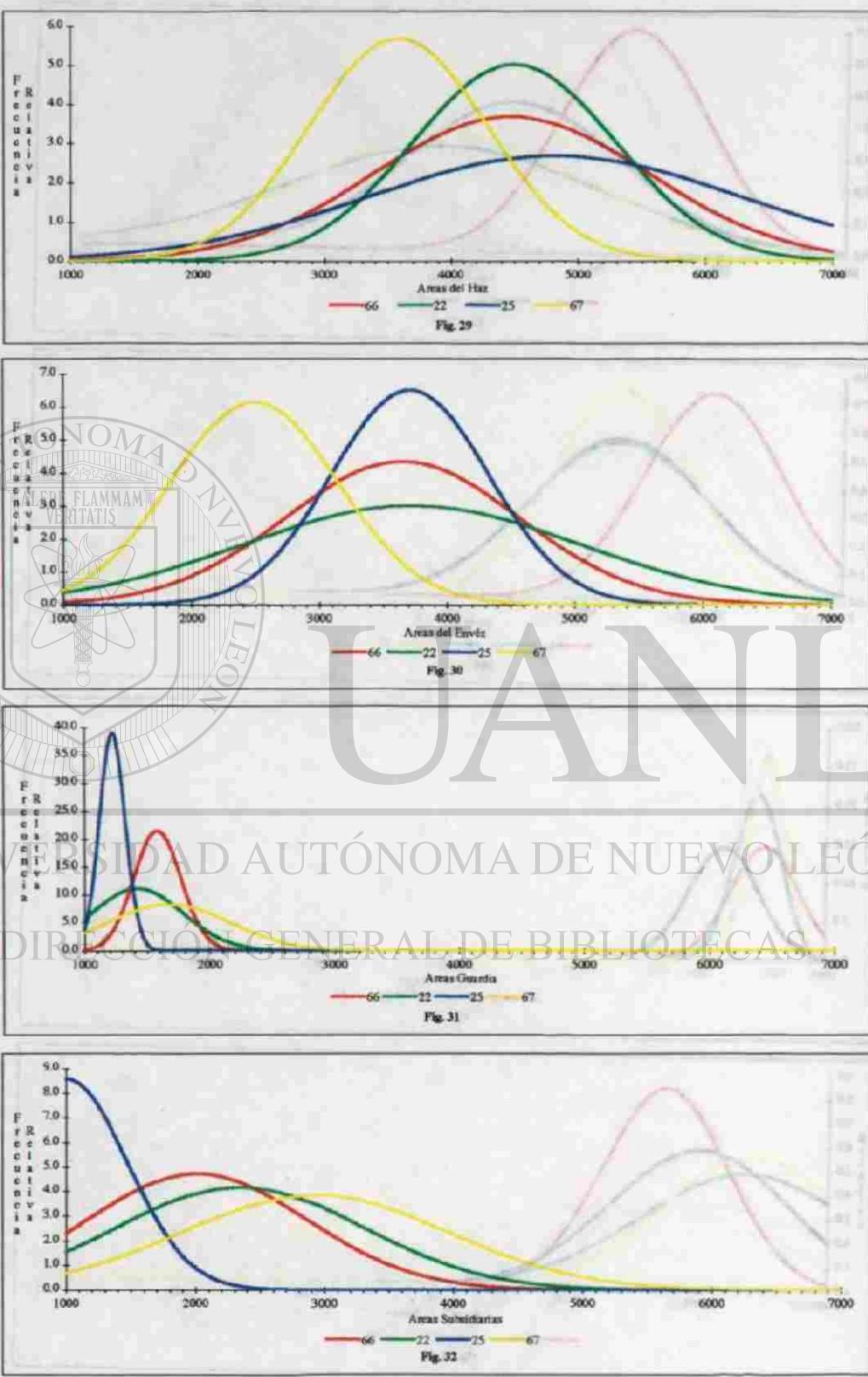
Figuras 21-24. Curvas de Gauss. CS1 S. intermedia y C04, C49, C53 S. hernandez.



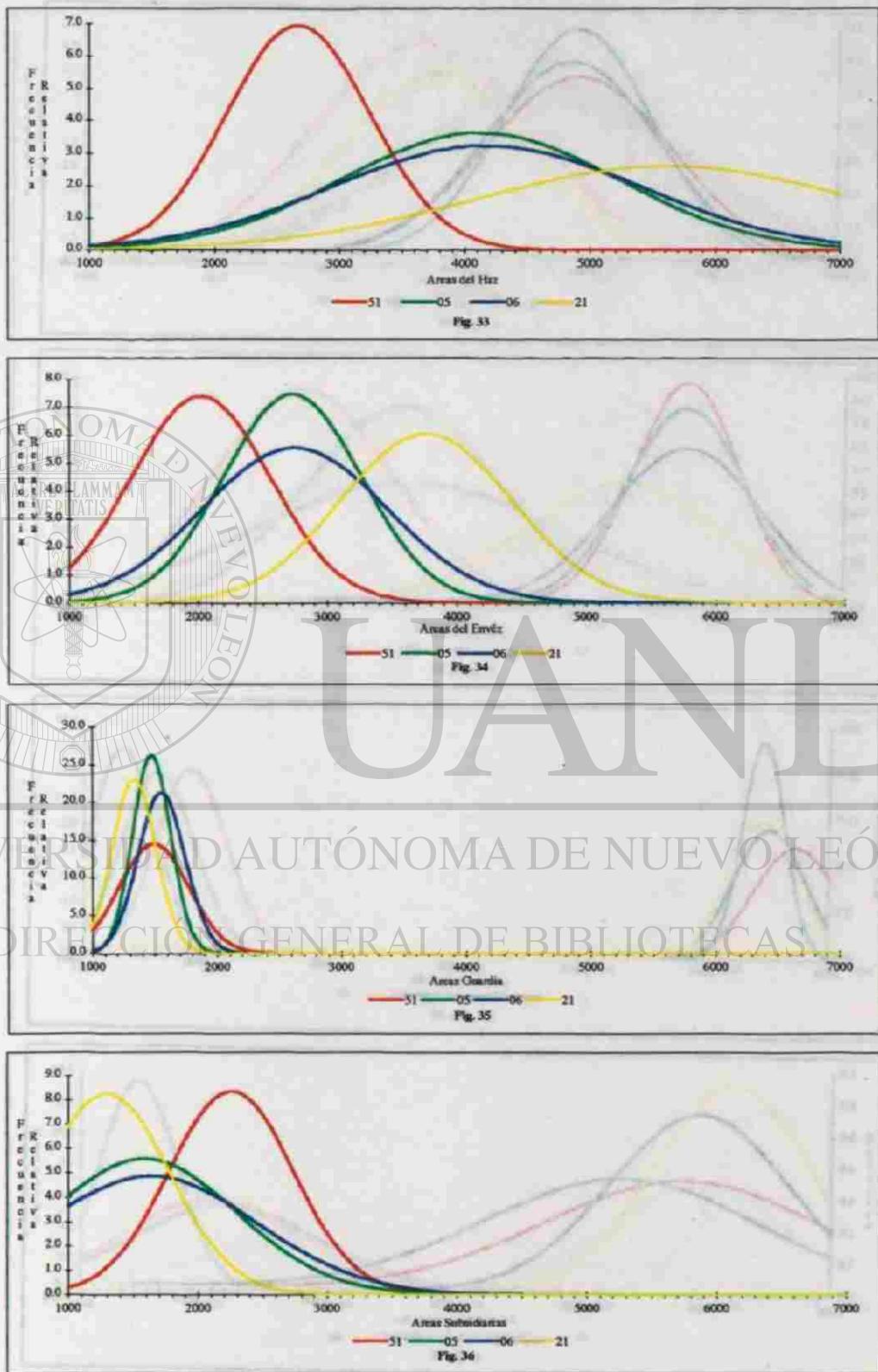
Figuras 25-28. Curvas de Gauss. C51, J. intermedia y C06, C77, C05 S. occidentalis.



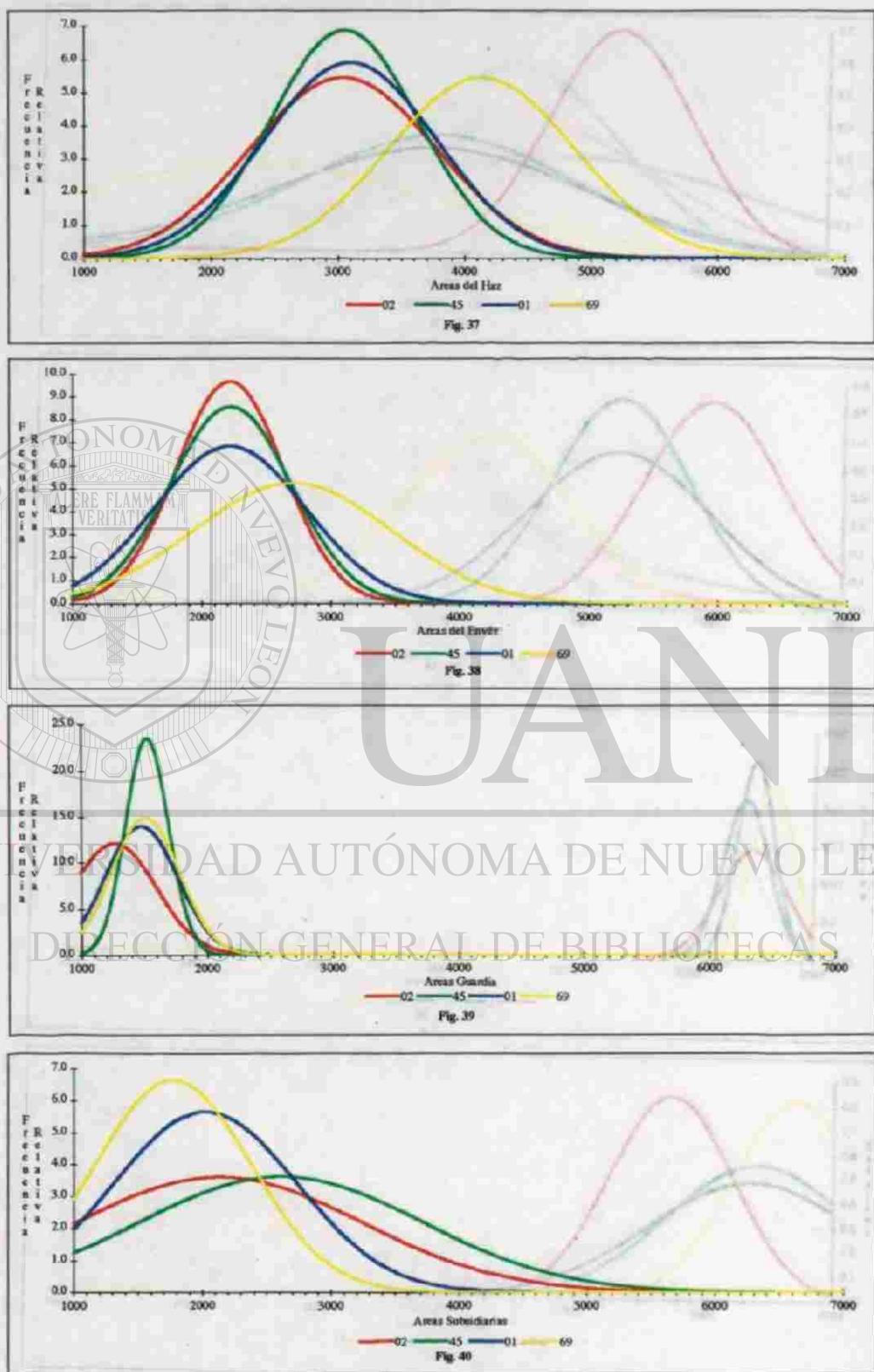
Figuras 29-32. Curvas de Gauss: C66, C22 *S. elutus*, C25, C67 *S. grandiflora*.



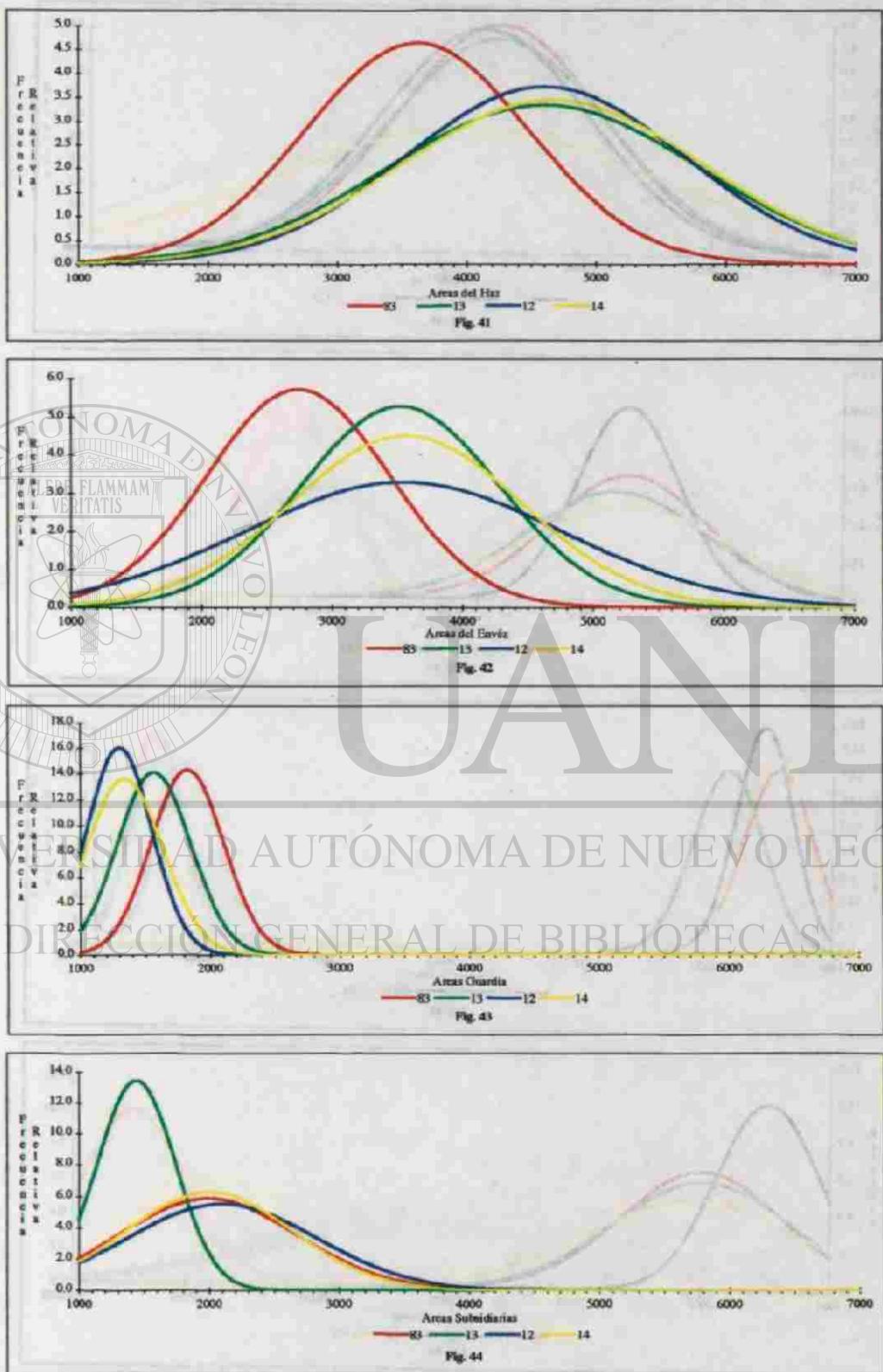
Figuras 33-36. Curvas de Gauss. C51 *S. intermedia*; C05, C06 *S. ovalata*; C21 *S. reichenbachiensis*.



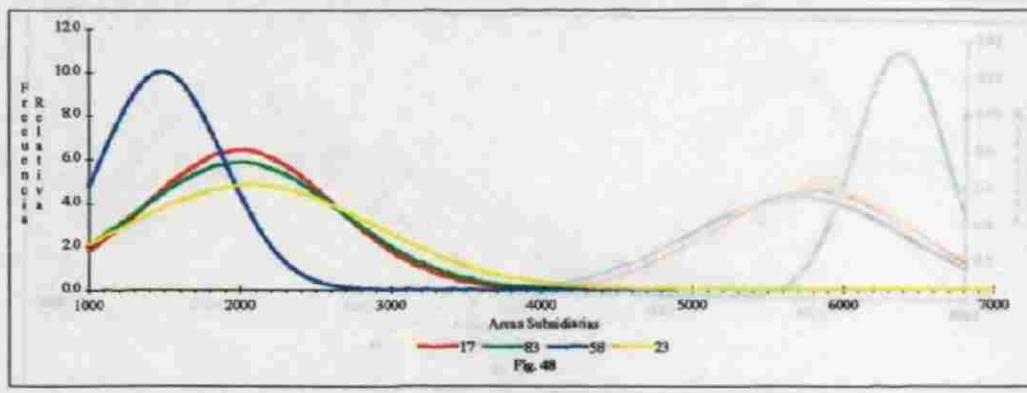
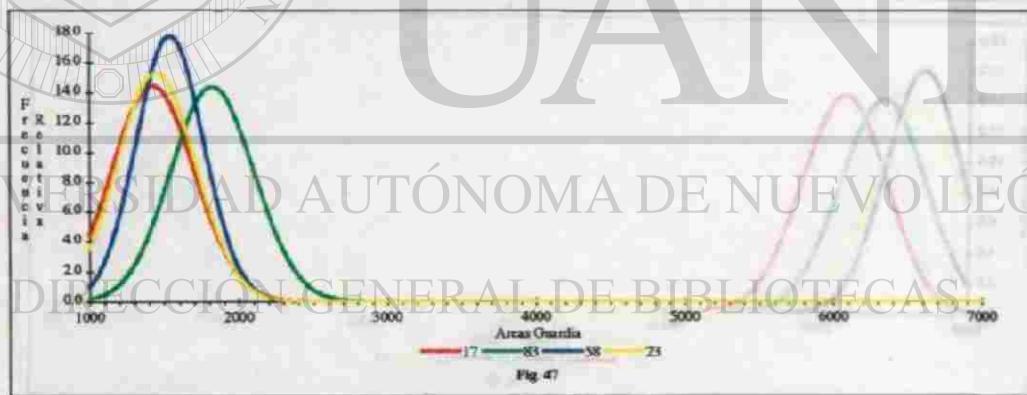
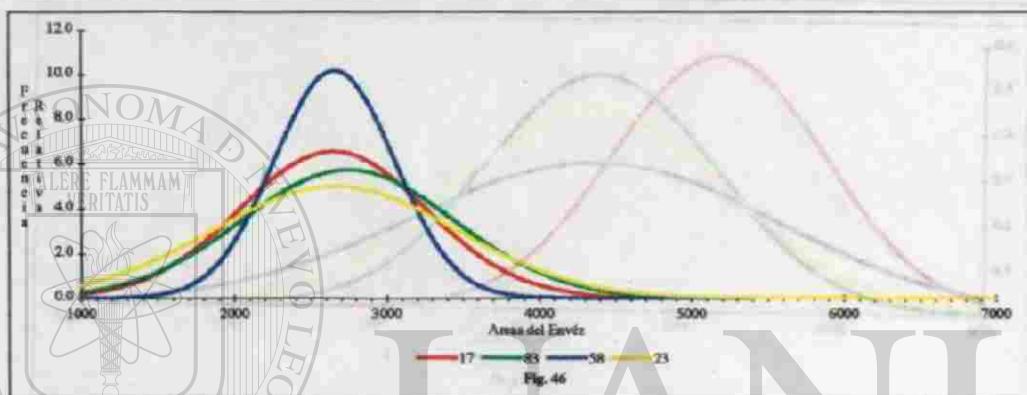
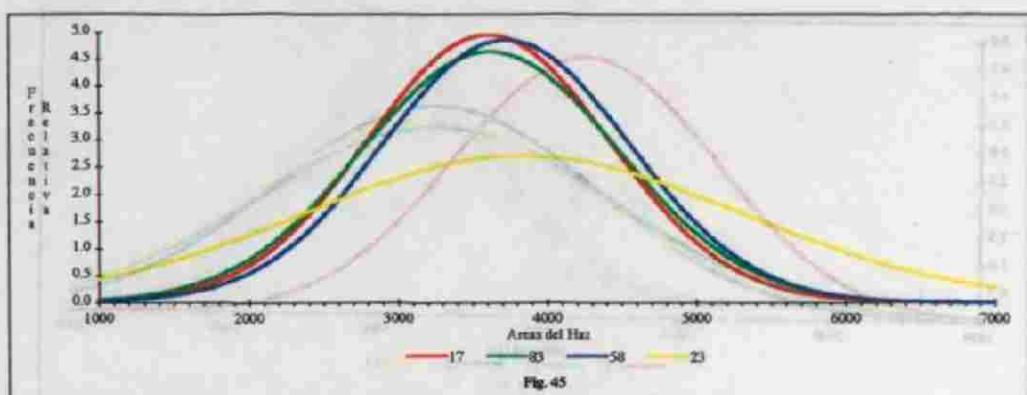
Figuras 37-40. Curvas de Gauss: C02, C45, C01 S. sucesiva y C69 S. radiois.



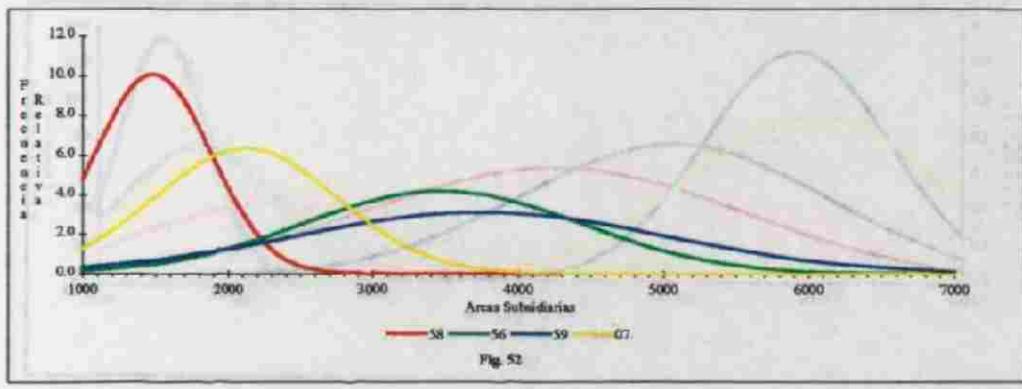
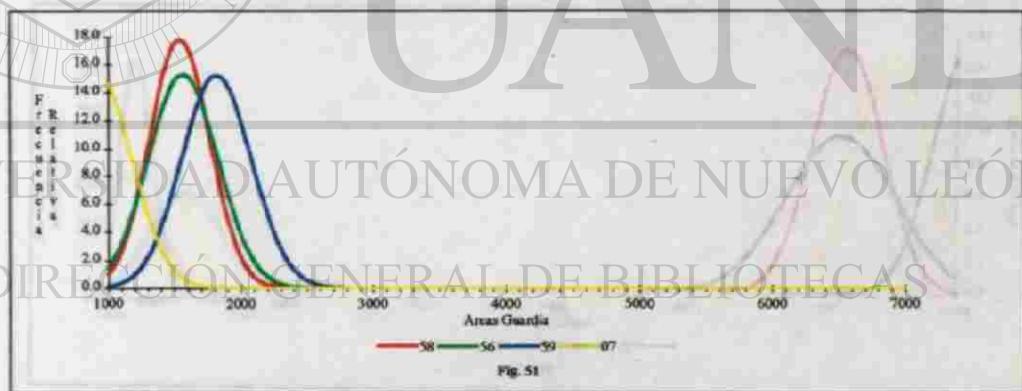
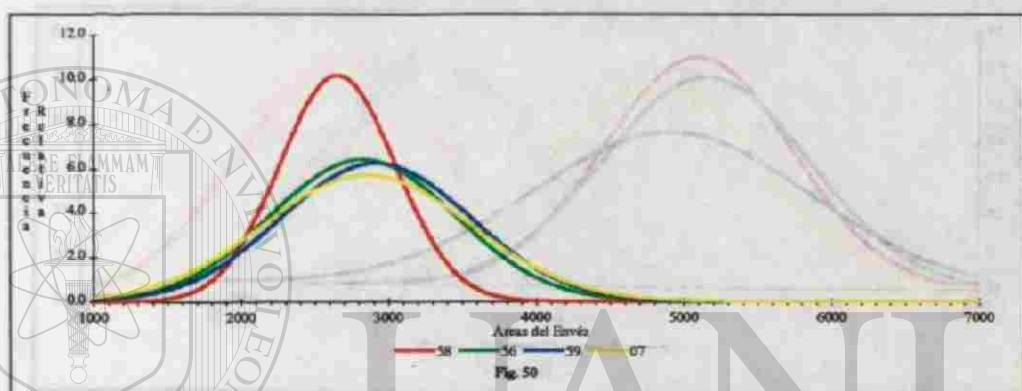
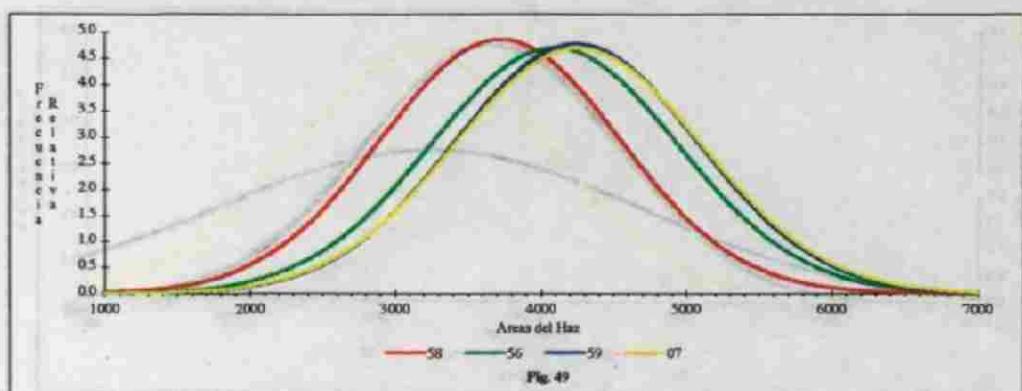
Figuras 41-44. Curvas de Gauss. C83 S. sp. ign. 'amoena' y C13, C12, C14 S. wardii.



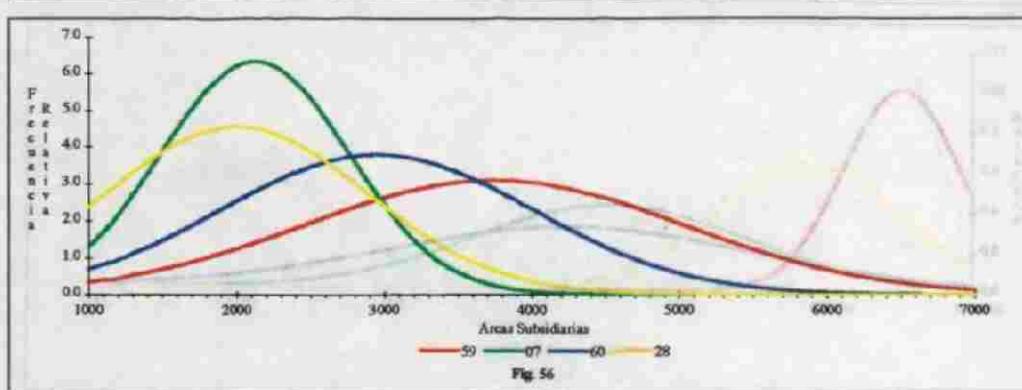
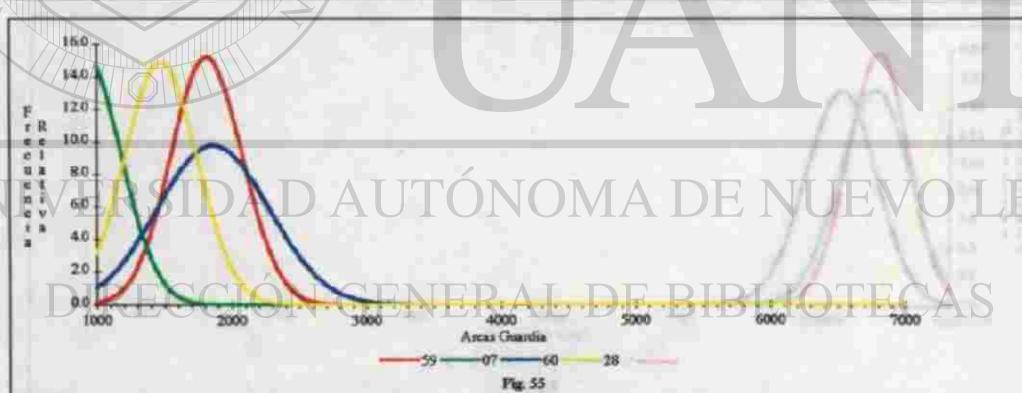
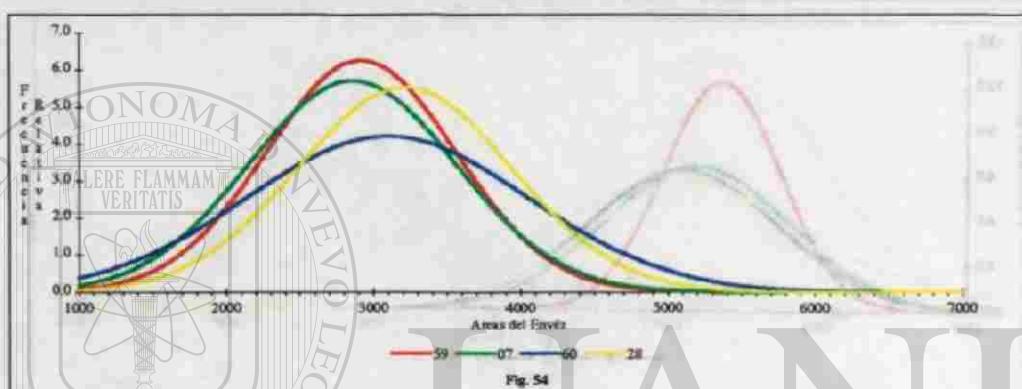
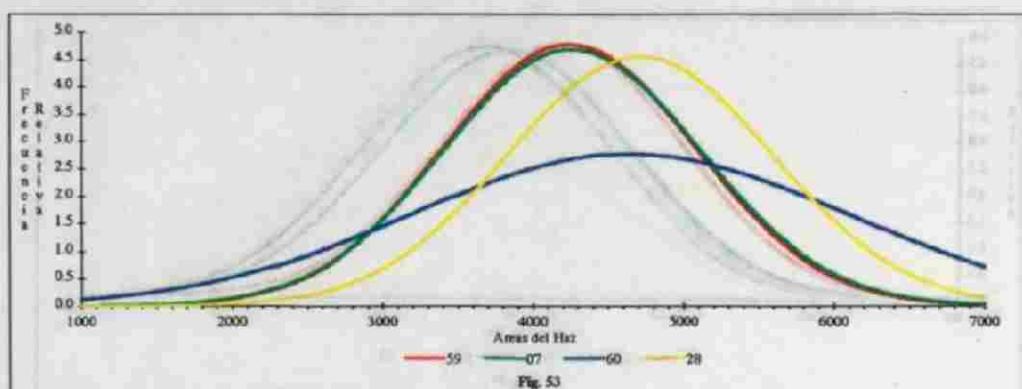
Figuras 45-48. Curvas de Gauss. C17 *S. costaricensis*; C83 *S. amoena*; C58 *S. panamensis*; C23 *S. ecomata*.



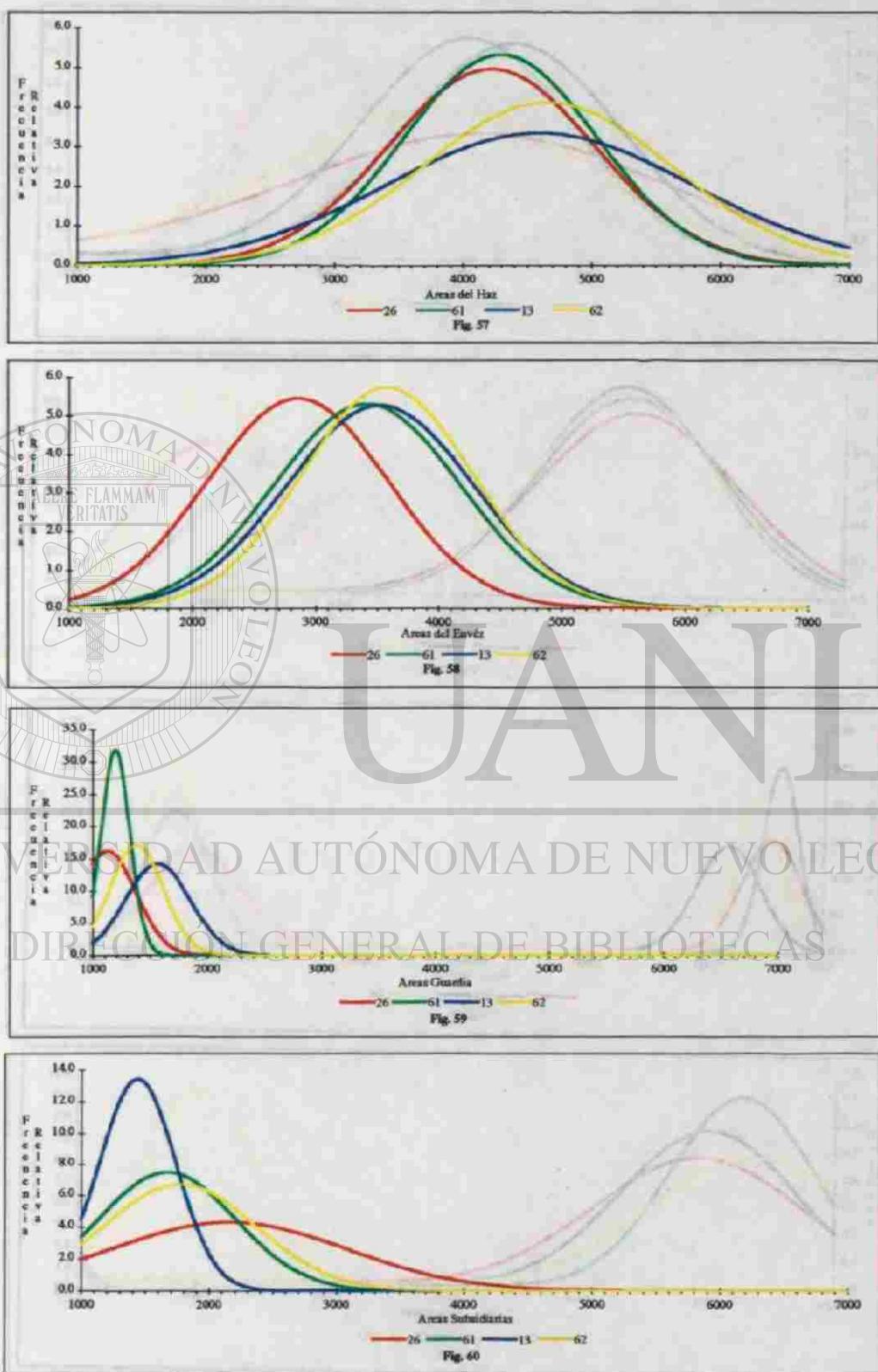
Figuras 49-52. Curvas de Gauss: CS8 S. panamensis , CS6 S. Choc. Chipe 'Lindt' y CS9, C07 S. tigrina.



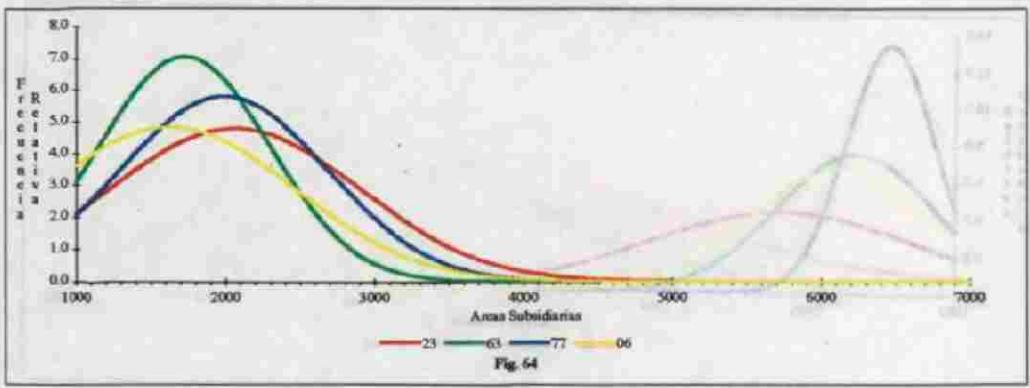
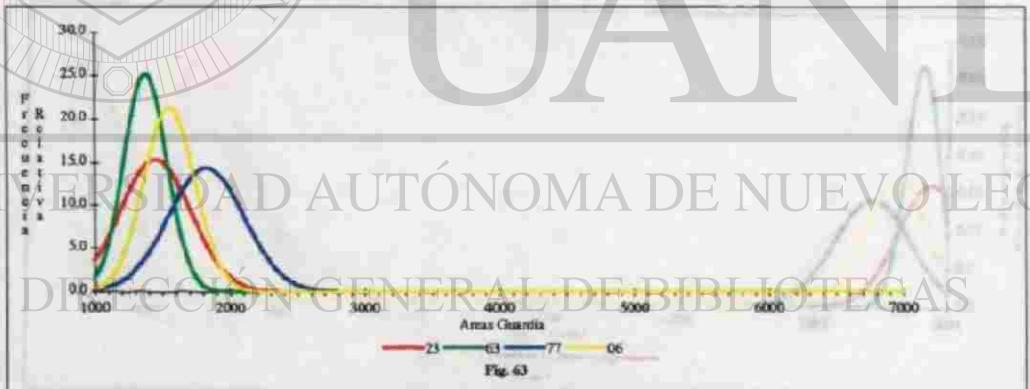
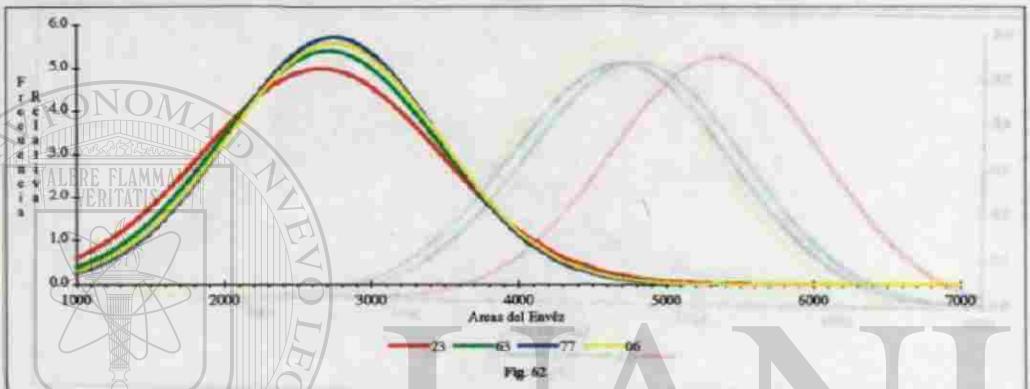
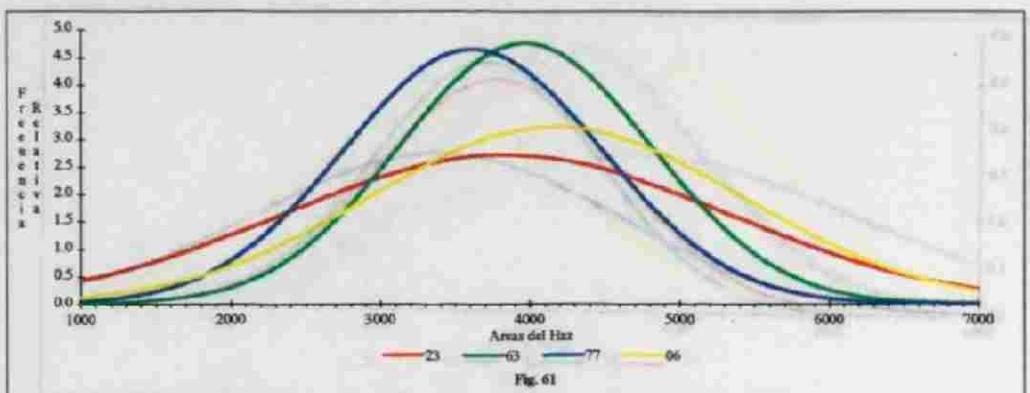
Figuras 53-56. Curvas de Gauss. C59, C07 S. tigrina , C60 S. Love Potion 'No.9' y C28 S. cornuta.



Figuras 57-60. Curvas de Gauss: C26 *S. tigrinus*, CS1 *S. Asiedensis*, y C13, C62 *S. wardii*.



Figuras 61-64. Curvas de Gauss. Ejemplares C23 S. ecornuta, O63 S. Penelope, y C77, C06 S. esculata



Figuras 65-68. Curvas de Gauss. C35 *G. atriculata*, C38 *M. corymbosa*, y C37, C86 *G. superba*.

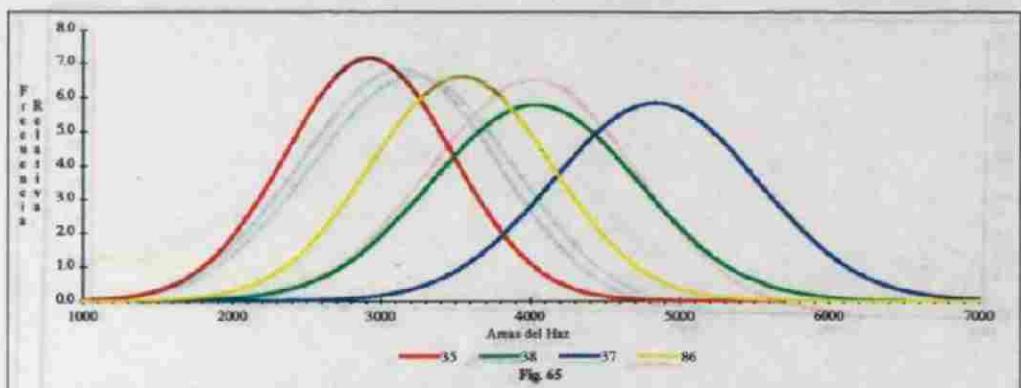


Fig. 65

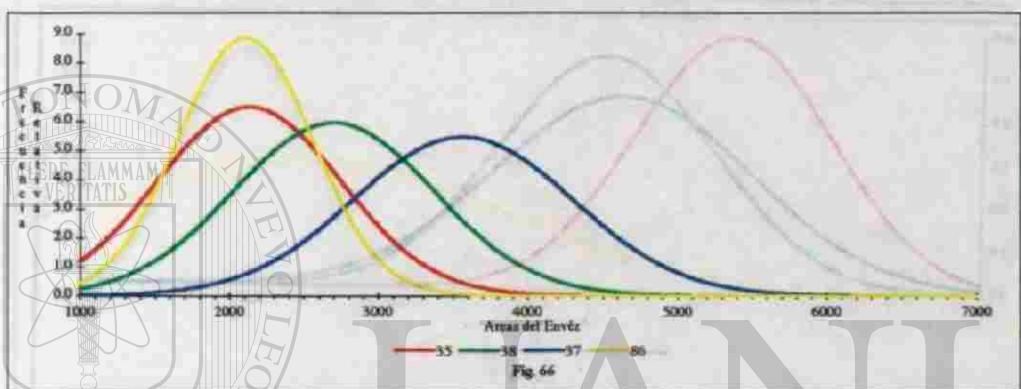


Fig. 66

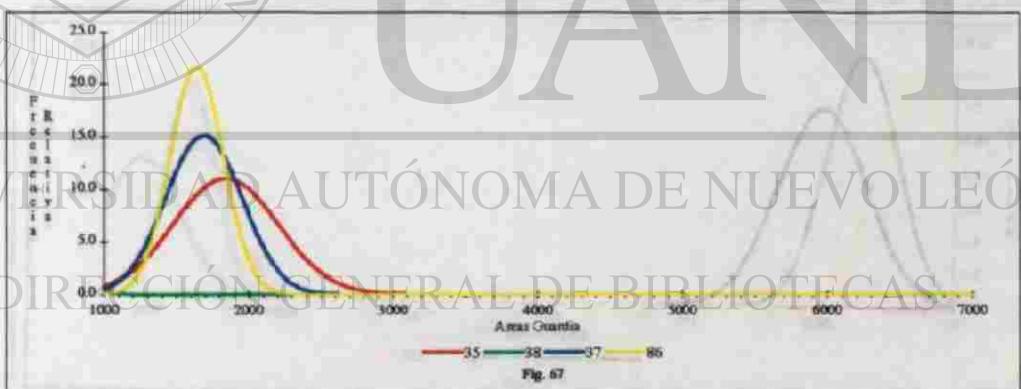


Fig. 67

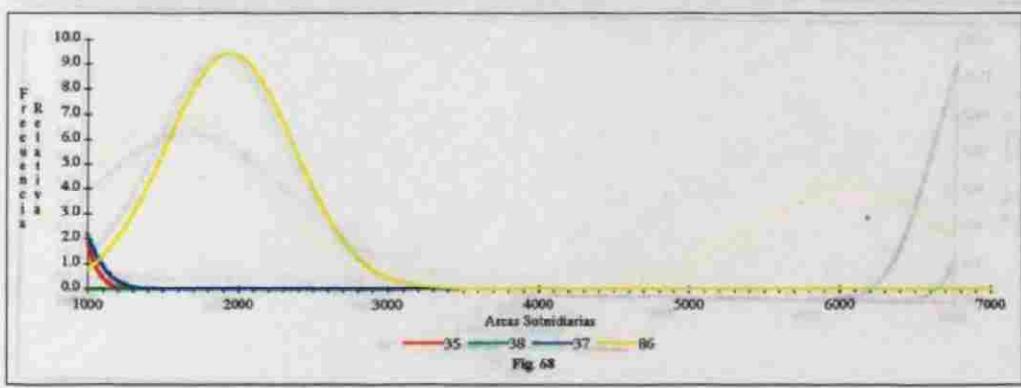
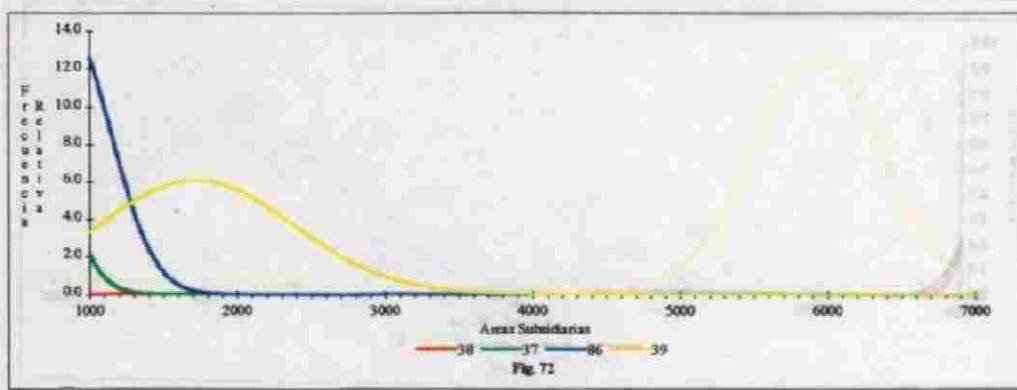
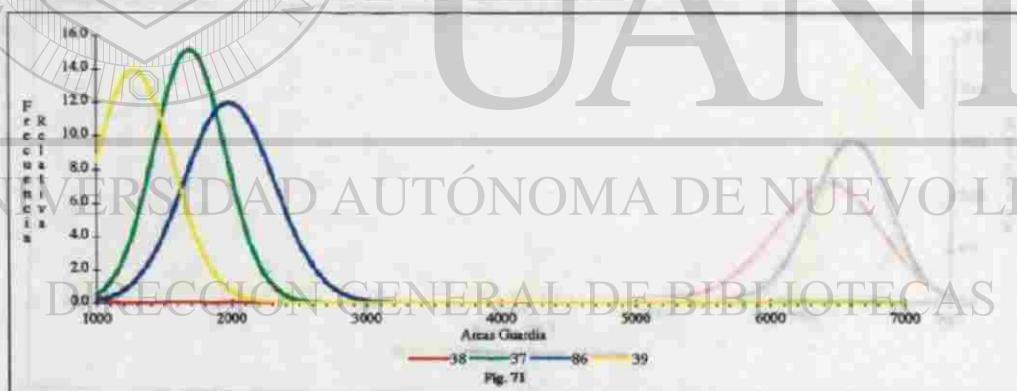
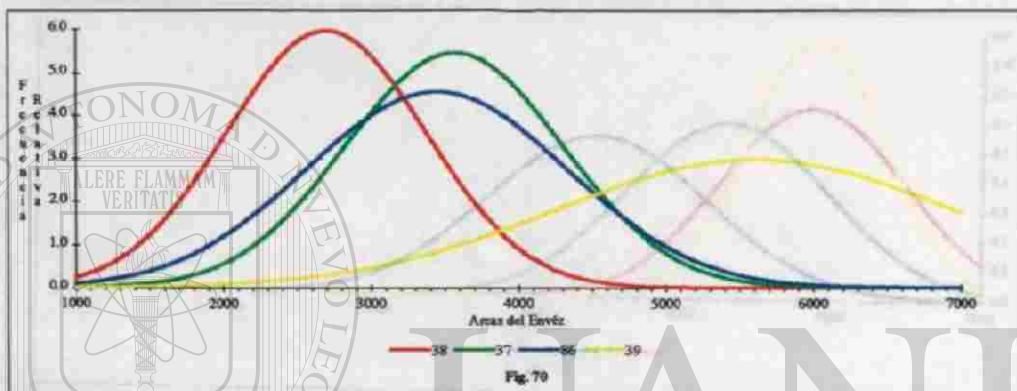
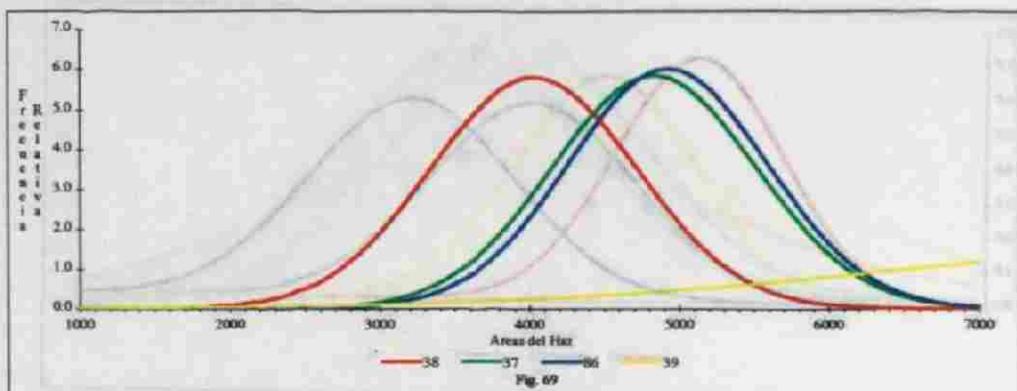
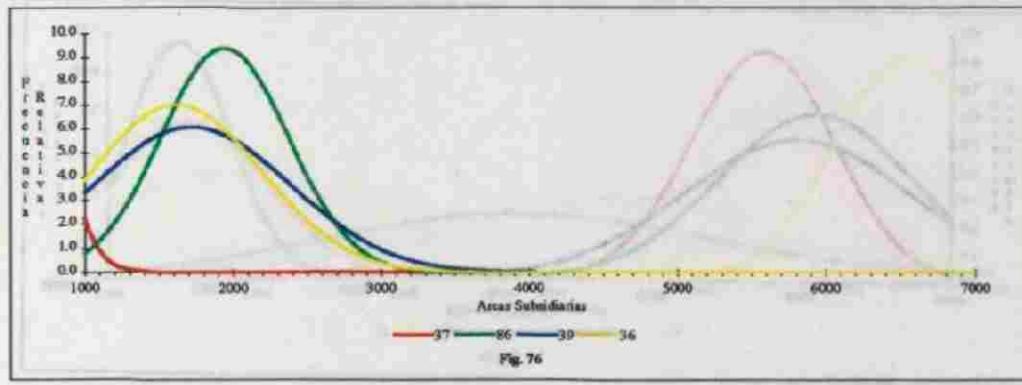
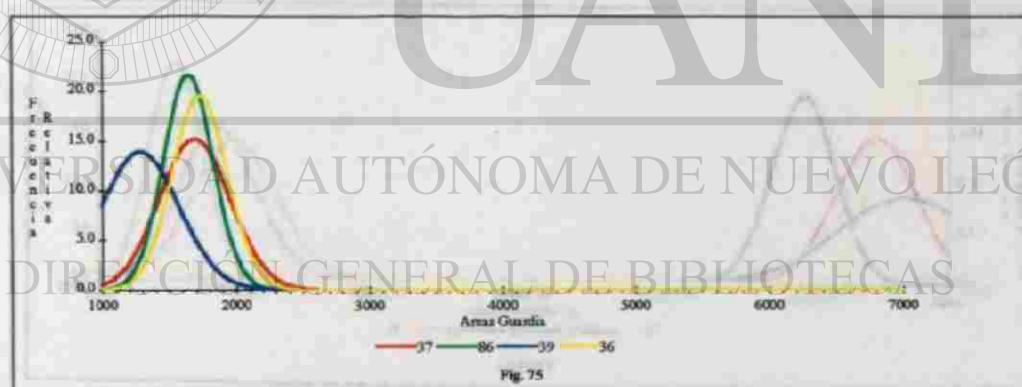
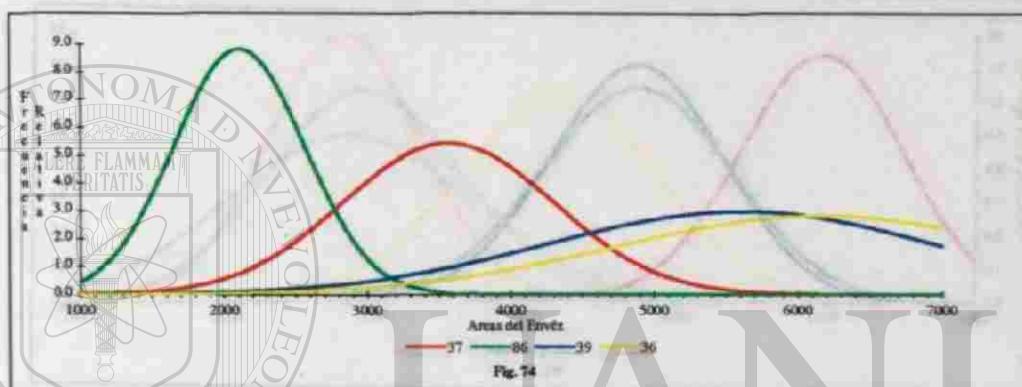
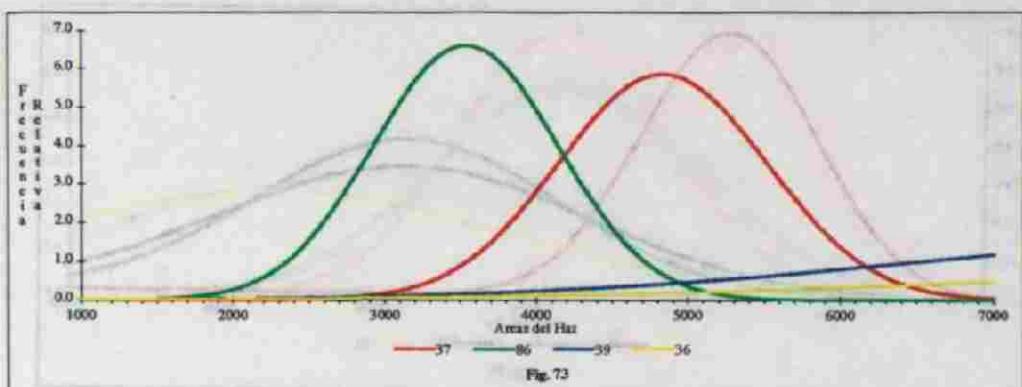


Fig. 68

Figuras 69-72. Curvas de Gauss. C38 *M. corymbosa*, C37, C86 *G. superba*, y C39 *Spiranthes sp. ign.*



Figuras 73-76: Curvas de Gauss: C37 *G. utriculata*, C86 *G. superba*, y C39, C36 *Spiranthes spp.* ign.



Figuras 77-80. Curvas de Gauss: C51 *S. intermedia*, C03, C16 *S. insignis*, y C21 *S. reichenbachiana*.

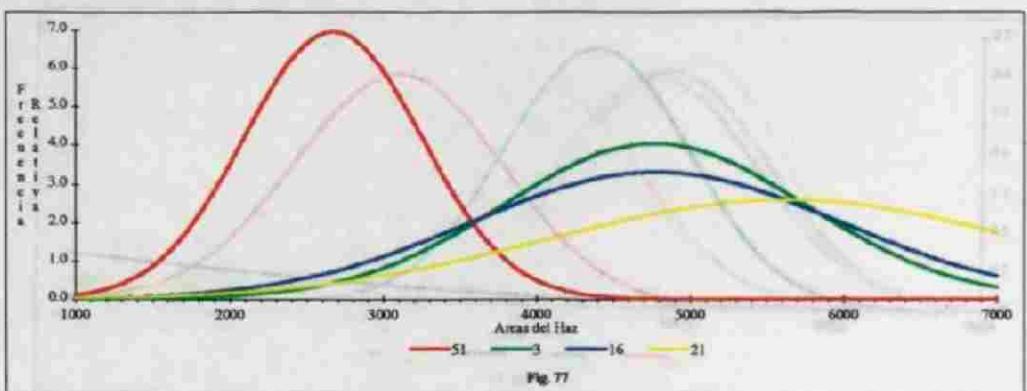


Fig. 77

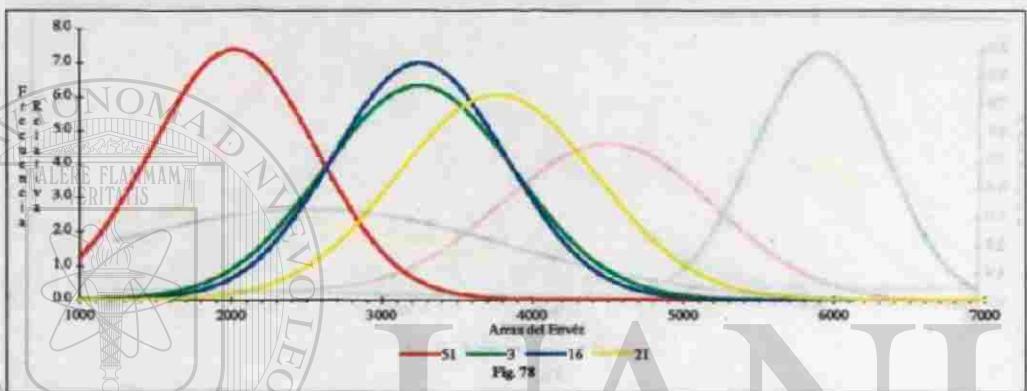


Fig. 78

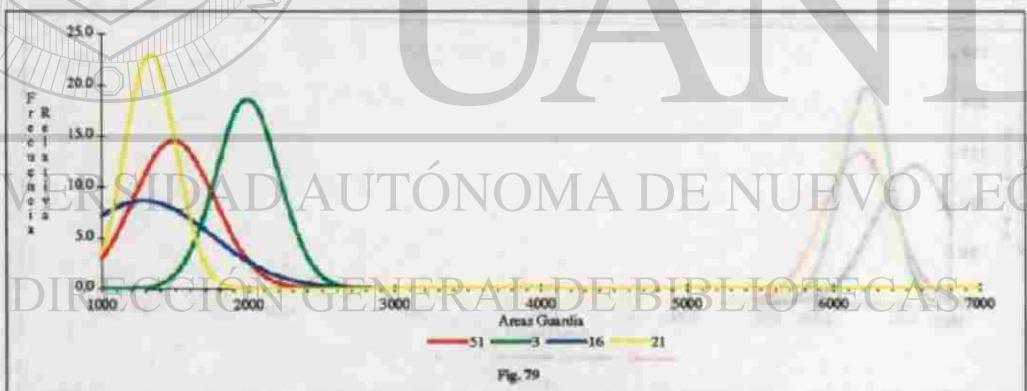


Fig. 79

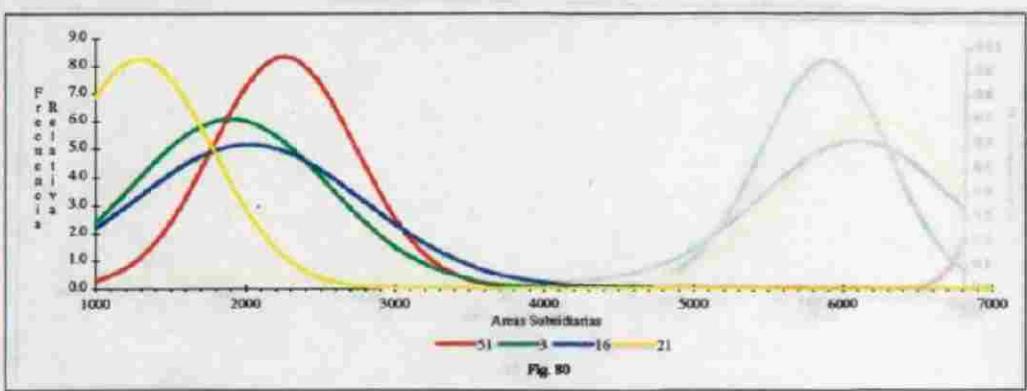
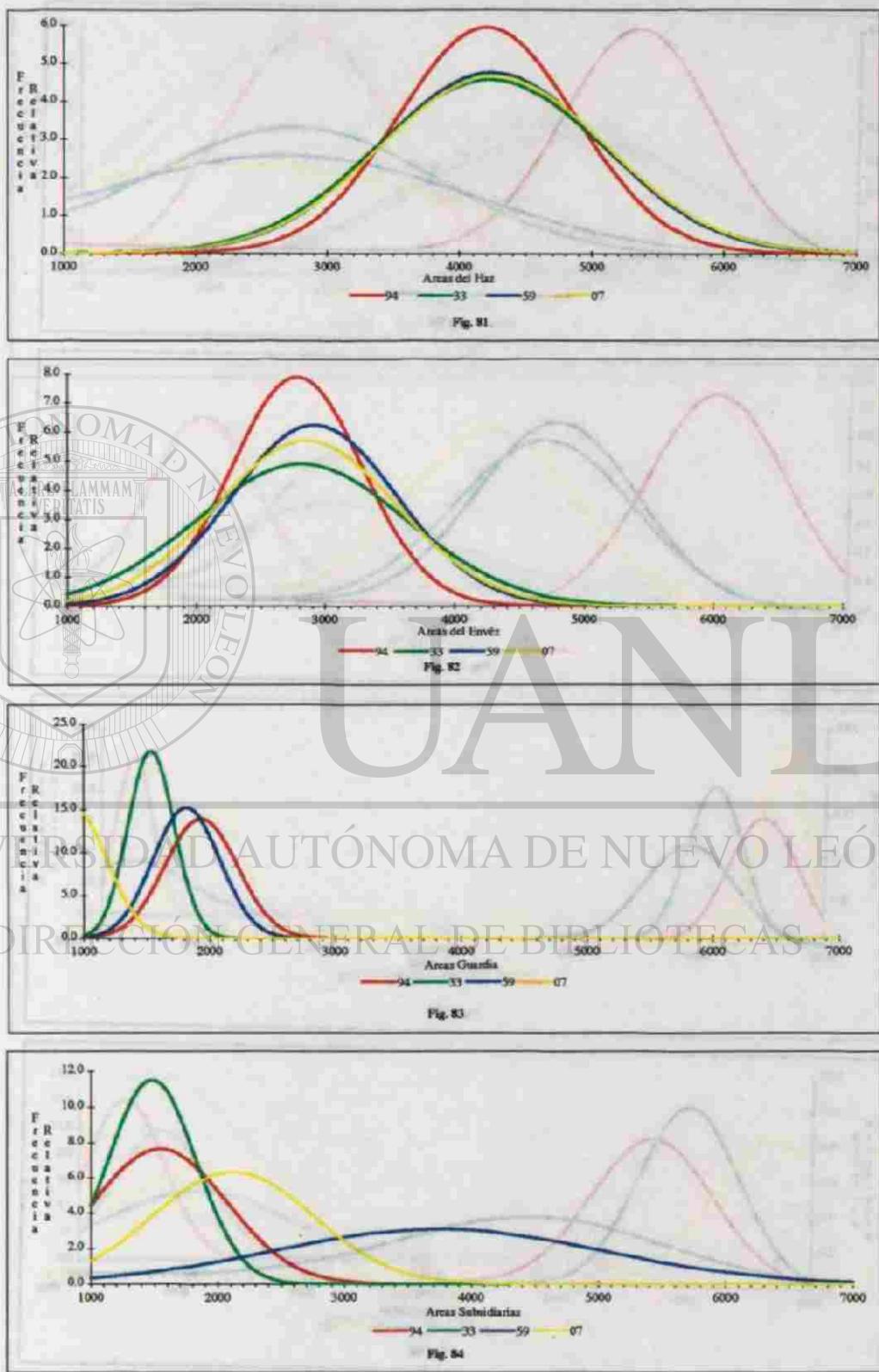


Fig. 80

Figs. 81-84. C94 *S. tigrina*, C33 ERU y C33, C59, C07 *S. tigrina*.



Figs. 85-88. CSI. *S. intermedia*, C31. *C. platyceras*, y C21. *S. reichenbachiana*.

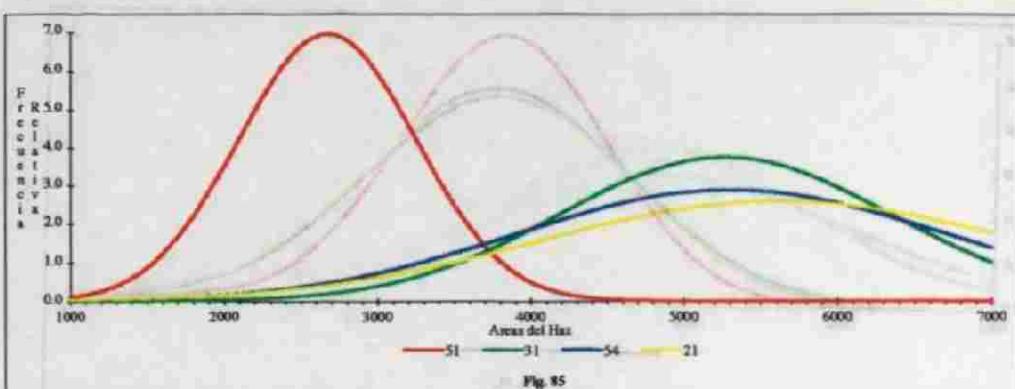


Fig. 85

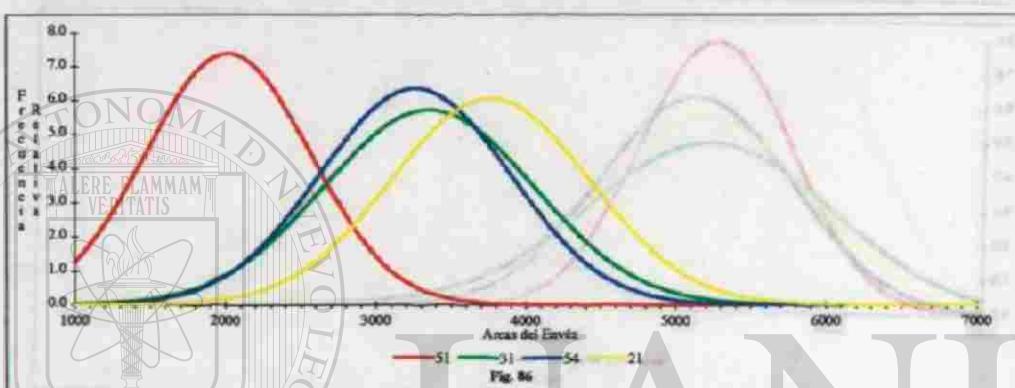


Fig. 86

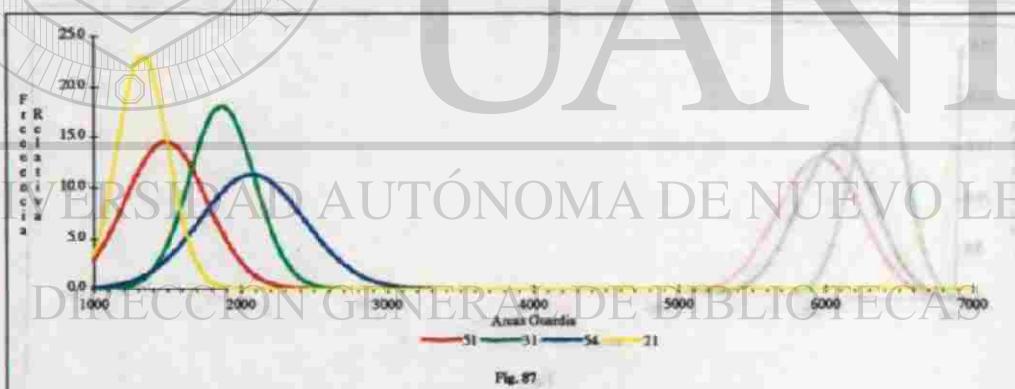


Fig. 87

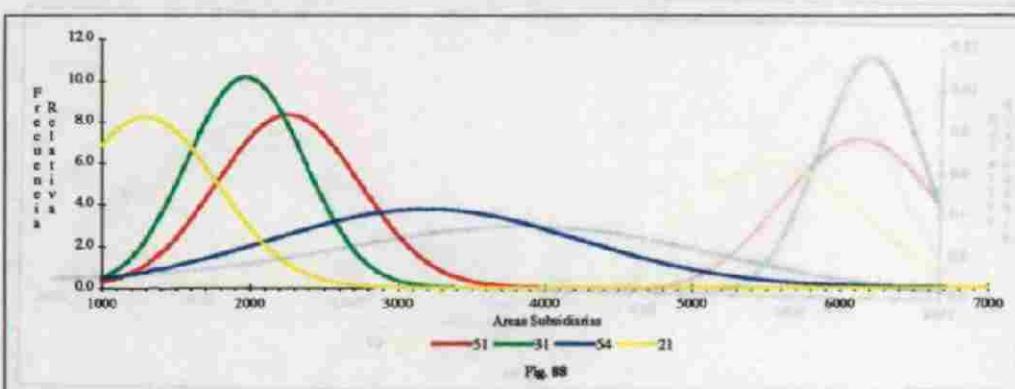
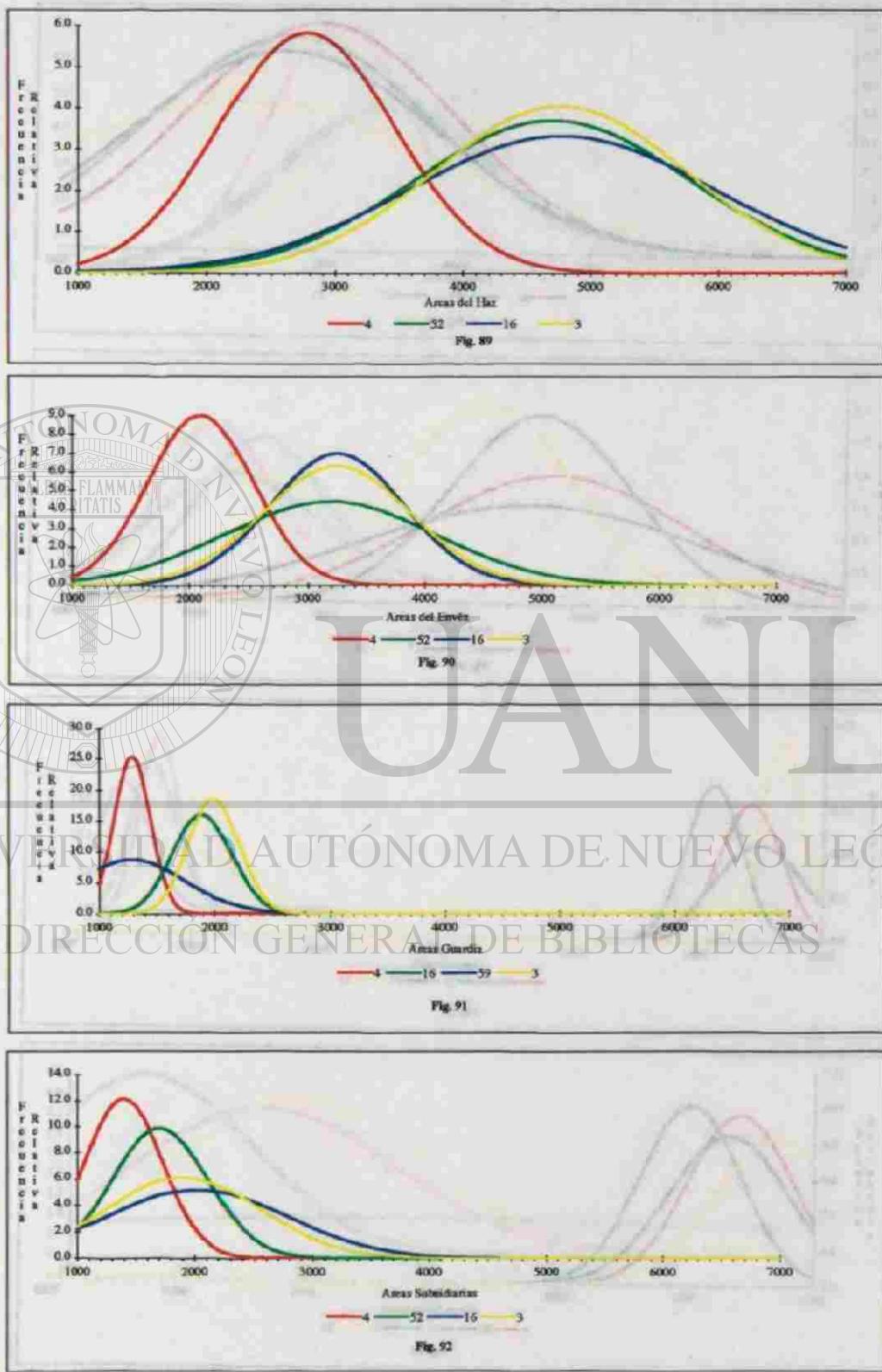


Fig. 88

Figs. 89-92. C04 *S. hernandezii*, CS2 *S. coerulea*, y C16 C03 *S. insignis*.



Figs. 93-96. C50 S. pullo, C31 S. platycera, C47 S. embreei, y C21 S. reichenbachiana.

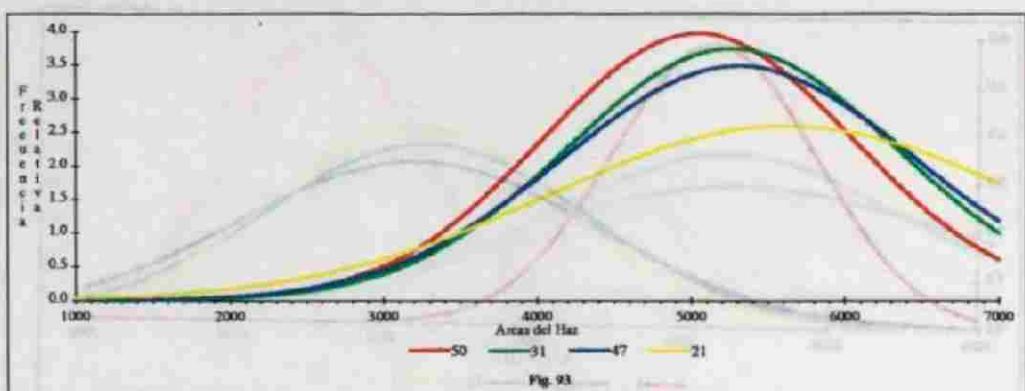


Fig. 93

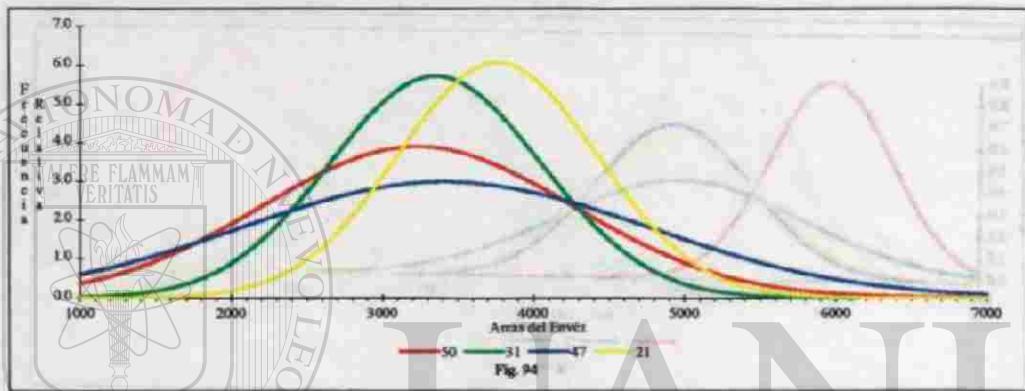


Fig. 94

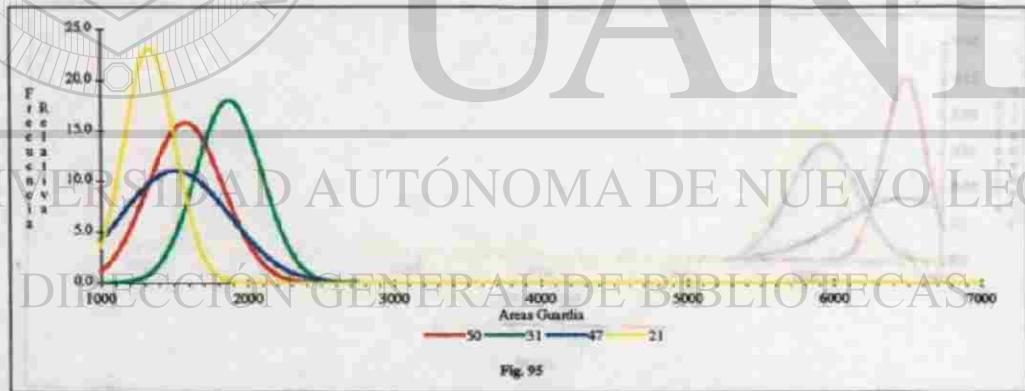


Fig. 95

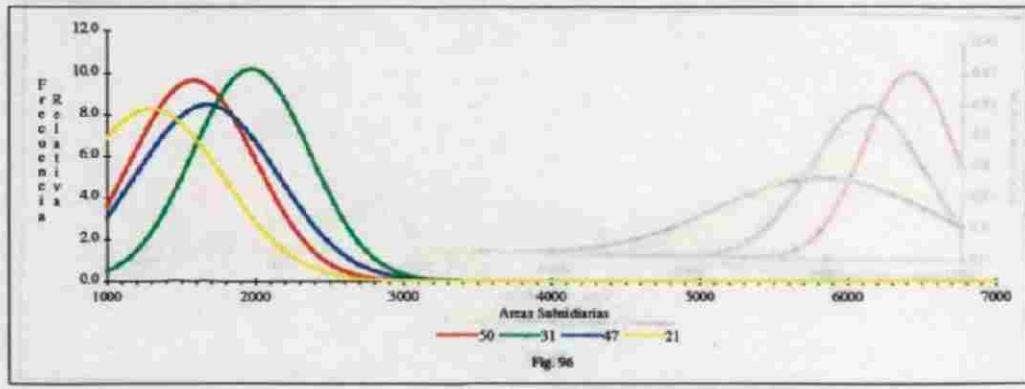
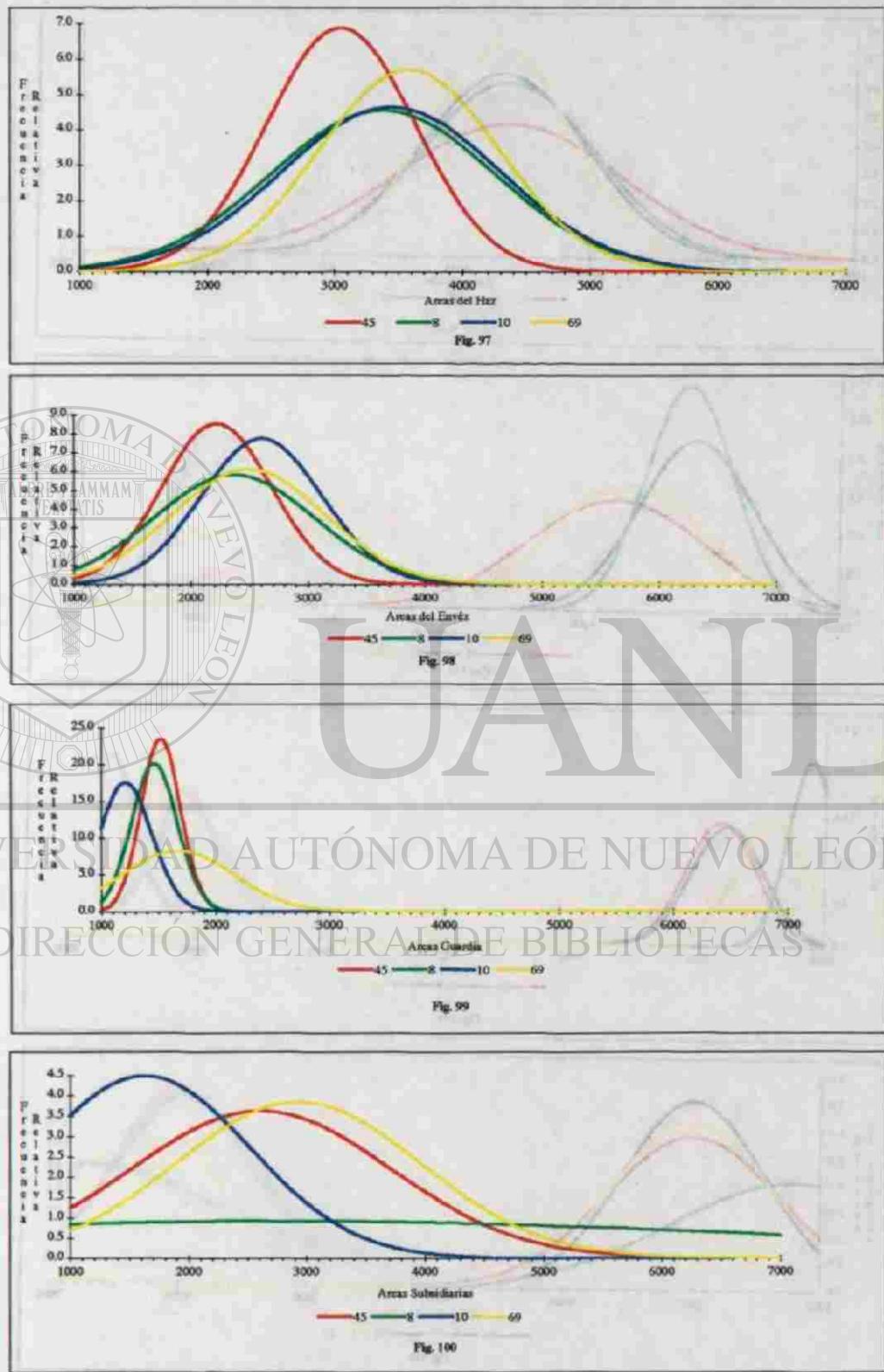
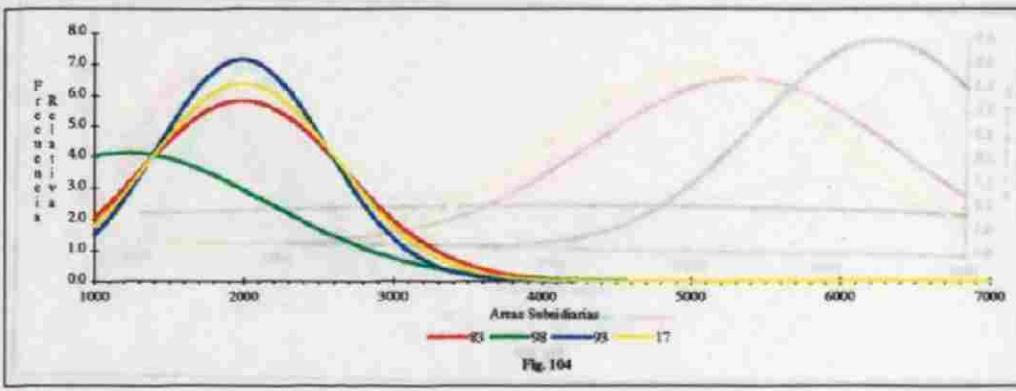
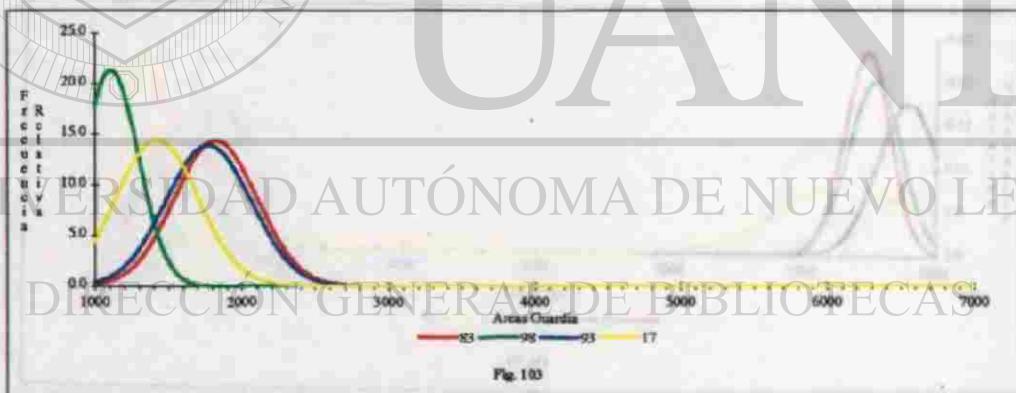
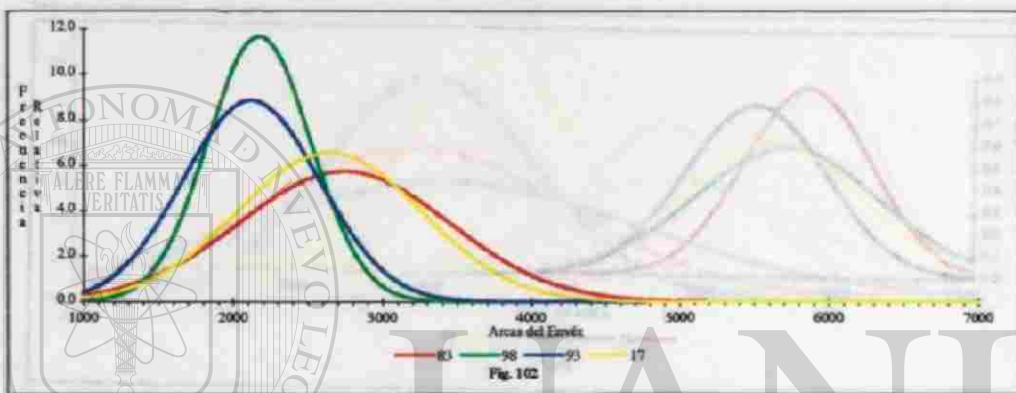
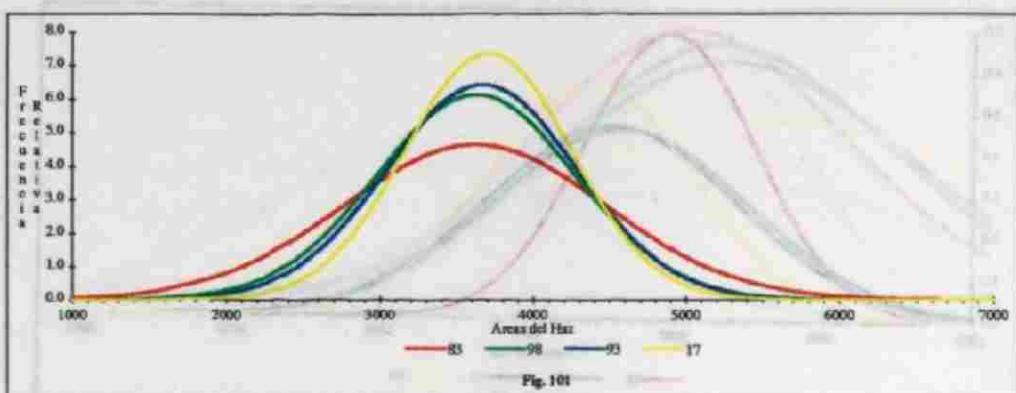


Fig. 96

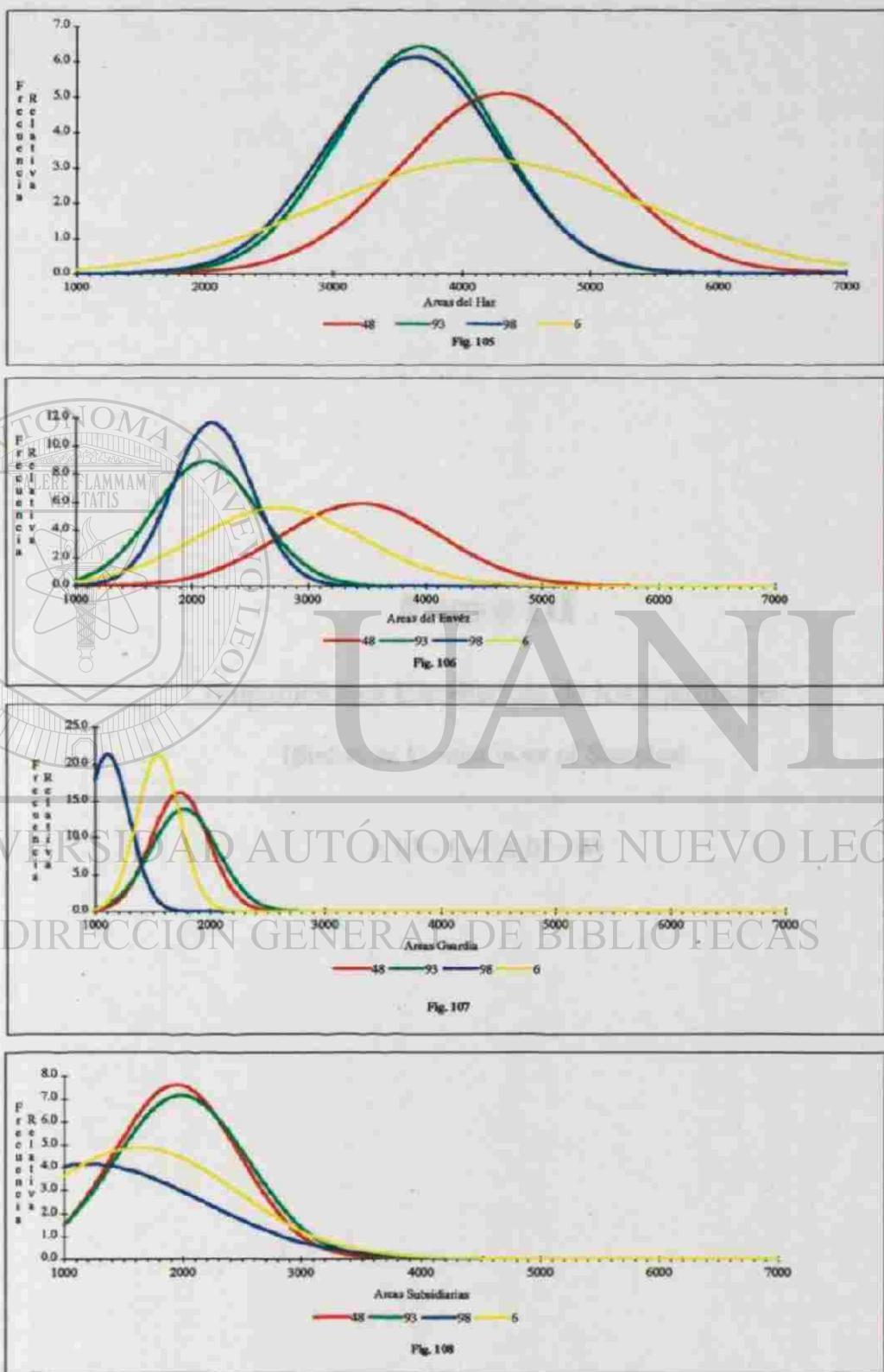
Figs. 97-100. C45. *S. saccata*, C08. *S. graveolens*, C10. *S. martiana*, C69. *S. radiosa*.

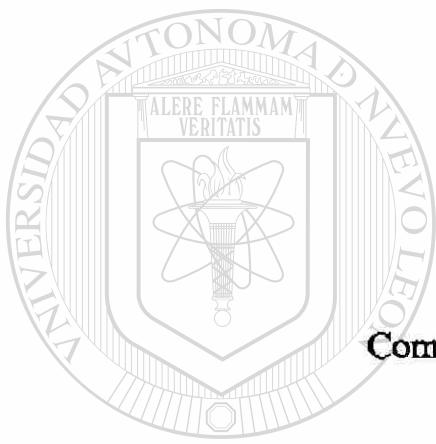


Figs. 101-104: C83 S. amoena, C98 S. 'Huatusco II,' C93 S. 'Huatusco,' y C17 S. costaricensis.



Figs. 105-108. C48 S. *inodora*, C93 S. 'Huatusco,' C98 S. 'Huatusco II,' y CD6 S. *oculata*.





Anexo III

Comparaciones Estadísticas de los Ejemplares

(Statistical Comparisons of Samples)

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A III - 1 — A III - 44

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DIRECCIÓN GENERAL DE BIBLIOTECAS

Comparisons									
Comparisons: Adaxial Epidermal Cell Area									
Number of observations in data set = 1524									
Analysis of Variance Procedure									
Dependent Variable: <i>Adaxial Epidermal Cell Area</i>									
N = 61 C# 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18									
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 45 46 47									
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 66									
67 69 77 83 88 93 94									
Source DF Sum of Squares Mean Square									
Model 60 819833093.500400013663884.89167330									
F Value Pr>F									
14.81 0.0001									
Error 1463 1349964992.22073000 922737.52031493									
Corr. Total 1523 2159798085.72113000									
R-Square C.V. Root MSE AREA Mean									
0.377838 23.08410 960.59227579 4161.27268373									
Source DF Anova SS Mean Square									
SPECIES 60 819833093.500400013663884.89167330									
F Value Pr>F									
14.81 0.0001									
Analysis of Variance Procedure									
T test (LSD) for variable: <i>Adaxial Epidermal Cell Area</i>									
NOTS: This test controls the type I comparisonwise error rate not the experimentwide error rate.									
Alpha= 0.05 Confidence= 0.95 df= 1463									
MSE= 922737.5 Critical Value of T= 1.96159									
Comparisons significant at 0.05 level are indicated by ***.									
Comparisons: Adaxial Cells:									
Lower Dif. Upper									
C#	Confid.	Base	Confid.	Compar. Limit	Means	Limit			
21 - 46	-403.5	129.4	662.4						
21 - 47	-220.5	312.5	845.4						
21 - 54	-213.8	319.1	832.1						
21 - 31	-175.3	357.7	909.6						
21 - 50	45.4	578.4	1111.4						
21 - 18	199.6	732.6	1265.6						
21 - 27	234.1	767.1	1300.0						
21 - 67	249.9	782.8	1315.8						
21 - 23	274.2	807.1	1340.1						
21 - 16	310.1	843.1	1376.1						
21 - 3	320.8	853.8	1386.7						
21 - 35	349.1	882.0	1415.0						
21 - 57	365.7	898.7	1431.6						
21 - 28	377.7	910.7	1443.6						
21 - 52	383.6	916.6	1449.5						
21 - 14	430.7	963.7	1496.6						
21 - 62	433.6	966.5	1499.5						
21 - 60	450.1	983.1	1516.0						
21 - 12	487.6	1020.6	1553.5						
21 - 13	495.8	1028.7	1561.7						
21 - 20	558.4	1091.3	1624.3						
21 - 22	592.7	1125.7	1638.6						
21 - 66	618.3	1151.2	1684.2						
21 - 19	713.6	1246.5	1779.5						
21 - 29	722.4	1255.3	1788.3						
21 - 32	754.4	1287.3	1820.3						
21 - 48	772.8	1305.8	1838.8						
21 - 30	783.2	1310.2	1849.1						
21 - 61	799.6	1352.5	1865.5						
21 - 7	831.6	1354.6	1897.5						
21 - 59	845.6	1378.6	1911.5						
21 - 33	857.2	1390.1	1923.1						
21 - 26	870.3	1403.3	1936.2						
21 - 29	874.8	1407.7	1940.7						
21 - 94	882.0	1414.9	1947.9						
21 - 6	917.2	1450.2	1983.1						
21 - 77	935.4	1486.4	2019.3						
21 - 5	967.5	1500.5	2033.4						
21 - 56	995.6	1528.6	2061.5						
21 - 63	1121.7	1654.7	2187.7						
21 - 23	1233.7	1786.6	2319.6						
21 - 38	1366.3	1899.2	2432.2						
21 - 93	1383.9	1916.9	2449.8						
21 - 17	1385.4	1918.4	2451.3						
21 - 83	1473.4	2006.4	2539.3						
21 - 69	1505.0	2038.0	2570.9						
21 - 88	1554.8	2087.8	2620.7						
21 - 10	1646.9	2179.8	2712.8						
21 - 64	1674.0	2206.9	2739.9						
21 - 8	1710.3	2243.3	2776.2						
21 - 1002.1	2335.1	2868.0	3300.0						
21 - 15	1961.5	2494.4	3027.4						
21 - 1	2011.0	2549.4	3087.9						
21 - 45	2039.2	2572.2	3105.1						
21 - 2	2049.0	2582.8	3115.7						
21 - 53	2225.5	2758.5	3291.4						
21 - 49	2273.6	2806.5	3339.5						
21 - 4	2307.9	2840.9	3373.8						
21 - 11	2399.4	2932.4	3463.5						
21 - 51	2417.1	2950.0	3483.0						
46 - 21	-662.4	-129.4	403.5						
46 - 47	-349.9	183.1	716.0						
46 - 54	-343.3	189.7	722.6						
46 - 31	-304.7	228.2	761.2						
46 - 50	-84.0	449.0	981.9						
46 - 18	70.2	603.2	1136.1						
46 - 27	104.7	637.6	1170.6						
46 - 67	120.5	633.4	1186.4						
46 - 25	144.8	677.7	1210.7						
46 - 16	180.7	713.7	1246.6						
46 - 3	191.4	724.3	1257.3						
46 - 55	219.6	752.6	1285.6						
46 - 37	236.3	769.2	1302.2						
46 - 28	248.3	781.3	1314.2						
46 - 52	254.2	787.2	1320.1						
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46 - 21	-852.1	-319.1	213.8						
46 - 48	-722.6	-189.7	343.3						
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46 - 64	1361.5	1894.5	2427.4						
46 - 8	1397.8	1938.0	2463.7						
46 - 9	1489.6	2022.6	2555.3						
46 - 15	1649.0	1819.1	2714.9						
46 - 2	1737.3	2703.3	2803.3						
46 - 33	1913.0	2446.0	2978.9						
46 - 45	1726.7	2259.7	2792.6						
46 - 2	1737.3	2703.3	2803.3						
46 - 53	1913.0	2446.0	2978.9						
46 - 49	1961.1	2494.0	3027.0						
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46 - 51	2104.6	2637.3	3170.7						
54 - 16	-9.0	524.0	1056.9						
54 - 3	1.7	534.7	1057.6						
54 - 55	29.9	562.9	1059.5						
54 - 57	46.6	579.6	1112.5						
54 - 28	58.6	591.5	1124.5						
54 - 52	64.5	597.5	1130.4						
54 - 60	131.0	663.9	1196.9						
54 - 12	168.5	701.5	1234.4						
54 - 13	176.6	709.5	1242.5						
54 - 20	239.3	772.2	1305.2						
54 - 22	273.6	806.5	1339.5						
54 - 65	299.2	832.1	1365.1						
54 - 19	334.4	927.4	1460.4						
54 - 32	435.3	968.7	1501.2						
54 - 48	453.7	986.7	1519.6						
54 - 30	464.1	997.1	1530.0						
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54 - 7	512.5	1045.5	1578.4						
54 - 59	526.5	1059.5	1592.4						
54 - 33	538.1	1071.0	1604.0						
54 - 26	551.2	1084.1	1617.1						
54 - 29	555.6	1088.6	1621.6						
54 - 58	567.1	1098.1	1628.0						
54 - 17	578.1	1107.4	1637.7						
54 - 54	571.								

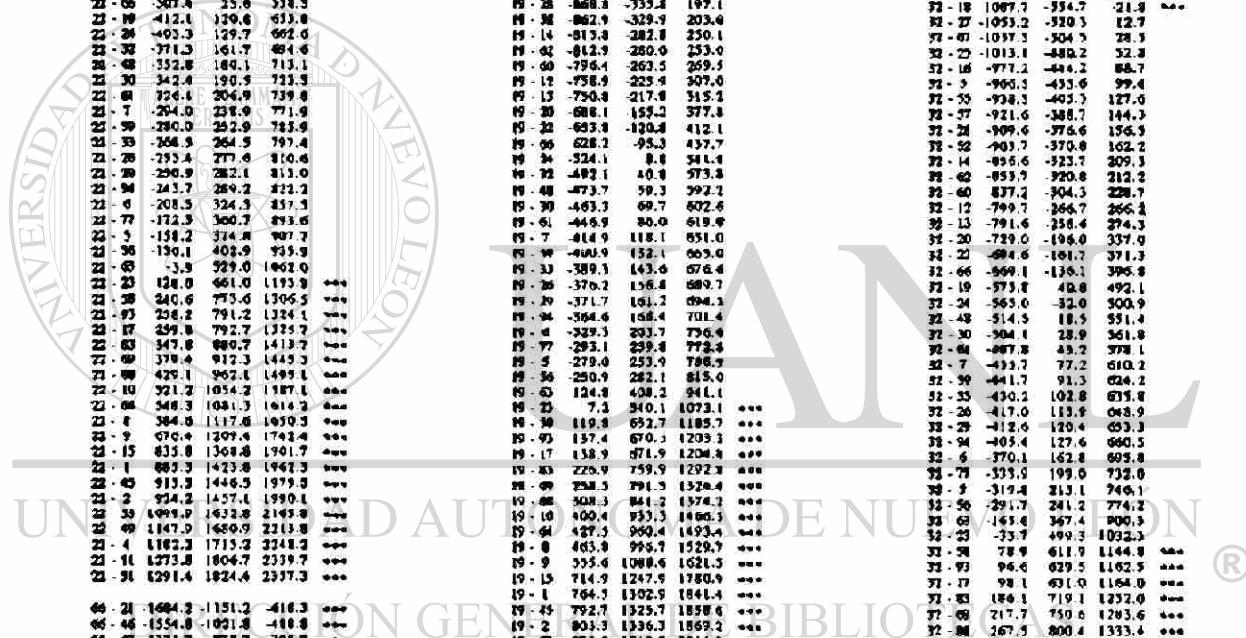
Comisiones Admisiones		Comisiones											
30 - 21 - 1111.4	-737.4	43.8	***	10 - 1	1278.4	1616.9	2335.3	***	07 - 43	499.6	1213.9	1730.3	***
30 - 40 - 781.9	-449.0	84.0		10 - 47	1306.6	1639.6	2372.3	***	07 - 69	723.2	1233.1	1788.1	***
30 - 47 - 731.9	-265.9	207.0		10 - 2	1317.2	1630.2	2363.3	***	07 - 28	712.0	1094.9	1837.9	***
30 - 54 - 792.2	-239.3	213.7		10 - 3	1492.9	2025.9	2558.8	***	07 - 16	866.0	1397.0	1930.0	***
30 - 31 - 733.7	-120.7	312.1		10 - 44	1341.0	2073.9	2606.5	***	07 - 64	891.1	1424.1	1937.1	***
30 - 18 - 771.8	-154.2	687.1		10 - 4	1375.3	2106.3	2641.1	***	07 - 8	127.3	1466.4	1935.4	***
30 - 27 - 344.3	181.7	721.6		10 - 11	1566.8	2192.8	2752.7	***	07 - 9	1018.3	1312.3	2045.2	***
30 - 47 - 323.5	204.4	737.4		10 - 21	1584.3	2217.4	2750.4	***	07 - 13	1178.6	1711.6	2244.3	***
30 - 25 - 304.2	228.0	766.7		27 - 21	1300.0	-767.1	-234.1	***	07 - 1	1224.1	1766.6	2303.1	***
30 - 16 - 284.3	264.7	797.7		27 - 46	1170.6	-637.6	-104.7	***	07 - 53	1256.4	1789.3	2323.3	***
30 - 3 - 237.6	275.4	800.3		27 - 47	987.3	-484.6	78.4		07 - 2	1267.0	1800.0	2332.9	***
30 - 55 - 229.3	503.6	838.6		27 - 51	980.9	-447.9	85.0		07 - 53	1442.7	1975.6	2308.6	***
30 - 37 - 212.7	523.1	833.1		27 - 31	947.4	-409.4	123.6		07 - 49	1490.7	2023.7	2556.6	***
30 - 28 - 200.1	532.1	865.3		27 - 50	771.6	-198.7	344.3		07 - 4	1525.1	2058.0	2591.0	***
30 - 32 - 191.8	538.2	871.1		27 - 15	507.4	-34.3	498.3		07 - 11	1616.6	2149.6	2682.0	***
30 - 14 - 147.7	545.3	918.2		27 - 67	517.1	15.3	548.7		07 - 31	1634.2	2167.2	2700.1	***
30 - 62 - 164.8	586.1	921.1		27 - 25	497.9	48.1	579.9		28 - 24 - 1340.1	-897.1	-374.2	***	***
30 - 60 - 128.3	404.7	537.6		27 - 16	496.9	76.0	579.0		28 - 44 - 210.7	-677.1	-184.8	***	***
30 - 12 - 90.8	442.1	973.1		27 - 3	644.3	85.7	619.7		28 - 47 - 1027.6	-494.7	38.3		***
30 - 13 - 82.6	450.3	983.3		27 - 35	618.0	115.0	647.9		28 - 34 - 1921.0	-488.0	44.9		***
30 - 26 - 80.0	512.3	1045.9		27 - 37	401.3	131.6	504.6		28 - 31 - 582.4	-449.3	83.3		***
30 - 22 - 14.3	547.3	1080.1	***	27 - 20	389.3	143.6	476.6		28 - 50 - 761.7	-228.8	304.2		***
30 - 66 - 39.9	573.2	1105.8	***	27 - 52	581.4	147.3	582.1		28 - 18 - 607.3	-74.6	458.4		***
30 - 19 - 135.2	666.1	1201.1	***	27 - 1	536.4	186.6	724.9		28 - 27 - 375.0	-40.1	492.0		***
30 - 34 - 144.0	676.9	1209.9	***	27 - 65	533.3	193.3	732.4		28 - 67 - 357.3	-34.3	508.6		***
30 - 32 - 176.0	704.9	1241.9	***	27 - 60	517.9	216.0	749.9		28 - 16 - 497.0	36.0	508.9		***
30 - 48 - 194.4	727.4	1260.4	***	27 - 11	279.4	233.5	766.3		28 - 1 - 486.3	48.6	579.4		***
30 - 30 - 204.8	737.8	1270.3	***	27 - 43	271.3	281.6	764.6		28 - 55 - 438.1	74.9	807.8		***
30 - 61 - 221.2	754.1	1287.1	***	27 - 20	208.7	324.3	357.3		28 - 57 - 441.4	91.3	624.5		***
30 - 7 - 239.2	782.2	1319.1	***	27 - 25	174.4	358.6	591.4		28 - 28 - 429.4	103.5	610.5		***
30 - 39 - 207.2	800.2	1333.1	***	27 - 66	148.1	384.2	517.1		28 - 22 - 423.3	109.4	624.2		***
30 - 33 - 278.8	811.7	1347.4	***	27 - 19	93.3	479.4	1012.4		28 - 14 - 376.4	136.3	669.3		***
30 - 26 - 211.9	824.9	1357.8	***	27 - 24	44.7	489.3	1021.1		28 - 62 - 373.6	159.4	692.4		***
30 - 29 - 215.4	829.3	1362.3	***	27 - 32	17.7	320.3	1033.1		28 - 50 - 357.0	175.9	708.9		***
30 - 34 - 303.6	836.5	1369.3	***	27 - 68	3.8	558.7	1071.7	***	28 - 12 - 319.3	313.4	746.4		***
30 - 6 - 538.8	871.8	1404.7	***	27 - 30	16.2	560.1	1082.1	***	28 - 13 - 311.4	321.6	754.2		***
30 - 75 - 375.0	906.0	1440.9	***	27 - 61	32.3	585.3	1094.8	***	28 - 30 - 348.8	284.2	817.1		***
30 - 9 - 182.1	922.1	1455.0	***	27 - 7	64.4	597.3	1103.0	***	28 - 22 - 314.4	318.5	851.5		***
30 - 36 - 417.2	950.2	1463.1	***	27 - 39	78.6	611.5	1146.3	***	28 - 66 - 188.9	344.1	877.0		***
30 - 63 - 541.4	1076.3	1469.3	***	27 - 33	90.1	621.1	1150.0	***	28 - 19 - 91.6	411.4	912.3		***
30 - 23 - 675.3	1208.2	1474.2	***	27 - 28	103.1	630.2	1169.1	***	28 - 24 - 64.8	148.2	961.1		***
30 - 56 - 787.9	1320.8	1485.3	***	27 - 39	107.7	640.7	1173.0	***	28 - 32 - 52.0	480.2	1013.1		***
30 - 95 - 805.3	1338.5	1487.4	***	27 - 94	114.9	647.8	1180.8	***	28 - 48 - 34.3	498.7	1031.6		***
30 - 12 - 807.0	1340.0	1487.9	***	27 - 4	150.1	683.1	1216.1	***	28 - 30 - 13.9	509.0	1042.0		***
30 - 85 - 915.0	1428.0	1560.9	***	27 - 27	186.3	719.3	1232.2	***	28 - 61 - 7.6	325.4	1058.3		***
30 - 67 - 925.6	1459.6	1592.5	***	27 - 3	200.4	733.4	1260.3	***	28 - 7 - 24.3	357.4	1090.4	***	***
30 - 10 - 975.4	1500.4	2042.1	***	27 - 36	228.3	761.5	1294.3	***	28 - 28 - 38.3	371.4	1094.4	***	***
30 - 16 - 1058.5	1801.2	2134.3	***	27 - 65	354.7	807.6	1420.6	***	28 - 33 - 50.0	515.0	1119.0	***	***
30 - 64 - 1095.2	1829.3	2161.5	***	27 - 22	486.6	1019.6	1552.3	***	28 - 20 - 63.3	706.1	1129.1	***	***
30 - 8 - 1131.9	1860.4	2191.8	***	27 - 58	509.2	1131.2	1665.1	***	28 - 25 - 67.6	600.6	1133.3	***	***
30 - 9 - 1223.3	1736.7	2249.6	***	27 - 95	616.8	1149.3	1684.7	***	28 - 24 - 74.8	807.8	1140.7	***	***
30 - 15 - 1383.1	1916.0	2449.0	***	27 - 17	618.4	1151.3	1684.3	***	28 - 5 - 116.1	943.0	1176.0	***	***
30 - 1 - 1632.6	1971.1	2309.3	***	27 - 89	708.4	1239.3	1772.3	***	28 - 22 - 146.3	579.2	1212.2	***	***
30 - 45 - 1400.6	1993.8	2326.7	***	27 - 69	738.0	1270.9	1801.9	***	28 - 5 - 160.4	993.3	1226.3	***	***
30 - 2 - 1671.1	2004.1	2347.6	***	27 - 87	767.7	1320.7	1833.6	***	28 - 36 - 185.3	721.4	1234.4	***	***
30 - 33 - 1647.1	2188.7	2711.0	***	27 - 10	879.8	1424.8	1945.7	***	28 - 69 - 314.6	447.6	1760.5	***	***
30 - 49 - 2228.1	2711.1	2741.1	***	27 - 64	906.9	1439.9	1972.4	***	28 - 23 - 446.3	579.2	1512.4	***	***
30 - 4 - 1739.2	2202.9	2795.4	***	27 - 8	943.2	1476.2	2009.1	***	28 - 50 - 559.1	1092.1	1623.0	***	***
30 - 11 - 1821.0	2334.0	2697.0	***	27 - 9	1035.0	1608.0	2104.0	***	28 - 53 - 576.8	1109.7	1642.7	***	***
30 - 51 - 1838.7	2371.6	2904.6	***	27 - 15	1194.4	1227.1	2240.3	***	28 - 17 - 578.3	1111.2	1644.2	***	***
10 - 21 - 1265.6	-732.6	-195.6	***	27 - 45	1282.3	1813.7	2548.7	***	28 - 83 - 666.3	1199.2	1732.2	***	***
10 - 45 - 1136.1	-633.2	-70.2	***	27 - 21	1313.8	1828.8	244.9	***	28 - 99 - 497.5	1239.0	1703.8	***	***
10 - 47 - 953.1	-20.1	112.8		27 - 46	-1184.0	-1034.0	1310.0	***	28 - 88 - 747.7	1280.6	1813.6	***	***
10 - 54 - 946.4	-113.5	119.3		27 - 67	-1007.3	-470.4	62.5		28 - 40 - 835.7	1312.7	1905.7	***	***
10 - 31 - 907.9	-374.3	158.0		27 - 54	-996.7	-467.1	69.2		28 - 64 - 866.0	1319.8	1932.7	***	***
10 - 50 - 987.4	-354.9	158.0		27 - 31	-926.1	-423.2	107.8		28 - 4 - 1016.4	1435.1	1969.1	***	***
10 - 27 - 355.9	-354.9	711.1		27 - 50	-737.4	-204.4	328.3		28 - 9 - 995.0	1527.9	2000.9	***	***
10 - 32 - 303.0	-231.9	716.9		27 - 18	-589.2	-139.7	666.7		28 - 15 - 1154.3	1657.3	2220.2	***	***
10 - 24 - 102.2	-522.7	1031.7		27 - 62	-349.2	-183.7	716.7		28 - 21 - 1776.1	-843.1	-310.1	***	***
10 - 32 - 211.3	-554.7	1067.7	***	27 - 63	-322.7	-202.0	733.2		28 - 60 - 1245.6	-711.7	-180.7	***	***
10 - 40 - 40.2	-573.1	1106.2	***	27 - 12	-309.3	-239.8	770.7		28 - 47 - 1063.6	-530.6	2.3		***
10 - 30 - 59.6	-593.6	1165.6	***	27 - 13	-267.1	-245.9	778.3		28 - 54 - 1030.9	-524.0	9.0		***
10 - 61 - 97.9	599.9	1131.9	***	27 - 20	-245.1	-224.9	648.8		28 - 31 - 1016.4	-483.4	47.2		***
10 - 7 - 99.0	632.0	1144.9	***	27 - 22	-190.1	-341.8	873.8		28 - 50 - 797.7	-264.7	268.3		***
10 - 59 - 111.6	646.6	1178.7	***	27 - 30	-6.4	533.4	1066.3	***	28 - 20 - 609.0	-70.3	498.9		***
10 - 35 - 124.6	657.5	1190.5	***	27 - 51	16.7	549.7	1082.6	***	28 - 62 - 593.2	-93.3	606.4		***
10 - 26 - 117.3	676.7	1203.6	***	27 - 7	48.8	581.7	1114.7	***	28 - 25 - 568.5	-93.0	497.6		***
10 - 29 - 142.2	675.1	1208.1	***	27 - 32	-28.3	594.3	1103.7	***	28 - 3 - 121.3	107.7	343.9		

UNIVERSIDAD AUTÓNOMA NUEVO LEÓN

GENERA LIBRERIA

Comisiones_Areas_Ciclos										Comisiones									
16 - 77	110.3	643.3	1176.2	***	56 - 30	-98.8	434.2	667.1		38 - 15	-414.9	318.0	651.6						
16 - 9	124.4	687.4	1180.3	***	56 - 61	-82.5	430.5	683.5		38 - 20	-352.3	180.5	713.6						
16 - 26	133.5	683.5	1216.4	***	56 - 7	-30.4	482.6	1015.3		38 - 25	-319.0	211.0	747.9						
16 - 45	278.6	811.4	1344.6	***	56 - 38	-36.4	496.6	1024.1		38 - 56	-293.4	240.5	773.2						
16 - 23	410.4	943.5	1476.3	***	56 - 39	-24.8	506.1	1041.1		38 - 19	-197.1	315.8	848.3						
16 - 38	323.2	1056.1	1599.1	***	56 - 26	-11.7	521.2	1054.2		38 - 24	-198.3	344.8	877.6						
16 - 43	340.8	1073.4	1605.7	***	56 - 39	-7.3	523.7	1058.7		38 - 27	-196.3	376.6	909.6						
16 - 17	342.3	1075.3	1608.2	***	56 - 94	-6.1	535.9	1065.9		38 - 43	-197.4	393.1	928.1						
16 - 83	620.3	1165.3	1666.2	***	56 - 4	29.2	546.1	1101.1	***	38 - 30	-127.3	405.5	938.1						
16 - 49	661.9	1184.9	1727.6	***	56 - 72	74.4	604.3	1137.3	***	38 - 61	-111.1	421.8	954.8						
16 - 88	711.7	1244.7	1777.4	***	56 - 5	85.9	618.4	1151.4	***	38 - 7	-79.1	433.9	968.8						
16 - 10	803.8	1336.7	1859.7	***	56 - 36	113.4	646.9	1179.5	***	38 - 39	-40.1	467.9	1000.9						
16 - 64	830.9	1365.8	1896.8	***	56 - 23	231.7	904.5	1437.6	***	38 - 31	-53.3	478.4	1012.4						
16 - 8	857.1	1400.1	1533.1	***	56 - 38	248.2	1012.2	1550.2	***	38 - 24	-40.4	492.6	1031.3						
16 - 9	951.4	1492.0	2024.9	***	56 - 93	301.9	1034.8	1587.8	***	38 - 29	-35.9	497.0	1030.0						
16 - 15	1118.4	1651.4	2184.3	***	56 - 17	303.4	1036.4	1569.3	***	38 - 94	-28.7	504.2	1037.3						
16 - 1	1157.9	1706.3	2244.8	***	56 - 83	391.4	1174.4	1657.3	***	38 - 6	6.3	535.5	1074.4	***					
16 - 45	1196.1	1719.1	2262.0	***	56 - 68	623.0	1194.0	1686.9	***	38 - 77	42.7	575.7	1108.6	***					
16 - 3	1206.7	1739.7	2272.6	***	56 - 19	764.9	1207.8	1693.8	***	38 - 5	56.3	565.8	1122.7	***					
16 - 33	1582.4	1815.4	2448.3	***	56 - 04	792.0	1234.9	1857.9	***	38 - 69	211.1	744.0	1277.0	***					
16 - 49	1430.3	1765.4	2496.4	***	56 - 8	828.3	1361.2	1894.2	***	38 - 16	453.0	875.9	1409.8	***					
16 - 6	1464.8	1817.8	2330.7	***	56 - 9	920.1	1433.0	1986.0	***	38 - 93	473.2	1006.2	1539.1	***					
16 - 11	1596.3	2089.3	2623.2	***	56 - 15	1079.4	1617.4	2145.4	***	38 - 17	474.7	1087.7	1549.7	***					
16 - 24	1579.6	2106.9	2635.9	***	56 - 1	1124.9	1607.1	2205.9	***	38 - 63	302.7	1059.7	1628.7	***					
3 - 21	-1386.7	-833.8	-320.8	***	56 - 43	1137.2	1090.1	2223.1	***	38 - 69	594.3	1177.3	1660.2	***					
3 - 46	-1237.3	-724.3	-191.4	***	56 - 2	1167.8	1000.8	1707.7	***	38 - 20	735.2	1269.2	1802.2	***					
3 - 47	-1974.2	-541.3	-4.3	***	56 - 33	1347.3	1076.5	2409.4	***	38 - 49	1391.0	1924.5	2437.5	***					
3 - 54	-1067.6	-554.7	-1.7	***	56 - 49	1391.0	1924.5	2437.5	***	38 - 4	1473.9	1918.8	2491.4	***					
3 - 31	-1029.1	-496.1	36.9		56 - 31	1317.4	2050.4	2483.3	***	38 - 31	1335.0	2068.0	2491.0	***					
3 - 50	-804.3	-275.4	237.6		56 - 20	-833.2	1320.5	212.7		38 - 27	-69.8	1100.3	1638.8	2177.2					
3 - 18	-654.1	-131.1	411.8		56 - 18	-695.0	166.1	364.9		38 - 49	1128.5	1664.9	2194.4	***					
3 - 27	-619.7	-86.7	446.3		56 - 27	-684.8	-113.8	417.1		38 - 2	1139.1	1672.1	2205.1	***					
3 - 47	-503.9	-70.3	462.0		56 - 47	-619.1	-56.2	-51.2		38 - 34	-112.5	-77.6	40.8	***					
3 - 25	-379.6	-46.6	486.3		56 - 34	-112.5	-77.6	40.8		38 - 31	-1074.9	-541.0	-6.1	***					
3 - 16	-543.6	-10.7	522.3		56 - 20	-833.2	1320.5	212.7		38 - 11	1489.7	2024.7	2554.7	***					
3 - 53	-504.7	28.3	361.2		56 - 18	-695.0	166.1	364.9		38 - 91	1508.4	2039.8	2571.3	***					
3 - 57	-488.0	44.9	577.9		56 - 27	-684.8	-113.8	417.1											
3 - 28	-476.0	56.9	599.9		56 - 47	-619.1	-56.2	-51.2											
3 - 52	-473.1	82.6	391.8		56 - 34	-112.5	-77.6	40.8											
3 - 14	-473.1	109.7	467.9		56 - 20	-833.2	1320.5	212.7											
3 - 62	-420.1	112.8	465.7		56 - 14	-605.9	610.8	397.9											
3 - 50	-603.7	129.3	463.2		56 - 61	-465.1	61.9	600.8											
3 - 12	-306.1	166.8	499.8		56 - 30	-448.6	84.9	417.3											
3 - 13	-539.4	174.9	707.9		56 - 16	-585.5	53.6	477.4											
3 - 20	-295.4	257.5	770.3		56 - 3	-577.9	44.8	488.0											
3 - 22	-261.1	271.9	804.9		56 - 35	-543.6	16.6	516.3											
3 - 7	-22.1	510.8	1064.8		56 - 22	-306.8	12.0	545.0											
3 - 36	-8.1	526.8	1057.8		56 - 66	-280.6	221.6	783.5											
3 - 13	3.4	536.4	1089.3	***	56 - 19	185.1	347.6	886.8											
3 - 26	10.3	549.5	1082.3	***	56 - 24	-196.8	356.7	889.6											
3 - 29	21.0	554.0	1086.9	***	56 - 32	-144.3	388.7	911.6											
3 - 34	28.1	561.1	1094.1	***	56 - 48	-125.8	407.1	940.1											
3 - 6	63.4	596.4	1129.4	***	56 - 30	-113.4	417.3	950.3											
3 - 77	99.6	632.6	1165.3	***	56 - 61	-99.1	433.8	966.8											
3 - 3	113.7	646.7	1179.6	***	56 - 7	-47.1	463.9	998.9											
3 - 56	141.4	674.8	1207.8	***	56 - 39	-53.0	479.5	1012.9											
3 - 63	268.0	800.3	1333.8	***	56 - 13	41.5	491.5	1024.4											
3 - 13	399.9	952.4	1465.8	***	56 - 36	-28.4	308.0	1037.5											
3 - 36	512.5	1045.5	1574.4	***	56 - 29	-21.9	309.8	1042.0											
3 - 93	550.1	1053.1	1596.0	***	56 - 94	-45.7	316.2	1041.2											
3 - 17	591.6	1044.6	1597.6	***	56 - 6	18.5	311.5	1041.4	***										
3 - 83	619.7	1132.6	1595.7	***	56 - 72	-54.7	387.1	1126.8	***										
3 - 43	615.1	1184.2	1717.2	***	56 - 5	68.8	601.8	1134.7	***										
3 - 49	185.4	1718.4	2313.4	***	56 - 56	96.9	629.9	1162.9	***										
3 - 2	1196.1	1729.0	2362.0	***	56 - 63	223.1	736.0	1289.0	***										
3 - 53	1371.7	1904.7	2417.7	***	56 - 23	337.0	886.0	1420.9	***										
3 - 49	1419.8	1932.8	2457.7	***	56 - 56	447.6	1000.6	1533.5	***										
3 - 4	1454.1	1987.1	2520.0	***	56 - 73	485.2	1011.2	1551.1	***										
3 - 11	1545.7	2074.6	2611.6	***	56 - 9	903.4	1046.8	1969.3	***										
3 - 31	1903.3	2092.6	2629.2	***	56 - 15	1062.8	1193.7	2126.7	***										
35 - 21	-1415.0	-881.0	-349.1	***	56 - 1	1112.3	1103.8	2189.5	***										
35 - 46	-1285.6	-752.6	-219.6	***	56 - 43	1140.3	1073.0	2204.6	***										
35 - 27	-1102.5	-565.5	-36.6	***	56 - 1	1151.4	1048.1	2217.1	***										
35 - 54	-1095.9	-562.9	-29.9	***	56 - 53	1326.8	1359.3	2355.9											

Comisiones										
14 - 3	-642.9	-109.9	423.1							
14 - 35	-614.6	-81.4	453.3							
14 - 37	-597.9	-83.0	468.9							
14 - 38	-585.9	-93.0	480.3							
14 - 32	-580.9	-47.1	485.9							
14 - 62	-530.1	-2.9	533.8							
14 - 40	-513.4	-16.4	533.3							
14 - 13	-478.0	-54.9	588.9							
14 - 13	-467.9	-83.0	598.0							
14 - 30	-403.3	-127.7	600.6							
14 - 22	-371.0	-162.9	691.0							
14 - 64	-343.4	-187.6	720.3							
14 - 19	-250.1	-282.9	813.8							
14 - 24	-241.3	-291.7	824.6							
14 - 25	-209.3	-303.7	835.6							
14 - 48	-190.8	-342.1	873.1							
14 - 36	-180.4	-552.5	883.3							
14 - 41	-166.1	-388.9	901.8							
14 - 7	-132.0	-400.9	933.9							
14 - 39	-118.0	-414.9	947.9							
14 - 33	-105.5	-426.9	956.4							
14 - 26	-93.4	-439.6	972.6							
14 - 29	-88.9	-644.1	977.0							
14 - 94	-51.7	-451.2	984.2							
14 - 8	-48.3	-486.5	1019.5							
14 - 77	-10.3	-922.7	1033.6							
14 - 5	-3.8	-538.8	1069.7	***						
14 - 36	-31.9	-564.9	1097.9	***						
14 - 63	135.1	-891.0	1234.0	***						
14 - 23	290.0	-823.0	1355.9	***						
14 - 38	402.6	-935.6	1405.6	***						
14 - 95	420.2	-933.2	1486.1	***						
14 - 17	411.0	-954.7	1487.7	***						
14 - 85	399.8	-1042.7	1573.7	***						
14 - 97	341.4	-1074.3	1607.3	***						
14 - 38	391.1	-1124.1	1657.0	***						
14 - 10	465.2	-1216.2	1749.1	***						
14 - 54	710.3	-1243.3	1796.2	***						
14 - 8	746.6	-1279.6	1812.3	***						
14 - 9	338.4	-1371.4	1904.4	***						
14 - 15	997.3	-1390.7	2063.1	***						
14 - 1	1047.3	-1585.8	2124.3	***						
14 - 45	1073.5	-1606.3	2141.3	***						
14 - 2	1080.2	-1619.1	2152.2	***						
14 - 32	1201.8	-1794.8	2177.0	***						
14 - 49	1309.7	-1842.9	2375.8	***						
14 - 8	1344.2	-1842.2	2410.4	***						
14 - 11	1455.8	-1908.7	2501.7	***						
14 - 31	1455.4	-1906.3	2119.3	***						
14 - 21	-1499.3	-908.6	433.6	***						
14 - 26	-1370.1	-877.1	304.2	***						
14 - 47	-1187.0	-134.1	1213.3	***						
14 - 34	-1180.4	-647.4	1143.3	***						
14 - 51	-1141.8	-608.9	753.9	***						
14 - 30	-924.1	-386.1	144.8	***						
14 - 18	-766.9	-233.9	299.0	***						
14 - 25	-722.4	-159.9	331.5	***						
14 - 27	-716.7	-183.7	349.3	***						
14 - 15	-592.4	-199.4	373.6	***						
14 - 16	-656.4	-123.4	405.3	***						
14 - 3	-645.7	-112.8	420.2	***						
14 - 55	-617.9	-84.5	448.4	***						
14 - 20	-600.8	-67.9	465.1	***						
14 - 28	-588.8	-55.9	477.1	***						
14 - 23	-582.9	-50.0	483.0	***						
14 - 60	-516.4	-2.9	530.1	***						
14 - 12	-478.9	-54.0	587.0	***						
14 - 13	-470.8	-82.2	595.1	***						
14 - 20	-408.2	-124.8	637.2	***						
14 - 22	-373.8	-139.1	692.1	***						
14 - 66	-348.3	-144.7	717.6	***						
14 - 19	-255.0	-260.0	812.3	***						
14 - 24	-244.2	-268.8	821.7	***						
14 - 22	-212.2	-320.8	835.7	***						
14 - 48	-195.7	-359.3	872.1	***						
14 - 5	-183.0	-369.6	882.6	***						
14 - 51	-157.0	-366.0	898.9	***						
14 - 1	-134.9	-398.0	931.6	***						
14 - 35	-120.9	-412.0	945.0	***						
14 - 33	-109.4	-423.6	956.3	***						
14 - 36	-96.2	-436.7	969.7	***						
14 - 39	-91.8	-441.2	974.1	***						
14 - 2	-84.6	-448.1	981.3	***						
14 - 6	-49.3	-483.6	1016.6	***						
14 - 7	-13.2	-319.8	1022.8	***						
14 - 3	1.0	-533.9	1066.9	***						
14 - 36	29.1	-362.0	1093.0	***						
14 - 65	155.2	-688.2	1212.1	***						
14 - 23	287.1	-820.1	1353.0	***						
14 - 38	599.7	-932.7	1463.6	***						
14 - 91	417.4	-920.1	1493.3	***						
14 - 17	418.9	-881.8	1494.4	***						
14 - 35	306.9	-1039.9	1572.4	***						
14 - 38	328.3	-1071.6	1604.4	***						
14 - 39	588.3	-1131.2	1654.2	***						
14 - 10	580.3	-1213.3	1743.3	***						
14 - 24	707.4	-1240.4	1772.3	***						
14 - 8	743.0	-1276.7	1809.7	***						
14 - 9	633.6	-1304.3	1901.3	***						
14 - 15	994.9	-1927.9	2060.8	***						
14 - 1	1044.1	-1982.9	2121.4	***						
14 - 45	1072.7	-1902.6	2138.6	***						
14 - 3	1063.3	-1416.2	2149.2	***						
14 - 35	1259.0	-1791.9	2324.9	***						
14 - 49	1307.0	-1840.0	2372.9	***						
14 - 4	1341.4	-1874.3	2407.3	***						
14 - 11	1432.9	-1961.8	2498.8	***						
14 - 51	1430.3	-1983.9	2516.4	***						
14 - 21	-1516.0	-983.1	450.1	***						
14 - 16	1396.6	-1531.6	910.7	***						



Comisiones Admision Callao		Comisiones		Comisiones					
29 - 10	555.6	1084.5	1631.3	***	24 - 36	-135.4	377.3	910.1	***
30 - 04	363.8	1115.6	1644.4	***	25 - 63	-79.1	303.3	1036.4	***
29 - 8	619.0	1131.0	1644.9	***	26 - 25	102.5	353.4	1108.4	***
20 - 3	710.8	1243.7	1776.7	***	25 - 38	213.0	748.0	1281.0	***
20 - 13	870.1	1405.1	1916.0	***	25 - 93	252.7	765.6	1298.6	***
20 - 1	919.8	1458.1	1996.4	***	25 - 17	254.2	767.2	1300.1	***
20 - 43	947.9	1460.8	2013.8	***	25 - 83	262.2	833.2	1308.1	***
22 - 2	438.5	1491.5	2024.4	***	25 - 99	333.8	896.8	1419.7	***
20 - 23	1134.2	1667.1	2200.1	***	25 - 88	403.6	936.3	1469.3	***
20 - 40	1161.3	1715.2	2248.2	***	25 - 10	495.7	1028.4	1551.4	***
20 - 4	1316.0	1749.3	2252.3	***	25 - 94	523.8	1055.7	1586.7	***
20 - 11	1320.1	1841.1	2374.0	***	25 - 8	559.1	1092.0	1626.0	***
20 - 58	1323.7	1858.7	2391.6	***	25 - 9	650.9	1183.8	1716.8	***
25 - 21	1654.6	1135.7	3417.7	***	25 - 15	810.2	1343.2	1876.1	***
22 - 46	1321.3	994.3	461.3	***	25 - 1	859.7	1398.2	1936.7	***
22 - 27	1246.1	813.3	240.2	***	25 - 45	889.0	1420.9	1959.9	***
22 - 34	1339.5	906.5	273.6	***	25 - 2	895.6	1431.1	1954.3	***
22 - 31	1391.0	794.0	235.0	***	25 - 31	1074.3	1607.2	2140.2	***
21 - 50	1080.2	547.3	14.3	***	25 - 49	1122.4	1655.3	2190.3	***
21 - 30	926.0	393.1	139.9	***	25 - 4	1156.7	1609.6	2220.6	***
21 - 27	891.6	358.6	174.4	***	25 - 11	1248.2	1791.2	2314.1	***
21 - 57	475.8	342.8	190.1	***	25 - 51	1305.8	1798.8	2331.7	***
21 - 25	631.5	318.5	214.4	***	19 - 21	-1779.3	-1246.5	-715.6	***
21 - 30	813.3	282.6	230.4	***	19 - 44	-1650.0	-1117.1	-586.1	***
21 - 3	904.9	271.9	301.1	***	19 - 47	-1667.0	-938.0	-401.1	***
21 - 51	774.6	243.6	289.3	***	19 - 54	-1686.6	-927.4	-384.4	***
21 - 38	739.9	227.0	306.0	***	19 - 31	-1421.6	-888.8	-359.9	***
21 - 32	747.9	215.0	318.0	***	19 - 38	-201.1	-658.1	-135.2	***
21 - 32	742.0	205.1	323.9	***	19 - 27	-1012.4	-479.4	-53.5	***
21 - 16	695.0	162.0	371.0	***	19 - 67	-996.6	-463.7	-69.3	***
21 - 62	692.1	159.1	373.8	***	19 - 25	-972.3	-439.4	-93.6	***
21 - 63	673.6	142.6	340.4	***	19 - 16	-955.4	-409.4	-129.5	***
21 - 17	638.0	105.1	427.9	***	19 - 3	-915.7	-392.7	-140.2	***
21 - 13	624.9	97.0	436.0	***	19 - 34	-597.4	-368.5	-168.5	***
21 - 20	367.3	34.3	493.6	***	19 - 57	-810.0	-347.8	-185.1	***
21 - 65	367.4	25.6	378.3	***	19 - 28	-868.3	-333.8	-197.1	***
21 - 19	412.1	19.6	613.8	***	19 - 38	-862.9	-329.9	-203.4	***
21 - 24	403.3	129.7	662.0	***	19 - 14	-813.8	-282.8	-250.1	***
21 - 33	371.3	161.7	684.6	***	19 - 62	-812.3	-280.0	-253.0	***
21 - 68	352.8	160.1	711.1	***	19 - 60	-796.4	-263.5	-269.5	***
21 - 30	342.4	159.5	713.3	***	19 - 12	-758.9	-225.4	-307.0	***
21 - 6	326.1	204.9	739.8	***	19 - 13	-750.8	-217.0	-315.1	***
21 - 7	204.0	231.9	771.9	***	19 - 20	-686.1	-185.2	-377.8	***
21 - 59	290.0	252.9	733.9	***	19 - 22	-633.8	-182.0	-412.1	***
21 - 35	264.5	264.5	797.4	***	19 - 66	-628.2	-195.3	-437.7	***
21 - 26	293.4	277.6	810.6	***	19 - 48	-524.1	-81.0	-341.4	***
21 - 70	290.9	282.1	811.0	***	19 - 72	-482.1	-81.3	-373.8	***
21 - 24	243.7	289.2	821.2	***	19 - 48	-473.7	-59.3	-392.1	***
21 - 6	208.5	324.3	837.3	***	19 - 39	-463.3	-69.7	-602.6	***
21 - 77	172.3	360.3	833.6	***	19 - 61	-446.9	-80.0	-619.9	***
21 - 5	154.2	377.6	807.7	***	19 - 7	-814.9	-118.1	-851.0	***
21 - 36	130.1	402.9	835.9	***	19 - 17	-860.9	-152.1	-669.0	***
21 - 6	103.9	529.0	1001.0	***	19 - 33	-893.1	-143.6	-676.4	***
21 - 22	128.0	661.0	1173.3	***	19 - 20	-370.2	-156.4	-689.7	***
21 - 38	240.6	773.6	1306.5	***	19 - 29	-371.7	-161.2	-694.1	***
21 - 93	284.2	791.2	1324.1	***	19 - 94	-364.6	-165.4	-701.4	***
21 - 57	299.8	792.7	1325.7	***	19 - 4	-329.3	-203.7	-736.4	***
21 - 83	347.8	880.7	1413.7	***	19 - 77	-282.1	-259.8	-773.3	***
21 - 38	378.4	912.3	1445.3	***	19 - 5	-279.0	-253.9	-789.7	***
21 - 79	427.1	962.1	1499.1	***	19 - 36	-250.9	-262.1	-815.0	***
21 - 16	321.2	1054.2	1871.1	***	19 - 63	-124.8	-402.8	-941.1	***
21 - 8	348.3	1041.3	1814.2	***	19 - 25	7.3	340.1	1073.1	***
21 - 4	384.0	1171.6	1850.3	***	19 - 10	100.4	333.3	1065.3	***
21 - 9	670.4	1209.4	1742.4	***	19 - 94	147.3	652.7	1185.7	***
21 - 15	633.8	1308.8	1901.7	***	19 - 93	137.4	670.3	1203.3	***
21 - 1	663.3	1423.8	1961.3	***	19 - 17	138.3	671.9	1204.8	***
21 - 2	934.2	1437.4	1990.1	***	19 - 43	220.9	759.9	1292.3	***
21 - 34	1099.9	1432.8	2161.8	***	19 - 68	328.3	791.3	1324.4	***
21 - 49	1147.1	1650.9	2213.8	***	19 - 10	502.3	841.2	1374.2	***
21 - 4	1162.3	1715.2	2248.2	***	19 - 9	600.7	960.0	1493.4	***
21 - 11	1273.8	1864.7	2339.7	***	19 - 9	635.7	1088.6	1621.3	***
21 - 91	1291.4	1824.6	2377.3	***	19 - 15	714.9	1247.5	1780.9	***
21 - 21	1604.2	-1151.2	-416.3	***	19 - 45	792.7	1325.7	1858.6	***
21 - 46	1554.8	-1021.8	-418.8	***	19 - 2	803.3	1363.3	1869.2	***
21 - 47	1371.7	-854.7	-305.8	***	19 - 51	812.0	1512.0	2044.9	***
21 - 56	1369.1	-832.1	-299.2	***	19 - 4	1027.1	1560.0	2050.4	***
21 - 31	1226.5	-793.6	-286.0	***	19 - 4	1061.4	1594.3	2127.1	***
21 - 60	910.8	-772.8	-39.9	***	19 - 11	1152.0	1695.5	2218.8	***
21 - 10	931.6	-418.6	114.3	***	19 - 31	1170.3	1703.3	2216.3	***
21 - 27	917.1	-364.2	143.8	***	20 - 21	-1785.3	-1255.3	-722.4	***
21 - 67	901.3	-364.6	194.6	***	20 - 49	-1556.9	-1125.9	-592.9	***
21 - 29	877.0	-344.1	183.9	***	20 - 47	-1474.8	-942.8	-409.9	***
21 - 16	841.1	-306.1	224.8	***	20 - 34	-1469.2	-956.2	-405.3	***
21 - 3	830.6	-297.5	233.3	***	20 - 31	-1433.6	-897.7	-364.7	***
21 - 55	802.1	-269.2	243.8	***	20 - 30	-1409.9	-876.9	-344.0	***
21 - 37	785.3	-232.6	260.4	***	20 - 14	-1033.7	-522.7	-19.2	***
21 - 28	773.5	-245.2	292.4	***	20 - 27	-1012.1	-498.3	-44.7	***
21 - 35	767.6	-234.6	298.3	***	20 - 47	-1005.4	-472.5	-60.5	***
21 - 14	720.5	-187.6	345.4	***	20 - 25	-981.1	-442.2	-44.8	***
21 - 62	717.6	-184.7	346.3	***	20 - 10	-943.2	-412.2	-120.7	***
21 - 60	701.1	-168.2	346.8	***	20 - 3	934.5	-401.6	-151.4	***
21 - 12	685.3	-130.6	402.3	***	20 - 55	-905.3	-373.3	-159.7	***
21 - 15	655.5	-122.5	416.4	***	20 - 37	-899.6	-356.7	-176.5	***
21 - 20	591.9	-99.9	473.1	***	20 - 28	-877.6	-344.6	-188.3	***
21 - 21	598.3	-95.6	507.4	***	20 - 52	-871.7	-339.7	-194.2	***
21 - 19	437.7	95.5	626.2	***	20 - 14	-824.6	-291.7	-241.3	***
21 - 34	428.9	104.1	627.1	***	20 - 60	-821.7	-288.8	-244.2	***
21 - 32	396.8	136.1	669.1	***	20 - 12	-767.1	-274.7	-240.7	***
21 - 49	398.4	134.6	687.5	***	20 - 13	-739.6	-278.2	-248.2	***
21 - 30	366.0	165.0	697.9	***	20 - 15	-719.6	-255.6	-206.3	***
21 - 61	351.7	181.3	714.3	***	20 - 29	-696.9	-164.0	-169.0	***
21 - 7	319.6	211.3	746.3	***	20 - 21	-652.6	-122.7	-405.3	***
21 - 36	305.6	227.4	760.3	***	20 - 65	-607.1	-104.1	-428.9	***
21 - 35	294.0	250.9	771.9	***	20 - 19	-541.8	-68	524.1	***
21 - 26	280.9	252.0	785.0	***	20 - 32	-505.2	-272.3	-240.7	***
21 - 39	274.6	266.8	789.4	***	20 - 12	-767.1	-274.7	-248.2	***
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21 - 77	197.6	335.1	946.1	***	20 - 7	-433.7	109.2	642.2	***
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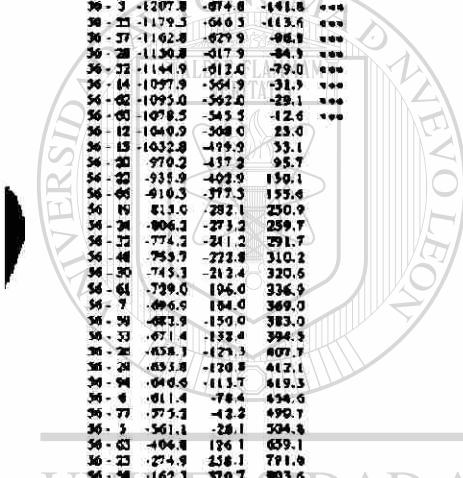
Comparación Actual-Ciudad											
48 - 22 - 713.1	-150.1	352.8	61 - 37 - 906.8	433.8	99.1	99 - 30 - 1333.1	-800.2	-287.2	***		
48 - 68 - 357.5	-158.6	378.4	61 - 38 - 924.8	428.8	111.1	99 - 18 - 1178.9	-645.8	-113.6	***		
48 - 19 - 392.2	-39.3	413.7	61 - 39 - 940.9	-413.9	117.0	99 - 21 - 1144.5	-611.5	-76.6	***		
48 - 26 - 333.4	-30.3	462.3	61 - 40 - 906.9	-396.0	181.0	99 - 47 - 1128.7	-395.7	-62.8	***		
48 - 32 - 331.4	-18.3	314.3	61 - 41 - 982.4	-349.5	183.5	99 - 23 - 1104.4	-571.4	-36.3	***		
48 - 39 - 323.6	10.4	343.3	61 - 13 - 844.9	311.7	231.0	99 - 16 - 1066.4	-533.3	-2.3	***		
48 - 61 - 306.2	26.7	339.7	61 - 13 - 830.8	-303.8	226.1	99 - 5 - 1057.8	-324.8	8.1			
48 - 7 - 474.2	58.8	591.7	61 - 20 - 774.1	-241.1	291.9	99 - 55 - 1029.5	-495.6	36.4			
48 - 29 - 460.2	73.8	603.7	61 - 22 - 739.8	-208.9	326.1	99 - 27 - 1012.9	-479.3	53.9			
48 - 33 - 448.6	84.3	617.9	61 - 19 - 714.3	-181.3	331.7	99 - 26 - 1030.9	-457.9	65.1			
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48 - 29 - 431.0	101.9	634.9	61 - 24 - 610.1	-77.3	435.8	99 - 14 - 947.9	-414.9	128.0			
48 - 94 - 423.8	109.1	642.1	61 - 37 - 578.1	-413.3	487.8	99 - 62 - 943.0	-412.0	120.9			
48 - 6 - 388.4	144.4	677.3	61 - 48 - 539.7	-263	504.3	99 - 40 - 921.5	-395.3	137.4			
48 - 73 - 392.4	180.5	713.3	61 - 30 - 345.3	-16.3	316.0	99 - 12 - 891.0	-350.0	175.0			
48 - 5 - 338.3	194.7	727.0	61 - 1 - 300.9	32.1	383.0	99 - 13 - 852.8	-349.9	183.1			
48 - 36 - 310.2	222.8	735.7	61 - 39 - 486.9	46.6	579.0	99 - 20 - 820.2	-387.3	245.7			
48 - 65 - 194.1	348.9	841.9	61 - 39 - 475.3	57.6	540.0	99 - 22 - 783.9	-232.9	386.0			
48 - 23 - 32.1	480.8	1013.8	61 - 26 - 462.3	70.7	603.7	99 - 66 - 780.3	-237.4	305.6			
48 - 38 - 60.3	593.4	1120.4	***	61 - 29 - 437.8	72.3	603.2	99 - 19 - 665.0	-192.1	400.9		
48 - 93 - 78.1	611.1	1144.0	***	61 - 29 - 437.8	72.3	603.2	99 - 24 - 616.2	-123.3	408.7		
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48 - 23 - 107.0	790.6	1333.5	***	61 - 4 - 413.3	117.6	630.6	99 - 48 - 603.7	-72.6	460.2		
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48 - 1 - 705.2	1243.6	1782.1	***	61 - 83 - 140.9	673.9	1206.8	99 - 77 - 435.2	107.8	640.7		
48 - 49 - 733.4	1256.4	1799.3	***	61 - 59 - 172.3	701.3	1238.1	99 - 5 - 411.1	121.9	654.3		
48 - 2 - 744.6	1277.0	1809.9	***	61 - 38 - 222.3	735.2	1288.2	99 - 36 - 385.0	130.0	682.9		
48 - 53 - 919.7	1452.7	1985.6	***	61 - 35 - 314.4	847.3	1380.3	99 - 43 - 258.8	27.1	509.1		
48 - 49 - 367.8	1500.7	2033.7	***	61 - 34 - 341.3	874.4	1407.4	99 - 23 - 134.9	408.1	941.0		
48 - 4 - 1002.1	1533.1	2064.0	***	61 - 8 - 377.8	910.7	1443.7	99 - 56 - 11.3	320.6	1033.6		
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30 - 44 - 349.3	-10.6	312.6	***	7 - 12 - 876.9	-344.0	189.0	99 - 3 - 1050.3	-536.4	-3.4	***	
30 - 61 - 316.6	14.3	293.3	***	7 - 13 - 848.8	-335.9	197.1	99 - 15 - 1041.1	-508.1	24.8	***	
30 - 7 - 184.6	48.4	281.3	***	7 - 30 - 806.2	-273.2	237.7	99 - 37 - 1024.4	-571.3	41.3	***	
30 - 59 - 170.6	62.4	295.4	***	7 - 22 - 771.9	-218.9	284.0	99 - 38 - 1012.4	-579.4	33.5	***	
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30 - 53 - 909.3	1442.3	1973.2	***								



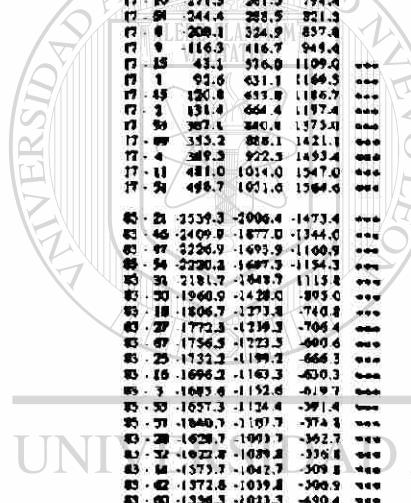
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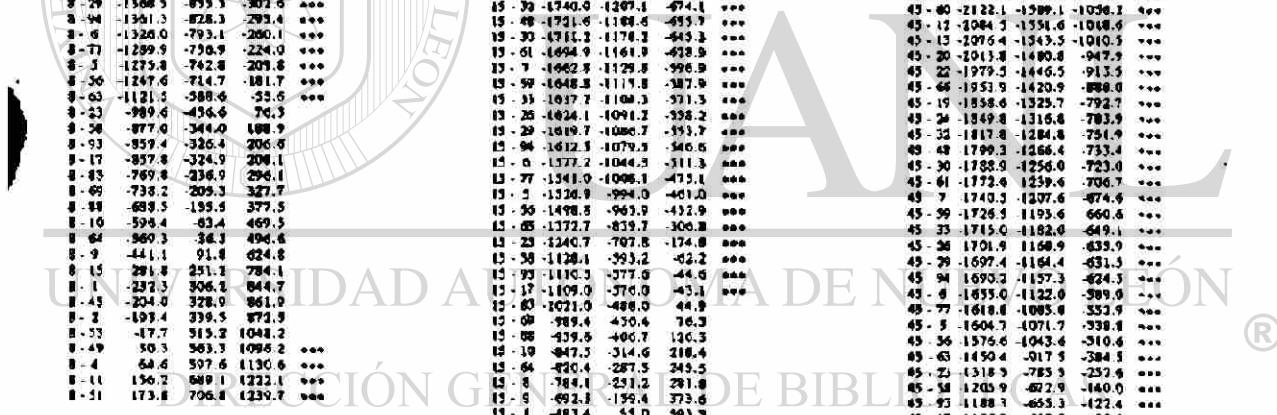
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33 - 21	1926.9	1559.9	2092.8
35 - 34	-1956.3	-4450.3	-870.3
35 - 45	1806.8	1275.8	740.1
36 - 47	-1635.7	-1090.4	-557.8
36 - 54	-1617.1	1064.1	591.2
36 - 51	1978.4	1045.8	512.2
36 - 30	-1557.8	-824.9	-391.1
36 - 48	-1201.4	-670.7	-137.7
36 - 27	1169.2	630.2	103.1
36 - 67	-1151.4	-620.4	-37.1
36 - 35	-1129.1	596.1	43.2
36 - 16	-1093.1	-560.2	-27.2
36 - 3	-1082.5	-545.3	-14.3
36 - 35	-1034.1	-521.2	11.7
36 - 57	-1037.5	-504.6	28.4
36 - 28	-1035.5	-492.6	40.4
36 - 32	-1019.4	-485.7	65.1
36 - 34	-971.8	-438.6	93.4
36 - 62	-866.1	-430.7	96.3
36 - 49	-933.2	-420.3	112.8
36 - 12	-913.6	-362.7	130.3
36 - 15	-937.9	-374.6	138.1
36 - 20	-844.5	-311.9	221.0
36 - 22	-810.6	-277.0	239.4
36 - 60	-783.8	-232.0	260.9
36 - 19	-669.7	-156.3	376.2
36 - 24	-600.9	-147.9	365.0
36 - 25	-645.9	-115.9	417.0
36 - 46	-630.4	-97.3	435.3
36 - 30	-620.0	-87.1	445.9
36 - 61	-603.7	-70.7	463.2
36 - 7	-571.6	-36.7	484.3
36 - 30	-537.6	-24.7	508.3
36 - 25	-545.1	-13.1	519.1
36 - 39	-523.5	4.3	537.4
36 - 34	-521.1	11.0	544.6
36 - 6	-488.8	46.9	579.9
36 - 77	-443.9	83.1	616.0
36 - 5	-453.8	97.2	630.1
36 - 36	-497.7	123.3	638.5
36 - 63	-281.1	251.4	784.4
36 - 23	-449.6	383.4	916.5
36 - 38	-37.0	496.6	1028.9
36 - 93	-19.4	513.6	1044.1
36 - 17	-17.8	513.1	1044.1
36 - 25	-70.2	603.1	1116.1
36 - 49	-601.8	634.7	1167.7
36 - 85	-151.1	684.3	1271.4
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36 - 64	-270.7	801.7	1336.6
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36 - 9	-398.8	931.8	1604.4
36 - 15	-399.2	1051.2	1624.1
36 - 1	-607.7	1146.2	1664.7
36 - 43	-632.9	1165.9	1701.9
36 - 2	-646.6	1179.5	1711.3
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36 - 4	-904.6	1437.6	1970.6
36 - 11	-915.2	1529.1	2042.1
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36 - 21	-1940.7	-1407.7	-874.4
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36 - 34	-1621.6	1088.6	-555.6
36 - 31	-1585.9	1030.1	-517.4
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36 - 27	-1173.0	-640.7	-107.7
36 - 07	-1157.8	-624.9	-91.9
36 - 23	-1133.1	-606.6	-67.0
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36 - 3	-1084.9	-554.0	-21.0
36 - 33	-1056.1	-525.1	7.5
36 - 27	-1042.0	-500.1	23.9
36 - 28	-1030.0	-497.0	31.9
36 - 32	-491.1	414.1	
36 - 14	-977.0	-444.1	48.9
36 - 62	-976.1	-441.3	31.8
36 - 50	-937.0	-424.7	108.3
36 - 12	-920.1	-387.1	145.8
36 - 13	-912.0	-379.0	133.9
36 - 20	-849.3	-316.3	216.0
36 - 22	-815.0	-301.1	230.9
36 - 66	-799.4	-254.3	274.3
36 - 17	-694.1	-161.1	371.7
36 - 36	-683.1	-132.4	340.6
36 - 30	-653.1	-120.4	412.6
36 - 49	-634.9	-104.9	411.0
36 - 30	-624.3	-81.5	441.4
36 - 61	-609.3	-52.3	437.8
36 - 7	-576.1	-45.1	489.8
36 - 39	-562.1	-29.1	503.8
36 - 33	-555.0	-17.6	515.4
36 - 26	-537.4	-4.3	528.3
36 - 34	-525.1	7.2	540.1
36 - 6	-490.3	42.4	515.4
36 - 77	-494.1	74.6	611.6
36 - 3	-480.2	42.7	625.7
36 - 34	-412.1	120.8	635.8
36 - 68	-286.0	247.0	775.9
36 - 23	-154.0	378.9	811.9
36 - 30	-41.4	481.5	1024.5
36 - 93	-23.8	509.1	1042.1
36 - 17	-23.3	510.7	1043.6
36 - 63	62.7	588.7	1151.6
36 - 65	87.3	610.3	1169.3
36 - 68	147.1	680.0	1213.0
36 - 19	279.3	772.1	1593.1
36 - 64	260.3	791.2	1332.3
36 - 8	302.6	835.5	1368.5
36 - 9	384.4	927.3	1460.3
36 - 19	353.7	1046.7	1419.7
36 - 43	603.2	1141.7	1480.2
36 - 2	642.1	1175.1	1708.0
36 - 33	812.8	1350.8	1883.7
36 - 48	863.9	1388.8	1931.8
36 - 4	900.2	1433.1	1960.4
36 - 11	911.7	1524.7	2037.6
36 - 31	1009.3	1542.9	2073.3
36 - 21	-1947.9	-1414.9	-882.0
36 - 40	-1818.4	-1283.5	-752.3
36 - 47	-1655.4	-1102.4	-569.3
36 - 24	-1628.7	-1092.8	-562.8
36 - 31	-1590.2	-1072.2	-524.3
36 - 50	-1369.5	-876.5	-302.6
36 - 18	-1215.3	-682.3	-149.4
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36 - 87	-1163.0	-621.1	-49.1
36 - 25	-1140.7	-587.5	-74.0
36 - 88	-1104.8	-571.8	-36.9
36 - 3	-1094.1	-561.1	-32.2
36 - 23	-1065.8	-532.9	0.1
36 - 37	-1045.2	-514.2	10.7
36 - 29	-1037.2	-504.2	28.7
36 - 32	-1031.3	-498.3	34.0
36 - 14	-984.2	-451.2	81.7
36 - 42	-981.3	-440.4	84.6
36 - 45	-944.8	-431.8	101.1
36 - 22	-927.3	-394.3	138.6
36 - 13	-919.2	-386.2	146.8
36 - 30	-886.5	-323.6	209.4
36 - 22	-852.2	-286.3	243.7
36 - 6	-856.6	-263.7	269.3
36 - 19	-761.4	-163.4	344.6
36 - 24	-692.3	-159.6	373.4
36 - 22	-660.5	-117.6	405.6
36 - 48	-642.1	-109.1	423.8
36 - 30	-611.7	-97.7	434.2
36 - 41	-615.3	-47.8	470.0
36 - 7	-583.3	-36.3	481.6
36 - 59	-569.3	-16.3	496.5
36 - 33	-511.7	-24.8	502.8
36 - 26	-544.6	-11.6	521.5
36 - 38	-540.1	-7.2	515.8
36 - 4	-497.7	-33.3	556.2
36 - 27	-461.5	-71.1	604.4
36 - 5	-447.4	-61.3	618.3
36 - 56	-419.3	-113.7	646.6
36 - 65	-393.2	-205.8	712.2
36 - 23	-361.7	-317.7	604.2
36 - 38	-318.6	484.3	1017.3
36 - 73	-310.9	501.9	1034.9
36 - 17	-29.3	503.5	1036.4
36 - 43	-28.5	501.5	1134.6
36 - 69	-20.1	501.8	1136.0
36 - 10	-139.9	672.6	1203.8
36 - 64	-127.0	766.9	1279.7
36 - 64	-231.1	792.0	1325.0
36 - 8	-283.8	823.3	1381.3
36 - 9	-327.2	920.2	1453.1
36 - 15	-348.6	1079.3	1612.5
36 - 1	-396.1	1154.3	1879.0
36 - 43	-424.3	1157.3	1949.2
36 - 2	-434.9	1167.9	1970.8
36 - 33	-810.6	1345.3	1876.3
36 - 49	-858.7	1391.6	1924.6
36 - 31	-1625.3	-1992.5	-335.5
36 - 30	-1494.7	-1781.8	-338.8
36 - 11	-984.9	-1311.3	-340.4
36 - 51	1002.1	1535.1	2048.1
36 - 21	-1983.1	-1459.2	-917.2
36 - 46	-1833.7	-1320.7	-787.8
36 - 47	-1620.0	-1137.7	-604.7
36 - 34	-1604.0	-1131.0	-598.4
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36 - 34	-1604.0	-1131.0	-598.4
36 - 31	-1625.3	-1992.5	-335.5
36 - 30	-1494.7	-1781.8	-338.8



Categoría Adicional Cálculo						
3 - 26	-630.1	-97.2	435.8	3 - 19	-941.1	-408.2
3 - 29	-623.7	-97.2	436.0	3 - 24	-932.3	-399.4
3 - 94	-618.5	-93.3	447.4	3 - 32	-900.3	-367.4
3 - 6	-583.2	-50.3	482.7	3 - 44	-881.9	-346.9
3 - 77	-547.1	-14.1	518.9	3 - 30	-871.1	-318.6
3 - 36	-504.8	-28.1	561.1	3 - 61	-833.1	-321.2
3 - 43	-376.7	134.3	687.1	3 - 7	-833.1	-390.1
3 - 23	-244.8	286.2	819.1	3 - 39	-809.1	-274.1
3 - 38	-134.3	396.8	731.7	3 - 55	-797.3	-284.6
3 - 93	-119.6	416.4	949.4	3 - 26	-784.4	-251.4
3 - 17	-115.6	417.9	930.9	3 - 29	-779.3	-247.0
3 - 63	-27.0	505.9	1038.9	3 - 9	-772.7	-235.8
3 - 46	-4.6	337.5	1070.3	3 - 6	-737.3	-204.3
3 - 88	54.3	387.3	1120.3	3 - 77	-701.1	-164.8
3 - 10	146.4	679.4	1212.3	3 - 4	-697.3	-134.8
3 - 64	171.3	706.3	1239.4	3 - 26	-699.1	-126.1
3 - 8	209.8	742.6	1275.8	3 - 23	-601.9	-131.9
3 - 9	301.7	834.3	1307.6	3 - 58	-588.4	-244.5
3 - 13	461.0	794.2	1326.9	3 - 95	-570.8	-262.2
3 - 1	310.3	1047.9	1387.3	3 - 17	-269.3	-203.7
3 - 43	338.8	1071.7	1404.7	3 - 8	-181.3	-351.7
3 - 2	549.4	1082.3	1615.3	3 - 88	-149.7	-303.3
3 - 53	725.1	1238.0	1791.0	3 - 28	-99.9	-433.1
3 - 49	773.1	1396.1	1839.0	3 - 10	-7.8	-325.1
3 - 4	807.5	1340.4	1873.4	3 - 64	18.3	352.2
3 - 11	899.0	1431.9	1964.9	3 - 8	35.6	1085.2
3 - 31	916.6	1419.3	1982.8	3 - 15	306.8	839.7
36 - 21	2061.3	-1528.6	-993.5	3 - 45	384.5	917.5
36 - 46	-1932.1	-1399.1	-866.2	3 - 2	393.1	924.1
36 - 47	1749.6	-1216.1	-563.1	3 - 39	370.8	1103.8
36 - 34	-1742.4	-1209.4	-676.3	3 - 49	618.9	1131.8
36 - 31	1703.9	-1170.4	-637.9	3 - 4	653.1	1186.2
36 - 30	-1483.1	-950.3	-417.3	3 - 11	744.7	1277.7
36 - 18	1528.9	796.0	2030.7	3 - 51	762.4	1253.3
36 - 27	1294.3	761.5	228.1	3 - 21	2319.6	-1764.6
36 - 47	-1278.7	-745.7	-313.3	3 - 46	-2190.3	-1657.2
36 - 25	-1254.4	-721.4	-186.3	3 - 27	-2007.1	-1474.1
36 - 10	-1218.4	-567.3	-132.1	3 - 3	-2000.3	-1467.5
36 - 3	-1207.8	-674.6	-141.8	3 - 31	-1961.9	-1429.0
36 - 21	-1179.3	-646.3	-113.6	3 - 50	-1741.2	-1268.1
36 - 37	-1162.8	-629.9	-98.8	3 - 21	-1337.0	-1034.0
36 - 28	-1130.8	-617.9	-84.3	3 - 15	-1337.0	-1034.0
36 - 32	-1114.9	-612.0	-79.0	3 - 27	-1337.2	-1034.1
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36 - 32	-1055.0	-562.0	-29.1	3 - 23	-1312.4	-979.1
36 - 35	-1078.5	-545.3	-12.6	3 - 14	-1470.3	-943.3
36 - 12	-1049.3	-506.0	23.0	3 - 54	-1403.8	-933.9
36 - 15	-1032.8	-499.2	33.1	3 - 53	-1437.4	-904.6
36 - 26	-970.2	-417.2	95.7	3 - 27	-1420.9	-886.0
36 - 22	-935.9	-402.9	150.1	3 - 28	-1408.9	-873.3
36 - 56	-910.3	-377.3	155.6	3 - 52	-1403.0	-870.1
36 - 19	-813.0	-282.1	250.9	3 - 14	-1353.9	-823.0
36 - 24	-806.3	-273.2	259.7	3 - 24	-1335.0	-801.1
36 - 12	-774.2	-241.2	291.7	3 - 9	-1336.7	-801.7
36 - 46	-753.7	-222.8	310.2	3 - 12	-1299.0	-760.0
36 - 30	-745.3	-212.4	320.6	3 - 13	-1290.9	-757.9
36 - 64	-729.0	-196.0	336.9	3 - 20	-1228.3	-653.3
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36 - 56	-687.9	-150.0	383.0	3 - 66	-1168.4	-613.1
36 - 33	-671.4	-138.4	394.5	3 - 19	-1073.1	-540.1
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36 - 24	-653.8	-120.8	412.1	3 - 32	-1033.3	-493.3
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36 - 6	-611.4	-78.4	454.6	3 - 30	-1003.4	-474.0
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36 - 3	-561.1	-28.1	504.8	3 - 7	-955.0	-421.1
36 - 63	-504.8	-12.3	509.4	3 - 54	-941.0	-404.8
36 - 16	-418.3	63.1	418.4	3 - 33	-929.3	-396.3
36 - 64	-415.4	978.4	421.3	3 - 25	-916.1	-383.4
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36 - 49	-743.0	178.0	1810.0	3 - 30	-907.4	-371.7
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36 - 11	707.9	1403.1	1936.8	3 - 6	-763.3	-340.7
36 - 51	833.3	1411.5	1954.4	3 - 14	-722.3	-327.7
36 - 21	-2187.7	-1034.7	-1121.7	3 - 21	-2449.8	-1914.2
36 - 46	-2058.2	-1125.3	-992.3	3 - 46	-2320.4	-1787.4
36 - 47	-1872.2	-1342.2	-809.3	3 - 47	-2137.3	-1654.4
36 - 34	-1668.5	-1335.6	-802.6	36 - 31	-2130.7	-1997.7
36 - 31	-1830.0	-1297.0	-704.1	36 - 30	-1871.4	-1338.5
36 - 30	-1609.3	-1076.3	-543.4	36 - 37	-1682.7	-1149.8
36 - 18	-1453.1	-972.1	-389.1	36 - 37	-1667.0	-1134.0
36 - 27	-1420.6	-987.6	-354.7	36 - 16	-1806.7	-1071.8
36 - 47	-1404.8	-971.9	-338.5	36 - 3	-1390.0	-1043.1
36 - 25	-1380.5	-947.6	-314.6	36 - 33	-1567.8	-1034.8
36 - 16	-1344.6	-811.6	-276.6	36 - 12	-1429.2	-870.3
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36 - 37	-1289.0	-736.0	-223.1	36 - 12	-1324.1	-791.2
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36 - 32	-1271.1	-738.1	-203.2	36 - 19	-1203.3	-747.3
36 - 14	-1224.0	-991.0	-158.1	36 - 24	-1194.5	-681.3
36 - 33	-1221.1	-988.2	-153.2	36 - 33	-1162.5	-629.3
36 - 35	-1204.6	-671.6	-138.7	36 - 46	-1144.0	-611.1
36 - 12	-1167.1	-634.1	-101.1	36 - 34	-1133.6	-606.7
36 - 13	-1159.0	-636.0	-93.0	36 - 6	-999.6	-466.7
36 - 24	-1096.3	-563.4	-30.4	36 - 7	-985.2	-551.3
36 - 22	-1043.0	-529.0	3.9	36 - 39	-949.4	-414.4
36 - 38	-1034.4	-503.5	29.3	36 - 36	-921.2	-388.3
36 - 21	-2432.1	-1879.1	-1206.3	36 - 40	-793.1	-382.2
36 - 46	-2302.8	-1769.4	-1236.8	36 - 27	-663.2	-390.2
36 - 47	-2119.7	-1566.7	-1031.8	36 - 34	-1034.9	-501.9
36 - 31	-2113.1	-1580.1	-1047.2	36 - 6	-999.6	-466.7
36 - 31	-2074.3	-1541.6	-1008.6	36 - 7	-985.2	-430.3
36 - 38	-1833.8	-1320.8	-782.1	36 - 3	-949.4	-414.4
36 - 18	-1699.6	-1158.6	-633.7	36 - 36	-914.7	-418.2
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36 - 6	-1693.3	-1116.4	-581.4	36 - 1	-94.1	-632.6
36 - 23	-1625.0	-1092.1	-559.1	36 - 45	-122.4	-659.3
36 - 16	-1389.1	-1036.1	-523.2	36 - 2	-139.0	-663.9
36 - 3	-1578.4	-1045.3	-512.5	36 - 55	-308.7	-641.6
36 - 55	-1550.2	-1017.2	-484.2	36 - 49	-356.7	-889.7
36 - 51	-1553.3	-1006.0	-467.6	36 - 4	-341.0	-924.0
36 - 24	-1521.5	-988.5	-453.6	36 - 11	-482.6	-1015.5
36 - 52	-1515.6	-982.6	-449.1	36 - 51	-309.2	-1039.2
36 - 18	-2451.3	-1918.4	-1385.6	36 - 18	-21	-119.8
36 - 46	-2321.9	-1769.0	-1256.0	36 - 46	-2138.9	-1603.9
36 - 34	-2131.3	-1599.3	-1066.3	36 - 34	-2131.3	-1599.3
36 - 31	-2093.7	-1560.7	-1027.8	36 - 31	-2093.7	-1560.7
36 - 30	-1872.9	-1340.0	-807.0	36 - 18	-1872.9	-1189.4



Comisiones Admisiones		Comisiones	
17 - 27	-1694.3 -1151.3	168.4	***
17 - 27	-1698.3 -1133.3	-607.6	***
17 - 25	-1594.2 -1111.2	-378.3	***
17 - 18	-1608.2 -1015.3	-942.3	***
17 - 3	-1397.6 -1044.6	-311.7	***
17 - 25	-1569.3 -1036.4	-303.4	***
17 - 27	-1555.1 -1019.7	-466.8	***
17 - 26	-1540.1 -1007.7	-474.7	***
17 - 22	-1534.1 -1001.8	-468.8	***
17 - 14	-1497.7 -934.7	-421.8	***
17 - 22	-1484.8 -912.8	-418.9	***
17 - 12	-1493.8 -867.8	-364.8	***
17 - 13	-1421.6 -849.7	-354.7	***
17 - 20	-1360.0 -827.1	-294.1	***
17 - 22	-1325.7 -782.7	-259.8	***
17 - 05	-1300.1 -761.2	-234.2	***
17 - 19	-1208.8 -719.1	-138.9	***
17 - 24	-1196.0 -681.1	-130.1	***
17 - 32	-1164.0 -621.0	-48.1	***
17 - 45	-1145.3 -612.6	-39.6	***
17 - 30	-1133.2 -602.2	-49.2	***
17 - 04	-1118.8 -563.9	-32.9	***
17 - 7	-1066.8 -535.8	-32.9	***
17 - 39	-972.8 -529.8	-4.8	***
17 - 33	-861.2 -524.2	4.7	
17 - 38	-1048.1 -515.1	17.8	
17 - 29	-1643.6 -510.7	22.3	
17 - 34	-1036.4 -503.3	29.3	
17 - 8	-1001.2 -482.2	64.7	
17 - 27	-981.0 -452.0	100.9	
17 - 3	-930.8 -417.9	113.0	
17 - 35	-922.8 -389.8	143.1	
17 - 23	-796.6 -263.7	267.3	
17 - 26	-664.7 -151.7	401.3	
17 - 36	-352.1 -19.2	513.8	
17 - 25	-334.5 -1.3	531.4	
17 - 05	-445.0 -88.0	621.0	
17 - 06	-413.4 -109.6	652.0	
17 - 26	-343.6 -104.6	702.3	
17 - 16	-221.5 -261.5	794.4	
17 - 21	-244.4 -268.5	821.2	
17 - 9	-200.1 -324.9	857.0	
17 - 15	-116.3 -416.7	944.4	
17 - 1	-43.1 -516.0	1009.0	***
17 - 45	-120.8 -433.7	1186.7	***
17 - 1	-131.4 -664.4	1174.7	***
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17 - 27	-315.2 -885.1	1421.1	***
17 - 4	-389.3 -922.3	1493.4	***
17 - 11	-481.0 -1014.0	1547.0	***
17 - 24	-496.7 -1001.0	1564.6	***
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17 - 45	-2409.9 -1877.0	-1344.0	***
17 - 27	-3226.9 -1693.9	-1160.9	***
17 - 26	-2220.2 -1667.3	-1154.3	***
17 - 31	-2181.7 -1643.7	-1151.8	***
17 - 10	-1960.9 -1428.0	-895.0	***
17 - 18	-1806.7 -1273.8	-740.8	***
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17 - 47	-1756.3 -1223.3	-600.6	***
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17 - 22	-1518.8 -983.8	-532.3	***
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17 - 23	-1448.0 -913.1	-382.4	***
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17 - 04	-1383.1 -553.2	-323.2	***
17 - 19	-292.0 -739.5	-226.5	***
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17 - 01	-1206.8 -671.9	-140.9	***
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17 - 04	-1124.4 -591.5	-58.5	***
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17 - 09	-501.4 -31.6	564.5	
17 - 08	-431.6 -81.4	614.3	
17 - 18	-339.5 -173.3	706.4	
17 - 04	-332.4 -200.5	733.5	
17 - 1	-296.1 -206.9	769.8	
17 - 2	-204.3 -328.7	801.6	
17 - 15	-44.9 -488.0	1021.0	
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17 - 45	-32.8 -563.0	1098.7	***
17 - 3	-43.4 -576.4	1106.4	***
17 - 23	-219.1 -732.1	1285.0	***
17 - 45	-267.2 -800.1	1333.1	***
17 - 4	-301.5 -834.5	1367.7	***
17 - 11	-393.0 -926.0	1439.0	***
17 - 31	-416.7 -943.6	1470.6	***
17 - 21	-3570.4 -2038.0	-1308.4	***
17 - 46	-2441.5 -1908.6	-1375.6	***
17 - 47	-2238.5 -1735.5	-1192.5	***
17 - 34	-2251.8 -1718.9	-1195.9	***
17 - 31	-2213.3 -1680.3	-1187.4	***
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17 - 18	-1838.3 -1305.4	-772.4	***
17 - 27	-1803.9 -1270.9	-758.0	***
17 - 07	-1786.1 -1233.1	-722.2	***
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17 - 5	-1717.2 -1194.2	-651.3	***
17 - 35	-1689.9 -1150.0	-620.0	***
17 - 37	-1673.3 -1139.3	-566.3	***
17 - 38	-1659.2 -1127.3	-594.3	***
17 - 52	-1654.4 -1121.4	-589.4	***
17 - 14	-1607.3 -1074.3	-541.4	***
17 - 02	-1604.4 -1074.4	-558.5	***
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17 - 12	-1550.3 -1017.4	-484.4	***
17 - 15	-1542.1 -1009.3	-476.3	***
17 - 30	-1479.6 -946.6	-413.7	***
17 - 22	-1443.3 -912.3	-379.4	***
17 - 06	-1419.7 -884.8	-353.4	***
17 - 19	-1324.4 -791.1	-208.5	***
17 - 24	-1313.6 -762.7	-249.7	***
17 - 36	-1243.6 -750.6	-217.7	***
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17 - 30	-1254.7 -721.8	-186.8	***
17 - 61	-1253.4 -705.3	-172.3	***
17 - 7	-1206.4 -673.4	-160.4	***
17 - 39	-1192.4 -659.4	-126.4	***
17 - 33	-1193.8 -647.8	-114.9	***
17 - 26	-1167.7 -624.7	-101.8	***
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17 - 19	-1146.0 -623.1	-90.1	***
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17 - 77	-1084.6 -551.6	-182.7	***
17 - 5	-1079.5 -537.5	-4.9	***
17 - 34	-1042.4 -504.4	-25.3	***
17 - 13	-916.2 -383.0	149.7	
17 - 23	-734.3 -231.1	201.6	
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17 - 25	-634.1 -121.1	411.8	
17 - 17	-623.6 -119.6	413.4	
17 - 05	-594.3 -31.6	501.4	
17 - 43	-493.2 -49.5	587.7	
17 - 10	-391.1 -61.4	676.4	
17 - 24	-344.0 -160.0	701.9	
17 - 8	-327.7 -203.3	730.2	
17 - 9	-233.9 -203.0	730.0	
17 - 13	-78.5 -656.4	994.4	
17 - 1	-27.0 -111.3	1049.1	
17 - 43	-1.2 -934.2	1067.1	***
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17 - 49	-221.6 -758.6	1301.2	***
17 - 4	-299.9 -802.9	1375.8	***
17 - 11	-341.5 -894.4	1427.4	***
17 - 31	-379.1 -913.0	1445.0	***
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17 - 46	-2491.3 -1958.0	-1425.4	***
17 - 47	-2506.2 -1775.3	-1212.3	***
17 - 5	-2301.6 -1766.6	-1235.7	***
17 - 31	-2259.0 -1730.1	-1197.1	***
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17 - 16	-1777.6 -1244.7	-711.7	***
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17 - 35	-1738.7 -1205.7	-672.6	***
17 - 37	-1722.0 -1189.0	-656.1	***
17 - 25	-1710.0 -1171.1	-644.1	***
17 - 32	-1704.1 -1171.2	-638.2	***
17 - 14	-1657.0 -1124.1	-591.1	***
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17 - 30	-1627.7 -1104.7	-571.7	***
17 - 12	-1600.1 -1067.2	-534.2	***
17 - 13	-1592.0 -1059.1	-506.1	***
17 - 30	-1529.4 -990.4	-463.5	***
17 - 22	-1493.1 -927.1	-429.1	***
17 - 26	-1499.5 -918.5	-401.6	***
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17 - 32	-1333.4 -800.4	-267.5	***
17 - 48	-1314.9 -782.0	-249.0	***
17 - 20	-1304.3 -771.6	-238.6	***
17 - 6	-1286.2 -755.2	-223.0	***
17 - 7	-1256.1 -723.2	-190.2	***
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17 - 23	-1230.6 -687.6	-164.7	***
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17 - 34	-1209.8 -672.4	-139.9	***
17 - 4	-1170.3 -637.6	-104.6	***
17 - 77	-1134.4 -601.4	-46.6	***
17 - 3	-1120.3 -587.3	-34.3	***
17 - 36	-1092.1 -559.2	-24.2	***
17 - 33	-996.0 -433.1	99.9	
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17 - 30	-703.9 -170.9	362.1	
17 - 17	-702.3 -109.4	365.6	
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17 - 54	-2393.7	-1860.7	-1327.6
17 - 31	-2355.1	-1822.2	-1269.2
17 - 10	-2154.4	-1691.4	-1096.3
17 - 18	-1960.2	-1447.2	-914.3
17 - 27	-1943.7	-1412.8	-879.4
17 - 17	-1930.0	-1397.0	-854.0
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17 - 16	-1869.3	-1345.3	-804.6
17 - 24	-1837.5	-1315.3	-781.6
17 - 12	-1802.1	-1293.7	-741.5
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17 - 28	-1700.9		



Comprobación Admisional Cálculo										
64 - 75 - 923.0	-299.1	242.9	9 - 39 - 1460.3	-971.3	-394.4	***	1 - 32 - 1800.6	-1203.1	-721.6	***
64 - 17 - 911.5	-284.5	244.4	64 - 64 - 1453.1	-993.0	-387.2	***	1 - 48 - 1783.1	-1241.6	-705.2	***
64 - 83 - 733.3	-200.3	332.4	9 - 5 - 1417.9	-924.9	-351.9	***	1 - 30 - 1771.7	-1231.3	-684.8	***
64 - 69 - 701.3	-109.0	356.0	9 - 77 - 1381.7	-887.7	-312.8	***	1 - 61 - 1793.6	-1210.9	-678.4	***
64 - 68 - 634.6	-119.2	413.6	9 - 3 - 1307.0	-854.6	-301.7	***	1 - 7 - 1723.4	-1184.9	-684.6	***
64 - 70 - 569.0	-27.1	505.9	9 - 34 - 1339.3	-804.3	-273.9	***	1 - 39 - 1709.3	-1170.9	-632.4	***
64 - 8 - 496.6	-36.3	549.1	9 - 63 - 1213.1	-804.6	-147.4	***	1 - 33 - 1697.8	-1151.3	-659.8	***
64 - 9 - 404.8	128.1	661.1	9 - 23 - 1081.4	-584.4	-13.3	***	1 - 24 - 1664.7	-1146.2	-607.7	***
64 - 19 - 243.5	287.5	820.1	9 - 36 - 968.6	-435.6	97.1		1 - 29 - 1640.2	-1141.7	-603.2	***
64 - 1 - 196.0	342.9	881.0	9 - 17 - 949.6	-416.7	116.3		1 - 94 - 1673.0	-1134.5	-396.1	***
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64 - 33 - 118.6	551.1	1084.3	9 - 69 - 780.3	-247.3	285.6		1 - 5 - 1597.9	-1049.0	-510.3	***
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64 - 4 - 101.0	653.9	1195.9	9 - 64 - 661.1	-128.1	404.8		1 - 63 - 1433.2	-894.7	-336.3	***
64 - 11 - 192.3	713.3	1284.4	9 - 8 - 624.8	-61.8	481.1		1 - 23 - 1301.3	-762.8	-294.3	***
64 - 24 - 210.1	749.1	1276.0	9 - 13 - 573.6	159.4	962.3		1 - 38 - 1186.7	-650.3	111.7	***
9 - 21 - 2776.2	-2243.3	-1710.3	9 - 1 - 326.1	214.4	722.9		1 - 97 - 1171.1	-632.6	-94.1	***
9 - 46 - 3546.8	-2113.8	-1590.9	9 - 43 - 293.9	227.1	770.1		1 - 17 - 1169.3	-631.1	-92.6	***
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9 - 57 - 1993.4	-1460.4	-927.9	9 - 27 - 2360.3	1722.4	-1194.4	***	1 - 9 - 752.9	-211.4	324.1	
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9 - 60 - 1793.2	-1204.0	-727.2	9 - 2 - 2061.7	1590.7	-997.8	***	9 - 45 - 2975.7	-2442.7	1909.3	***
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9 - 20 - 1583.9	-1131.9	-619.0	9 - 12 - 2006.5	1473.0	-940.9	***	9 - 31 - 2747.3	-2214.5	-1661.3	***
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9 - 19 - 1529.7	-996.7	-463.8	9 - 32 - 1916.8	-1571.8	-904.8	***	9 - 27 - 2384.1	-1805.1	-1271.1	***
9 - 24 - 1529.9	-987.9	-433.0	9 - 16 - 2061.7	1590.7	-997.8	***	9 - 47 - 2323.3	-1789.3	-1296.9	***
9 - 32 - 1489.9	-955.9	-425.0	9 - 12 - 2006.5	1473.0	-940.9	***	9 - 25 - 2290.0	-1765.0	-1232.1	***
9 - 48 - 1470.4	-937.5	-404.3	9 - 13 - 1952.7	-1403.7	-908.8	***	9 - 16 - 1262.0	-1229.1	-1196.1	***
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9 - 61 - 1443.7	-910.7	-377.8	9 - 22 - 1901.7	-1568.8	-835.8	***	9 - 53 - 2239.1	-1690.1	-1137.1	***
9 - 7 - 1411.6	-897.8	-345.7	9 - 23 - 1920.1	-1571.8	-835.8	***	9 - 57 - 2206.4	-1673.5	-1140.3	***
9 - 59 - 1597.7	-884.7	-331.7	9 - 24 - 1976.1	-1543.2	-810.2	***	9 - 26 - 2194.4	-1661.5	-1128.5	***
9 - 33 - 1586.1	-853.4	-320.4	9 - 19 - 1780.9	-1527.9	-714.9	***	9 - 52 - 2188.3	-1655.6	-1122.6	***
9 - 26 - 1572.9	-840.6	-307.0	9 - 24 - 1772.0	-1529.1	-706.1	***	9 - 14 - 2141.3	-1608.5	-1075.5	***
9 - 29 - 1568.3	-833.3	-302.6	9 - 20 - 1624.1	-1591.2	-674.1	***	9 - 63 - 2136.0	-1605.0	-1072.7	***
9 - 34 - 1561.3	-828.3	-293.4	9 - 29 - 1619.7	-1606.7	-653.7	***	9 - 40 - 2122.1	-1589.1	-1036.1	***
9 - 6 - 1526.0	-793.1	-280.1	9 - 48 - 1731.6	-1684.6	-635.7	***	9 - 12 - 2084.3	-1554.6	-1048.9	***
9 - 77 - 1299.9	-759.8	-224.0	9 - 30 - 1711.2	-1674.1	-643.3	***	9 - 13 - 2096.4	-1543.5	-1010.5	***
9 - 3 - 1275.8	-742.8	-201.6	9 - 51 - 1694.9	-1616.9	-618.9	***	9 - 20 - 2043.8	-1480.8	-947.2	***
9 - 36 - 1247.6	-714.7	-181.7	9 - 7 - 1662.8	-1629.8	-596.9	***	9 - 22 - 1797.9	-1446.5	-913.5	***
9 - 63 - 1121.3	-588.6	-55.6	9 - 59 - 1648.5	-1611.8	-587.9	***	9 - 46 - 1953.9	-1420.9	-888.0	***
9 - 23 - 598.6	-456.6	76.3	9 - 33 - 1637.2	-1604.3	-571.3	***	9 - 19 - 1858.6	-1325.7	-792.7	***
9 - 50 - 877.0	-344.0	198.9	9 - 26 - 1624.1	-1601.2	-552.2	***	9 - 34 - 1859.8	-1316.8	-783.9	***
9 - 53 - 859.4	-326.6	206.6	9 - 29 - 1619.7	-1606.7	-531.7	***	9 - 32 - 1817.8	-1284.8	-751.9	***
9 - 17 - 857.8	-324.9	206.1	9 - 34 - 1612.5	-1607.5	-506.6	***	9 - 48 - 1799.3	-1266.4	-733.4	***
9 - 45 - 769.8	-306.1	206.1	9 - 17 - 1609.0	-1570.0	-451.0	***	9 - 30 - 1788.9	-1256.0	-723.0	***
9 - 69 - 733.2	-209.3	327.7	9 - 43 - 1326.9	-994.0	-461.0	***	9 - 41 - 1772.4	-1239.6	-706.7	***
9 - 3 - 639.5	-195.5	377.5	9 - 56 - 1498.8	-961.9	-432.9	***	9 - 47 - 1740.3	-1207.6	-674.6	***
9 - 10 - 594.8	-63.4	469.5	9 - 38 - 429.5	-406.7	126.3		9 - 59 - 1726.3	-1193.6	-660.6	***
9 - 64 - 560.3	-36.3	496.6	9 - 19 - 487.5	-431.4	218.4		9 - 33 - 1715.0	-1182.0	-649.1	***
9 - 9 - 441.1	91.8	624.8	9 - 64 - 520.4	-287.5	245.5		9 - 36 - 1701.9	-1160.9	-635.9	***
9 - 15 - 251.8	251.2	784.1	9 - 8 - 384.1	-231.2	281.8		9 - 49 - 1697.4	-1164.4	-631.3	***
9 - 1 - 252.5	906.2	844.7	9 - 17 - 492.3	-195.4	373.8		9 - 54 - 1693.2	-1157.3	-624.3	***
9 - 45 - 204.0	328.9	861.9	9 - 15 - 455.2	-232.0	44.9		9 - 17 - 1180.7	-653.8	-120.4	***
9 - 3 - 193.4	395.5	871.9	9 - 1 - 455.2	-232.0	71.8		9 - 40 - 1098.7	-565.8	-32.4	***
9 - 33 - 177.7	515.2	1042.2	9 - 2 - 446.6	-28.8	613.3		9 - 59 - 1067.1	-534.2	-1.2	***
9 - 49 - 50.3	563.3	1095.2	9 - 33 - 268.9	-264.1	797.0		9 - 38 - 1047.4	-484.4	48.1	
9 - 4 - 56.4	507.6	1130.6	9 - 49 - 376.8	-223.0	1691.8		9 - 10 - 973.3	-392.3	140.6	
9 - 11 - 156.2	689.1	1221.1	9 - 11 - 413.0	-438.0	707.9		9 - 54 - 988.2	-365.1	167.7	
9 - 21 - 173.8	706.4	1239.7	9 - 31 - 77.6	-435.6	958.6		9 - 9 - 801.9	-328.9	204.0	
9 - 21 - 2868.0	-2353.1	-1802.1	9 - 21 - 3087.9	-2349.4	-1011.0	***	9 - 15 - 610.7	-22.7	455.2	
9 - 46 - 2738.6	-2203.6	-1672.7	9 - 16 - 459.3	-2430.0	-1881.3	***	9 - 1 - 591.2	-22.7	515.0	
9 - 47 - 2553.5	-2028.6	-1495.9	9 - 47 - 2774.3	-2270.7	-1598.3	***	9 - 2 - 522.3	-10.6	543.5	
9 - 54 - 2348.9	-2019.3	-1483.0	9 - 1 - 18.6	-276.0	241.4		9 - 53 - 346.7	-186.3	719.1	
9 - 31 - 2510.4	-1977.4	-1444.4	9 - 24 - 3766.8	-2230.3	-1691.8	***	9 - 49 - 298.6	-234.4	767.3	
9 - 50 - 2209.4	-1767.6	-1223.7	9 - 18 - 3235.5	-1816.9	-1278.4	***	9 - 4 - 284.3	-268.7	801.5	
9 - 18 - 2133.7	-1606.3	-1063.3	9 - 27 - 320.9	-1782.4	-1240.9	***	9 - 31 - 172.7	-360.2	893.3	
9 - 21 - 2101.9	-1508.0	-1035.0	9 - 1 - 97.6	-260.6	107.9		9 - 51 - 155.1	-377.8	910.8	
9 - 67 - 2085.2	-1553.2	-1019.3	9 - 23 - 2205.9	-1742.3	-1203.8	***	9 - 21 - 3415.7	-2928.3	-2049.3	***
9 - 25 - 2060.0	-1527.9	-995.0	9 - 16 - 2244.8	-170						

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Comisiones Aprobadas:		Comisiones:			
2 - 60	2132.7 - 1399.7 - 1066.8	444	49 - 20	-2532.3 - 1999.4 - 1466.4	***
2 - 12	2093.2 - 1367.3 - 1029.3	444	49 - 16	-2498.4 - 1983.4 - 1430.3	***
2 - 13	7601.0 - 1356.3 - 1021.1	444	49 - 3	-2485.7 - 1932.8 - 1419.9	***
2 - 20	2024.4 - 1491.5 - 938.3	444	49 - 53	-2437.3 - 1924.5 - 1381.6	***
2 - 22	1590.0 - 1437.1 - 924.2	444	49 - 77	-2463.8 - 1907.9 - 1374.9	***
2 - 24	1869.2 - 1334.3 - 903.3	444	49 - 30	-2438.9 - 1895.8 - 1362.9	***
2 - 25	1650.4 - 1127.3 - 774.3	444	49 - 72	-2422.9 - 1889.9 - 1337.9	***
2 - 32	1628.4 - 1295.3 - 762.3	444	49 - 14	-2375.8 - 1842.9 - 1309.9	***
2 - 45	1601.9 - 1277.0 - 744.0	444	49 - 42	-2372.9 - 1801.0 - 1307.0	***
2 - 50	1795.6 - 1266.6 - 731.6	444	49 - 60	-2356.4 - 1823.5 - 1290.5	***
3 - 91	1783.2 - 1259.3 - 717.3	444	49 - 12	-2318.9 - 1865.9 - 1233.0	***
3 - 97	1751.2 - 1216.3 - 689.2	444	49 - 13	-2310.8 - 1777.0 - 1244.9	***
3 - 30	1737.3 - 1204.3 - 671.2	444	49 - 20	-2248.2 - 1715.2 - 1182.2	***
3 - 33	1723.6 - 1192.7 - 659.7	444	49 - 22	-2113.7 - 1880.9 - 1147.9	***
3 - 36	1711.5 - 1179.5 - 646.6	444	49 - 48	-2188.3 - 1855.3 - 1122.4	***
3 - 59	1708.0 - 1173.1 - 642.1	444	49 - 19	-2093.0 - 1860.9 - 1027.1	***
3 - 94	1700.8 - 1167.9 - 634.9	444	49 - 34	-2084.2 - 1851.2 - 1018.2	***
3 - 6	1662.6 - 1132.6 - 599.7	444	49 - 72	-2052.8 - 1819.2 - 986.2	***
3 - 77	1625.4 - 1094.4 - 563.3	444	49 - 48	-2033.7 - 1800.7 - 967.8	***
3 - 3	1615.3 - 1087.3 - 534.9	444	49 - 30	-2023.5 - 1849.3 - 957.4	***
3 - 56	1587.2 - 1054.3 - 521.3	444	49 - 41	-2007.0 - 1874.0 - 941.1	***
3 - 63	1461.0 - 928.1 - 399.1	444	49 - 7	-1974.9 - 1842.0 - 809.0	***
3 - 23	1212.4 - 796.2 - 263.2	444	49 - 39	-1940.9 - 1827.9 - 895.1	***
3 - 38	1216.3 - 683.4 - 150.6	444	49 - 33	-1949.4 - 1816.4 - 893.4	***
3 - 93	1198.9 - 667.9 - 133.0	444	49 - 38	-1935.2 - 1843.3 - 870.3	***
3 - 17	1197.4 - 664.4 - 131.4	444	49 - 29	-1931.8 - 1838.8 - 865.9	***
3 - 83	1105.4 - 516.4 - 43.4	444	49 - 94	-1924.6 - 1839.1 - 835.7	***
3 - 95	1077.8 - 544.8 - 11.9	444	49 - 49	-1889.3 - 1836.4 - 833.4	***
3 - 55	1022.0 - 445.0 - 37.9	444	49 - 27	-1853.1 - 1832.5 - 787.3	***
3 - 10	933.9 - 402.9 - 150.0	444	49 - 5	-1839.0 - 1806.1 - 773.1	***
3 - 66	901.8 - 373.9 - 157.1	444	49 - 56	-1819.9 - 1786.8 - 745.0	***
3 - 8	871.5 - 334.3 - 193.4	444	49 - 63	-1804.8 - 1781.8 - 718.9	***
3 - 9	780.7 - 247.7 - 265.2	444	49 - 25	-1532.9 - 1819.9 - 485.7	***
3 - 15	421.3 - 48.4 - 44.6	444	49 - 38	-1440.3 - 907.3 - 374.3	***
3 - 1	371.8 - 33.3 - 305.1	444	49 - 55	-1422.6 - 889.7 - 356.7	***
3 - 65	344.6 - 10.4 - 522.3	444	49 - 17	-1421.1 - 885.1 - 352.1	***
3 - 33	337.3 - 173.7 - 708.6	444	49 - 83	-1333.1 - 800.1 - 287.2	***
3 - 49	309.3 - 223.7 - 756.7	444	49 - 49	-1301.5 - 748.6 - 235.6	***
3 - 4	274.9 - 258.8 - 791.0	444	49 - 38	-1251.7 - 718.8 - 185.8	***
3 - 14	281.4 - 249.6 - 382.6	444	49 - 10	-1159.6 - 676.7 - 117.7	***
3 - 51	165.7 - 361.2 - 909.1	444	49 - 65	-1132.6 - 599.6 - 106.6	***
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30 - 46	3162.0 - 2629.0 - 2290.1	444	49 - 9	-1004.4 - 471.5 - 31.5	***
30 - 47	2978.9 - 2446.0 - 1919.0	444	49 - 13	-843.1 - 312.1 - 22.0	***
30 - 58	2972.3 - 2439.0 - 1905.4	444	49 - 1	-793.6 - 237.1 - 201.4	***
30 - 31	2533.8 - 2490.8 - 1697.4	444	49 - 45	-767.3 - 234.4 - 299.6	***
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30 - 18	2551.8 - 2025.9 - 1492.5	444	49 - 35	-501.6 - 48.1 - 484.9	***
30 - 27	2324.4 - 1991.4 - 1456.3	444	49 - 4	-508.6 - 34.3 - 567.3	***
30 - 57	2508.6 - 1975.4 - 1442.7	444	49 - 11	-497.1 - 123.9 - 658.8	***
30 - 25	2464.3 - 1951.4 - 1418.4	444	49 - 31	-369.3 - 143.5 - 676.4	***
30 - 16	2441.3 - 1914.5 - 1382.4	444	49 - 21	-3373.8 - 2840.9 - 2307.9	***
30 - 3	2433.7 - 1904.7 - 1371.7	444	49 - 46	-3244.4 - 2711.4 - 2178.5	***
30 - 56	2405.4 - 1876.3 - 1343.5	444	49 - 47	-3061.1 - 2324.4 - 1995.4	***
30 - 97	2392.8 - 1859.3 - 1326.6	444	49 - 54	-3054.7 - 2321.7 - 1988.6	***
30 - 28	2319.7 - 1847.8 - 1314.3	444	49 - 31	-3016.1 - 2381.1 - 1950.2	***
30 - 52	2374.8 - 1841.9 - 1304.6	444	49 - 50	-2994.4 - 2262.5 - 1792.9	***
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30 - 60	2308.4 - 1771.4 - 1242.5	444	49 - 47	-2591.0 - 2058.0 - 1525.1	***
30 - 12	2270.8 - 1737.9 - 1208.9	444	49 - 23	-2586.7 - 2037.7 - 1500.0	***
30 - 13	2262.7 - 1729.6 - 1195.8	444	49 - 14	-2303.7 - 1997.8 - 1464.8	***
30 - 20	2200.1 - 1667.1 - 1134.2	444	49 - 3	-2320.0 - 1987.1 - 1434.1	***
30 - 22	2163.8 - 1613.8 - 1099.3	444	49 - 35	-2491.8 - 1858.8 - 1425.9	***
30 - 45	2166.2 - 1667.2 - 1074.3	444	49 - 37	-2473.1 - 1942.2 - 1409.2	***
30 - 19	2044.9 - 1512.0 - 979.0	444	49 - 28	-2463.1 - 1930.2 - 1398.2	***
30 - 36	2036.1 - 1503.4 - 970.2	444	49 - 14	-2410.1 - 1877.2 - 1364.2	***
30 - 38	2004.1 - 1471.1 - 945.4	444	49 - 42	-2407.3 - 1874.3 - 1341.4	***
30 - 48	1985.4 - 1432.7 - 919.7	444	49 - 66	-2390.6 - 1857.8 - 1324.6	***
30 - 50	1973.3 - 1443.3 - 900.3	444	49 - 12	-2353.2 - 1820.3 - 1247.3	***
30 - 56	1958.9 - 1426.0 - 893.0	444	49 - 43	-2345.1 - 1812.2 - 1279.2	***
30 - 7	1926.9 - 1393.9 - 860.9	444	49 - 26	-2325.5 - 1749.5 - 1316.6	***
30 - 59	1912.8 - 1379.8 - 845.9	444	49 - 42	-2248.2 - 1715.2 - 1182.2	***
30 - 53	1901.3 - 1368.3 - 835.4	444	49 - 19	-2127.3 - 1954.3 - 1061.4	***
30 - 29	1883.7 - 1339.2 - 822.1	444	49 - 44	-2127.3 - 1957.8 - 1052.6	***
30 - 25	1853.7 - 1330.8 - 817.8	444	49 - 42	-2086.5 - 1953.5 - 1020.8	***
30 - 34	1876.3 - 1343.6 - 810.6	444	49 - 48	-2058.6 - 1533.0 - 1022.1	***
30 - 4	1841.3 - 1308.3 - 775.3	444	49 - 30	-2057.6 - 1524.7 - 991.7	***
30 - 77	1805.1 - 1272.1 - 739.2	444	49 - 41	-2041.3 - 1508.3 - 973.4	***
30 - 5	1791.0 - 1258.0 - 725.1	444	49 - 7	-2009.2 - 1476.3 - 945.3	***
30 - 38	1762.9 - 1229.5 - 695.6	444	49 - 59	-1955.2 - 1862.3 - 929.3	***
30 - 50	1626.7 - 1193.4 - 707.0	444	49 - 33	-1983.7 - 1430.7 - 917.8	***
30 - 23	1544.8 - 971.8 - 438.9	444	49 - 26	-1970.6 - 1437.6 - 904.6	***
30 - 38	1522.3 - 839.3 - 326.3	444	49 - 29	-1950.1 - 1433.1 - 902.2	***
30 - 95	1524.6 - 841.6 - 308.7	444	49 - 54	-1928.2 - 1426.8 - 893.0	***
30 - 17	1575.0 - 840.1 - 307.1	444	49 - 6	-1923.7 - 1390.7 - 857.7	***
30 - 63	1545.0 - 793.3 - 219.1	444	49 - 77	-1697.5 - 1354.5 - 821.6	***
30 - 36	1533.4 - 720.3 - 187.5	444	49 - 5	-1873.4 - 1304.0 - 807.5	***
30 - 36	1505.7 - 470.7 - 137.4	444	49 - 36	-1845.3 - 1312.3 - 779.3	***
30 - 10	1111.8 - 378.6 - 45.2	444	49 - 63	-1719.1 - 1186.2 - 653.2	***
30 - 58	1084.3 - 331.5 - 18.6	444	49 - 23	-1587.2 - 1054.2 - 521.3	***
30 - 8	1048.2 - 313.2 - 17.7	444	49 - 38	-1074.0 - 941.0 - 406.7	***
30 - 9	956.4 - 423.4 - 109.5	444	49 - 43	-1057.0 - 924.0 - 391.0	***
30 - 13	977.0 - 264.1 - 208.3	444	49 - 17	-1433.4 - 922.3 - 389.3	***
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30 - 65	719.3 - 186.3 - 346.7	444	49 - 49	-1335.6 - 802.9 - 269.9	***
30 - 2	708.6 - 173.7 - 337.3	444	49 - 66	-1295.1 - 753.1 - 220.1	***
30 - 49	484.9 - 48.1 - 361.0	444	49 - 10	-1194.0 - 661.0 - 128.1	***
30 - 4	450.6 - 82.4 - 613.1	444	49 - 64	-1156.9 - 633.9 - 101.0	***
30 - 11	359.0 - 173.5 - 706.9	444	49 - 8	-1150.6 - 597.6 - 64.6	***
30 - 36	341.4 - 191.3 - 724.3	444	49 - 9	-1038.8 - 505.6 - 27.2	***
49 - 28	3339.3 - 2806.5 - 2273.6	1**	49 - 13	-879.4 - 348.4 - 185.5	***
49 - 46	3210.1 - 2677.1 - 2144.1	1**	49 - 1	-823.9 - 291.4 - 247.1	***
49 - 49	3021.0 - 2494.0 - 1990.1	1**	49 - 45	-801.6 - 266.7 - 204.3	***
49 - 36	3029.4 - 2448.9 - 1994.0	1**	49 - 2	-791.0 - 255.1 - 274.9	***
49 - 34	2981.4 - 2448.9 - 1915.9	1**	49 - 33	-615.3 - 82.4 - 450.6	***
49 - 35	2761.0 - 2258.1 - 1695.2	1**	49 - 49	-567.5 - 34.3 - 498.6	***
49 - 18	2606.9 - 2073.5 - 1541.0	1**	49 - 11	-841.4 - 91.3 - 824.5	***
49 - 22	2572.4 - 2039.5 - 1506.5	1**	49 - 51	-833.8 - 199.2 - 582.1	***
49 - 57	2556.6 - 2071.7 - 1499.7	1**	49 - 1 - 31 - 32 - 33 - 34 - 35 - 36 - 37 - 38 - 39 - 40 - 41 - 42 - 43 - 44 - 45 - 46 - 47 - 48 - 49 - 50 - 51 - 52 - 53 - 54 - 55 - 56 - 57 - 58 - 59 - 60 - 61 - 62 - 63 - 64 - 65 - 66 - 67 - 68 - 69 - 70 - 71 - 72 - 73 - 74 - 75 - 76 - 77 - 78 - 79 - 80 - 81 - 82 - 83 - 84 - 85 - 86 - 87 - 88 - 89 - 90 - 91 - 92 - 93 - 94 - 95 - 96 - 97 - 98 - 99 - 100 - 101 - 102 - 103 - 104 - 105 - 106 - 107 - 108 - 109 - 110 - 111 - 112 - 113 - 114 - 115 - 116 - 117 - 118 - 119 - 120 - 121 - 122 - 123 - 124 - 125 - 126 - 127 - 128 - 129 - 130 - 131 - 132 - 133 - 134 - 135 - 136 - 137 - 138 - 139 - 140 - 141 - 142 - 143 - 144 - 145 - 146 - 147 - 148 - 149 - 150 - 151 - 152 - 153 - 154 - 155 - 156 - 157 - 158 - 159 - 160 - 161 - 162 - 163 - 164 - 165 - 166 - 167 - 168 - 169 - 170 - 171 - 172 - 173 - 174 - 175 - 176 - 177 - 178 - 179 - 180 - 181 - 182 - 183 - 184 - 185 - 186 - 187 - 188 - 189 - 190 - 191 - 192 - 193 - 194 - 195 - 196 - 197 - 198 - 199 - 200 - 201 - 202 - 203 - 204 - 205 - 206 - 207 - 208 - 209 - 210 - 211 - 212 - 213 - 214 - 215 - 216 - 217 - 218 - 219 - 220 - 221 - 222 - 223 - 224 - 225 - 226 - 227 - 228 - 229 - 230 - 231 - 232 - 233 - 234 - 235 - 236 - 237 - 238 - 239 - 240 - 241 - 242 - 243 - 244 - 245 - 246 - 247 - 248 - 249 - 250 - 251 - 252 - 253 - 254 - 255 - 256 - 257 - 258 - 259 - 260 - 261 - 262 - 263 - 264 - 265 - 266 - 267 - 268 - 269 - 270 - 271 - 272 - 273 - 274 - 275 - 276 - 277 - 278 - 279 - 280 - 281 - 282 - 283 - 284 - 285 - 286 - 287 - 288 - 289 - 290 - 291 - 2		

Comparisons Among Cell Lines									
SI - 45	110.8	377.8	155.1	46 - 29	-215.8	193.3	604.3	25 - 21	-401.3
SI - 3	-900.2	367.2	163.7	46 - 20	-213.3	193.9	603.1	23 - 24	-446.1
SI - 53	-724.3	-191.3	341.4	46 - 12	-204.3	204.9	614.1	23 - 23	-421.9
SI - 49	-678.4	-143.3	389.5	46 - 32	-195.7	213.3	622.7	23 - 21	-367.3
SI - 4	-642.1	-107.2	232.6	46 - 13	-184.3	225.0	634.2	23 - 20	-343.5
SI - 11	-550.0	-17.0	319.3	46 - 49	-197.9	301.4	710.6	23 - 19	-278.3
End Comparisons Among Cell Lines				46 - 51	-77.3	331.6	740.6	23 - 18	-205.3
Begin Comparisons Among Cell Lines				46 - 47	-77.6	331.6	740.6	23 - 17	-250.3
End Comparisons Among Cell Lines				46 - 31	-13.4	395.8	805.0	23 - 16	-241.1
Begin Comparisons Among Cell Lines				46 - 54	78.6	487.8	897.0	23 - 15	-232.6
Number of observations in data set = 1524				46 - 10	90.3	497.9	908.7	23 - 14	-221.1
Analysis of Variance Procedure				46 - 3	94.4	503.6	912.3	23 - 13	-214.1
Dependent Variable: Abnormal Reticular Cell Area				46 - 35	1001.6	509.8	919.0	23 - 12	-144.7
N = 123 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18				46 - 28	128.4	337.6	546.8	23 - 11	-114.8
19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 45 46 47				46 - 32	149.3	334.3	567.7	23 - 10	-114.1
48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 66				46 - 37	159.9	346.1	578.3	23 - 9	-104.4
67 68 69 70 71 72 73 74 75 76 77 78 79 79 80 81 82				46 - 36	222.7	631.9	1041.1	23 - 8	-41.7
83 84 85 86 87 88 89 89 90 91 92 93 94 95 96 97 98				46 - 60	244.9	654.1	1063.3	23 - 7	-40.9
Model: 60_43<46>017_67575900_7071133.6752997				46 - 18	337.3	730.8	1164.2	23 - 6	-37.3
P Value Pr>F				46 - 50	425.0	834.2	1243.4	23 - 5	-36.7
13.00 0.0001				46 - 24	442.4	852.9	1261.2	23 - 4	-36.7
46 - 26	486.0	993.8	1304.4	23 - 3	-36.7				
46 - 55	514.2	921.4	1332.6	23 - 2	-36.7				
46 - 70	525.3	934.5	1343.7	23 - 1	-36.7				
46 - 19	533.3	942.5	1351.7	23 - 0	-36.7				
46 - 21	552.1	961.3	1370.3	23 - 10	-208.0				
46 - 94	557.3	964.3	1373.7	23 - 9	-196.1				
46 - 6	594.4	1001.6	1413.3	23 - 8	-183.4				
46 - 53	595.3	1003.1	1414.6	23 - 7	-175.0				
46 - 3	610.1	1015.3	1428.3	23 - 6	-165.8				
46 - 55	630.4	1035.6	1448.3	23 - 5	-157.3				
46 - 77	637.0	1046.2	1454.9	23 - 4	-157.3				
46 - 23	679.3	1085.1	1485.3	23 - 3	-149.3				
46 - 58	685.5	1094.2	1503.4	23 - 2	-149.3				
46 - 17	693.3	1102.5	1511.7	23 - 1	-149.3				
NOTE: This test controls the type I comparison-wise error rate not the experimentwise error rate.				46 - 10	733.4	1114.8	1522.0	23 - 0	-149.3
Alpha=0.05 Confidence=0.95 df=1462 MSSE=543953.2				46 - 56	846.5	1256.1	1658.9	23 - 9	-147.6
Critical Value of T= -1.95159				46 - 8	976.9	1375.9	1788.4	23 - 8	-139.1
Comparisons significant at 0.05 level are indicated by ***.				46 - 64	1016.7	1415.9	1833.1	23 - 7	-131.2
Comparisons_Abnormal Cell Area:				46 - 9	1032.7	1441.9	1851.1	23 - 6	-123.3
Lower Dif. Upper				46 - 15	1078.3	1487.6	1968.6	23 - 5	-115.9
C% Confid. Bel. Credib.				46 - 45	1117.1	1536.9	1986.1	23 - 4	-107.3
Comput. Limit Maxes Limit				46 - 1	1123.1	1531.1	1981.3	23 - 3	-101.3
21 - 46	394.1	15.2	424.4	21 - 12	229.1	929.3	449.3	23 - 2	-92.4
21 - 23	-364.9	40.3	449.3	21 - 25	-275.6	181.6	391.8	23 - 1	-84.6
21 - 14	-213.4	55.1	661.3	21 - 29	-198.6	210.6	619.8	23 - 0	-76.8
21 - 34	-198.1	211.1	501.3	21 - 15	-193.9	212.3	592.0	23 - 9	-68.1
21 - 16	-105.5	514.7	923.0	21 - 16	-105.5	514.7	923.0	23 - 8	-60.1
21 - 3	109.6	518.0	928.0	21 - 53	111.0	520.9	932.0	23 - 7	-52.1
21 - 30	110.5	527.7	935.7	21 - 28	113.3	532.7	937.8	23 - 6	-44.6
21 - 22	114.3	537.8	937.8	21 - 27	115.3	537.8	937.8	23 - 5	-37.1
21 - 32	116.6	541.6	938.0	21 - 31	118.1	541.6	938.0	23 - 4	-30.6
21 - 31	118.1	547.8	938.0	21 - 35	121.8	552.7	943.7	23 - 3	-23.7
21 - 34	121.8	557.3	943.7	21 - 39	123.8	567.9	953.7	23 - 2	-16.8
21 - 35	123.8	567.9	953.7	21 - 30	125.8	578.9	963.7	23 - 1	-9.9
21 - 39	125.8	587.0	963.7	21 - 34	127.8	588.4	973.7	23 - 0	-2.9
21 - 31	127.8	597.0	973.7	21 - 29	129.8	607.0	983.0	23 - 9	-1.1
21 - 37	129.8	604.3	983.3	21 - 33	131.8	617.1	993.3	23 - 8	-0.3
21 - 30	131.8	617.1	993.3	21 - 26	133.3	627.1	1004.3	23 - 7	-0.1
21 - 29	133.3	627.1	1004.3	21 - 21	146.3	640.3	1008.9	23 - 6	-0.1
21 - 20	146.3	640.3	1008.9	21 - 19	147.3	640.3	1009.9	23 - 5	-0.1
21 - 18	147.3	640.3	1009.9	21 - 17	148.3	640.3	1010.9	23 - 4	-0.1
21 - 16	148.3	640.3	1010.9	21 - 15	149.3	640.3	1011.9	23 - 3	-0.1
21 - 15	149.3	640.3	1011.9	21 - 14	150.3	640.3	1012.9	23 - 2	-0.1
21 - 14	150.3	640.3	1012.9	21 - 13	151.3	640.3	1013.9	23 - 1	-0.1
21 - 13	151.3	640.3	1013.9	21 - 12	152.3	640.3	1014.9	23 - 0	-0.1
21 - 12	152.3	640.3	1014.9	21 - 11	153.3	640.3	1015.9	23 - 9	-0.1
21 - 11	153.3	640.3	1015.9	21 - 10	154.3	640.3	1016.9	23 - 8	-0.1
21 - 10	154.3	640.3	1016.9	21 - 9	155.3	640.3	1017.9	23 - 7	-0.1
21 - 9	155.3	640.3	1017.9	21 - 8	156.3	640.3	1018.9	23 - 6	-0.1
21 - 8	156.3	640.3	1018.9	21 - 7	157.3	640.3	1019.9	23 - 5	-0.1
21 - 7	157.3	640.3	1019.9	21 - 6	158.3	640.3	1020.9	23 - 4	-0.1
21 - 6	158.3	640.3	1020.9	21 - 5	159.3	640.3	1021.9	23 - 3	-0.1
21 - 5	159.3	640.3	1021.9	21 - 4	160.3	640.3	1022.9	23 - 2	-0.1
21 - 4	160.3	640.3	1022.9	21 - 3	161.3	640.3	1023.9	23 - 1	-0.1
21 - 3	161.3	640.3	1023.9	21 - 2	162.3	640.3	1024.9	23 - 0	-0.1
21 - 2	162.3	640.3	1024.9	21 - 1	163.3	640.3	1025.9	23 - 9	-0.1
21 - 1	163.3	640.3	1025.9	21 - 0	164.3	640.3	1026.9	23 - 8	-0.1
21 - 0	164.3	640.3	1026.9	21 - 9	165.3	640.3	1027.9	23 - 7	-0.1
21 - 9	165.3	640.3	1027.9	21 - 8	166.3	640.3	1028.9	23 - 6	-0.1
21 - 8	166.3	640.3	1028.9	21 - 7	167.3	640.3	1029.9	23 - 5	-0.1
21 - 7	167.3	640.3	1029.9	21 - 6	168.3	640.3	1030.9	23 - 4	-0.1
21 - 6	168.3	640.3	1030.9	21 - 5	169.3	640.3	1031.9	23 - 3	-0.1
21 - 5	169.3	640.3	1031.9	21 - 4	170.3	640.3	1032.9	23 - 2	-0.1
21 - 4	170.3	640.3	1032.9	21 - 3	171.3	640.3	1033.9	23 - 1	-0.1
21 - 3	171.3	640.3	1033.9	21 - 2	172.3	640.3	1034.9	23 - 0	-0.1
21 - 2	172.3	640.3	1034.9	21 - 1	173.3	640.3	1035.9	23 - 9	-0.1
21 - 1	173.3	640.3	1035.9	21 - 0	174.3	640.3	1036.9	23 - 8	-0.1
21 - 0	174.3	640.3	1036.9	21 - 9	175.3	640.3	1037.9	23 - 7	-0.1
21 - 9	175.3	640.3	1037.9	21 - 8	176.3	640.3	1038.9	23 - 6	-0.1
21 - 8	176.3	640.3	1038.9	21 - 7	177.3	640.3	1039.9	23 - 5	-0.1
21 - 7	177.3	640.3	1039.9	21 - 6	178.3	640.3	1040.9	23 - 4	-0.1
21 - 6	178.3	640.3	1040.9	21 - 5	179.3	640.3	1041.9	23 - 3	-0.1
21 - 5	179.3	640.3	1041.9	21 - 4	180.3	640.3	1042.9	23 - 2	-0.1
21 - 4	180.3	640.3	1042.9	21 - 3	181.3	640.3	1043.9	23 - 1	-0.1
21 - 3	181.3	640.3	1043.9	21 - 2	182.3	640.3	1044.9	23 - 0	-0.1
21 - 2	182.3	640.3	1044.9	21 - 1	183.3	640.3	1045.9	23 - 9	-0.1
21 - 1	183.3	640.3	1045.9	21 - 0	184.3	640.3	1046.9	23 - 8	-0.1
21 - 0	184.3	640.3	1046.9	21 - 9	185.3	640.3	1047.9	23 - 7	-0.1
21 - 9	185.3	640.3	1047.9	21 - 8	186.3	640.3	1048.9	23 - 6	-0.1
21 - 8	186.3	640.3	1048.9	21 - 7	187.3	640.3	1049.9	23 - 5	-0.1
21 - 7	187.3	640.3	1049.9	21 - 6	188.3	640.3	1050.9	23 - 4	-0.1
21 - 6	188.3	640.3	1050.9	21 - 5	189.3	640.3	1051.9	23 - 3	-0.1
21 - 5	189.3	640.3	1051.9	21 - 4	190.3	640.3	1052.9	23 - 2	-0.1
21 - 4	190.3	640.3	1052.9	21 - 3	191.3	640.3	1053.9	23 - 1	-0.1
21 - 3	191.3	640.3	1053.9	21 - 2	192.3	640.3	1054.9	23 - 0	-0.1
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21 - 0	194.3	640.3	1056.9	21 - 9	195.3	640.3	1057.9	23 - 7	-0.1
21 - 9	195.3	640.3	1057.9	21 - 8	196.3	640.3	1058.9	23 - 6	-0.1
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21 - 6	198.3	640.3	1060.9	21 - 5	199.3	640.3	1061.9	23 - 3	-0.1
21 - 5	199.								



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
BIBLIOTECAS R

Comisiones Admisiones		Comisiones	
97 - 3	1666.2	1433.4	1864.6
97 - 15	1152.0	1532.0	1661.2
97 - 16	1154.3	1563.5	1674.7
97 - 17	1158.9	1568.1	1677.3
97 - 4	1169.2	1373.4	1887.4
97 - 31	1209.1	1614.3	2023.3
97 - 31	1244.9	1534.1	2083.3
98 - 23	-772.1	-112.9	296.3
98 - 25	-306.5	-97.7	311.3
98 - 26	-481.8	-72.0	335.9
98 - 27	-469.5	-167.7	341.2
98 - 28	-459.3	-207.7	388.3
98 - 29	-359.5	-69.7	471.9
98 - 30	-376.3	-81.9	493.1
98 - 31	-311.9	-97.9	366.9
98 - 32	-310.9	-98.3	307.5
98 - 33	-304.0	107.2	316.4
98 - 34	-293.4	111.8	325.0
98 - 35	-291.8	127.4	336.6
98 - 36	-295.4	203.8	613.0
98 - 37	-173.3	233.7	642.9
98 - 38	-175.3	233.9	643.1
98 - 39	-111.1	291.1	797.3
98 - 40	-19.0	390.2	799.4
98 - 41	-7.3	401.9	811.1
98 - 42	-3.2	405.0	813.2
98 - 43	3.0	412.2	821.4
98 - 44	3.6	414.6	824.0
98 - 45	36.8	440.0	845.2
98 - 46	51.7	460.9	879.1
98 - 47	42.3	471.5	880.7
98 - 48	13.0	334.2	941.4
98 - 49	147.3	356.5	961.7
98 - 50	299.7	683.1	986.6
98 - 51	327.4	736.6	1145.8
98 - 52	345.2	754.4	1163.6
98 - 53	316.9	795.1	1205.1
98 - 54	348.4	797.6	1208.8
98 - 55	416.6	821.8	1234.9
98 - 56	427.7	836.9	1240.1
98 - 57	27.7	943.0	1257.8
98 - 58	259.4	948.0	1357.8
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98 - 60	387.4	996.6	1403.6
98 - 61	595.7	1004.9	1414.1
98 - 62	655.9	1043.1	1454.3
98 - 63	749.3	1138.5	1507.7
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98 - 65	919.0	1328.2	1537.4
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98 - 71	127.1	1331.3	1860.5
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98 - 77	1224.2	1633.4	2042.6
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98 - 93	-48.7	320.3	729.7
98 - 94	-77.0	332.2	741.4
98 - 95	-73.0	336.2	743.4
98 - 96	-46.7	341.5	751.7
98 - 97	-36.1	345.1	754.3
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98 - 102	-170.0	408.4	996.8
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98 - 107	-318.7	727.9	1137.1
98 - 108	-276.8	736.0	1163.2
98 - 109	-258.0	767.2	1176.4
98 - 110	-305.9	773.1	1184.3
98 - 111	-384.7	783.9	1203.1
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98 - 113	-247.0	824.2	1219.4
98 - 114	-428.6	838.0	1217.2
98 - 115	-421.6	852.0	1291.2
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98 - 245	-512.4	921.7	1110.0
98 - 246	-512.4	921.7	1110.0
98 - 247	-512.4	921.7	1110.0
98 - 248	-512.4	921.7	1110.0
98 - 249	-512.4	921.7	1110.0
98 - 250	-512.4	921.7	1110.0
98 - 251	-512.4	921.7	1110.0
98 - 252	-512.4	921.7	1110.0
98 - 253	-512.4	921.7	1110.0
98 - 254	-512.4	921.7	1110.0
98 - 255	-512.4	921.7	1110.0
98 - 256	-512.4	921.7	1110.0
98 - 257	-512.		

Comisiones Alvaro Obregón										
12 - 59	220.2	679.4	1036.6	***	13 - 3	-150.5	276.6	367.6	69	-32
12 - 54	237.9	647.1	1054.3	***	13 - 54	-124.4	264.4	494.0	64	-32
12 - 7	279.7	686.9	1098.1	***	13 - 59	-121.4	247.4	495.0	64	(3)
12 - 26	341.2	693.4	1099.4	***	13 - 28	-90.6	311.6	721.8	64	-48
12 - 56	369.3	718.5	1127.7	***	13 - 92	-73.7	333.3	742.7	64	-47
12 - 53	310.3	729.7	1138.9	***	13 - 27	-63.1	344.1	753.3	64	-31
12 - 19	328.4	737.6	1146.9	***	13 - 30	-42.1	406.8	816.0	64	-34
12 - 27	347.2	716.6	1165.6	***	13 - 60	-19.9	429.1	834.3	64	-16
12 - 94	312.3	701.7	1170.9	***	13 - 11	113.3	375.7	595.3	64	7
12 - 4	349.5	798.7	1207.9	***	13 - 59	200.0	404.2	1018.4	64	-30
12 - 25	391.3	800.3	1208.7	***	13 - 24	217.3	627.0	1036.2	64	-28
12 - 5	465.3	814.3	1223.7	***	13 - 7	239.3	668.7	1107.9	64	-26
12 - 48	425.4	834.8	1243.9	***	13 - 25	361.0	670.3	1107.4	64	-35
12 - 77	432.2	841.4	1250.6	***	13 - 36	280.2	688.4	1107.6	64	-37
12 - 23	473.1	884.2	1293.4	***	13 - 35	300.5	709.5	1113.7	64	-39
12 - 36	489.2	887.4	1298.3	***	13 - 16	300.2	717.4	1126.6	64	-23
12 - 17	488.5	897.7	1306.8	***	13 - 22	327.0	736.2	1145.4	64	-24
12 - 10	538.7	937.9	1347.1	***	13 - 94	352.3	741.9	1150.7	64	-4
12 - 69	642.1	1091.3	1466.5	***	13 - 4	369.3	778.3	1161.7	64	-30
12 - 8	765.2	1174.4	1583.6	***	13 - 85	371.1	780.3	1189.3	64	-7
12 - 64	811.8	1221.0	1630.2	***	13 - 5	385.1	794.3	1203.5	64	-29
12 - 9	827.8	1237.4	1444.2	***	13 - 63	405.4	814.6	1223.8	64	18
12 - 15	873.3	1282.7	1491.9	***	13 - 27	412.0	821.2	1230.4	64	-25
12 - 45	912.9	1322.1	1731.3	***	13 - 33	454.3	864.1	1273.3	64	-27
12 - 1	918.1	1327.3	1736.3	***	13 - 58	466.0	869.3	1278.4	64	-17
12 - 3	918.3	1327.1	1736.7	***	13 - 17	466.3	877.3	1286.7	64	-10
12 - 36	1014.9	1624.1	1833.3	***	13 - 10	500.3	917.7	1326.9	64	-69
12 - 38	1028.4	1437.3	1846.4	***	13 - 69	621.9	1031.1	1440.3	64	-8
12 - 29	1031.0	1440.1	1849.4	***	13 - 8	745.1	1154.2	1503.4	64	-5
12 - 4	1041.2	1450.4	1850.6	***	13 - 64	791.1	1204.8	1610.0	64	-50
12 - 53	1050.1	1459.3	1864.3	***	13 - 9	807.1	1216.8	1626.0	64	-5
12 - 11	1077.1	1486.3	1893.5	***	13 - 15	851.3	1262.3	1671.7	64	-45
12 - 11	1117.0	1926.7	1933.4	***	13 - 45	892.7	1301.9	1711.1	64	-6
32 - 21	-587.9	-228.7	180.3	***	13 - 2	897.9	1307.3	1716.3	64	-19
32 - 40	-622.7	-211.3	193.7	***	13 - 95	994.7	1403.9	1811.1	64	-62
32 - 22	-397.4	-186.4	220.8	***	13 - 85	1004.2	1417.4	1826.8	64	-8
32 - 23	-383.8	-176.5	232.5	***	13 - 49	1010.4	1420.0	1829.2	64	-77
32 - 67	-545.8	-136.5	272.6	***	13 - 4	1021.1	1430.5	1839.5	64	-39
32 - 66	-525.0	-111.9	293.4	***	13 - 31	1029.9	1439.1	1843.5	64	-45
32 - 28	-455.2	-86.1	343.1	***	13 - 11	1056.9	1466.1	1873.5	64	-14
32 - 14	-442.1	-32.9	376.3	***	13 - 30	1096.8	1506.0	1915.2	64	-21
32 - 30	-427.3	-38.1	391.1	***	48 - 21	-713.9	-316.7	92.3	64	-21
32 - 20	-426.6	-17.6	391.6	***	48 - 46	-710.6	-301.4	101.8	64	-30
32 - 12	-417.8	-8.6	400.6	***	48 - 22	-585.3	-274.3	132.8	64	-25
32 - 13	-397.6	11.5	420.7	***	48 - 23	-473.7	-264.5	144.7	64	-67
32 - 48	-321.2	88.0	497.3	***	48 - 67	-433.1	-224.5	184.7	64	-66
32 - 61	-291.3	147.9	527.1	***	48 - 56	-613.0	-201.8	205.4	64	-69
32 - 27	-291.1	188.1	527.9	***	48 - 52	-541.3	-194.1	225.1	64	-72
32 - 31	-226.9	183.1	591.3	***	48 - 14	-336.1	-120.9	286.3	64	-73
32 - 54	-154.8	274.4	465.6	***	48 - 29	-315.3	-104.1	303.1	64	-74
32 - 16	-123.2	286.0	495.2	***	48 - 20	-314.7	-105.5	303.7	64	-75
32 - 3	-110.1	290.1	495.3	***	48 - 12	-303.8	-96.6	312.6	64	-76
32 - 55	-112.9	296.3	505.5	***	48 - 32	-497.2	-83.0	321.1	64	-77
32 - 30	-110.2	299.0	508.2	***	48 - 13	-435.6	-74.4	322.8	64	-78
32 - 28	-85.1	324.1	533.3	***	48 - 61	-378.3	-29.9	439.1	64	-79
32 - 32	-86.1	343.1	534.3	***	48 - 47	-379.0	-30.2	439.4	64	-80
32 - 71	-53.0	353.0	704.8	***	48 - 31	-314.8	-94.5	503.5	64	-81
32 - 70	-9.2	418.4	827.6	***	48 - 34	-322.5	-186.4	593.6	64	-82
32 - 60	51.4	449.6	848.8	***	48 - 16	-311.1	-198.1	607.3	64	-83
32 - 18	123.8	537.3	936.7	***	48 - 3	-307.0	-202.2	611.8	64	-84
32 - 55	211.6	820.4	1029.9	***	48 - 35	-305.5	-206.4	617.0	64	-85
32 - 34	229.3	638.1	1047.7	***	48 - 30	-198.2	-211.0	620.2	64	-86
32 - 7	276.1	680.3	1049.3	***	48 - 26	-173.0	-234.2	645.4	64	-87
32 - 26	272.6	681.8	1050.1	***	48 - 52	-152.1	-237.1	660.5	64	-88
32 - 56	300.7	709.1	1119.1	***	48 - 57	-144.1	-267.7	674.9	64	-89
32 - 33	311.1	721.0	1130.2	***	48 - 30	-78.8	-330.4	729.6	64	-90
32 - 19	319.8	729.9	1138.2	***	48 - 63	-36.3	-335.7	761.9	64	-91
32 - 21	339.6	747.1	1137.0	***	48 - 18	-33.9	-449.3	862.8	64	-92
32 - 94	343.9	734.1	1162.3	***	48 - 39	-123.6	-532.8	942.0	64	-93
32 - 6	382.8	790.1	1195.3	***	48 - 24	-141.4	-556.6	959.8	64	-94
32 - 85	382.7	791.9	1201.1	***	48 - 7	-183.1	-592.3	1001.5	64	-95
32 - 5	390.7	803.5	1215.0	***	48 - 26	-184.6	-593.8	1003.0	64	-96
32 - 63	410.9	826.1	1215.3	***	48 - 59	-212.8	-622.0	1031.2	64	-97
32 - 71	423.6	832.8	1247.0	***	48 - 35	-223.9	-631.3	1042.3	64	-98
32 - 23	466.4	875.6	1284.6	***	48 - 19	-231.8	-641.0	1050.2	64	-99
32 - 36	471.0	880.7	1289.9	***	48 - 27	-236.5	-659.8	1069.0	64	-100
32 - 17	479.8	889.0	1294.2	***	48 - 94	-253.9	-669.1	1074.3	64	-101
32 - 10	520.1	929.3	1334.5	***	48 - 6	-793.9	-702.1	1111.3	64	-102
32 - 49	659.4	1042.6	1431.8	***	48 - 83	-794.7	-703.9	1113.1	64	-103
32 - 8	756.3	1165.7	1374.9	***	48 - 5	-505.7	-717.9	1127.1	64	-104
32 - 64	803.1	1212.4	1611.6	***	48 - 63	-320.0	-738.2	1147.4	64	-105
32 - 9	819.2	1226.4	1637.6	***	48 - 77	-335.6	-744.8	1134.0	64	-106
32 - 15	854.9	1274.1	1681.3	***	48 - 25	-376.5	-767.7	1168.9	64	-107
32 - 45	904.3	1313.3	1723.7	***	48 - 54	-383.6	-792.8	1202.0	64	-108
32 - 1	909.5	1318.6	1727.8	***	48 - 17	-391.9	-804.1	1210.3	64	-109
32 - 2	909.6	1318.3	1728.0	***	48 - 10	-431.1	-814.3	1230.5	64	-110
32 - 93	(1066.3)	(413.5)	1824.7	***	48 - 60	-545.5	-954.7	1363.9	64	-111
32 - 66	1019.7	1426.9	1834.1	***	48 - 8	-668.6	-1078.7	1487.0	64	-112
32 - 49	1022.4	1431.6	1840.8	***	48 - 64	-715.2	-1124.4	1331.6	64	-113
32 - 4	1032.6	1441.8	1851.0	***	48 - 1	-731.2	-1140.4	1349.0	64	-114
32 - 35	1041.4	1450.6	1859.8	***	48 - 15	-776.9	-1189.1	1353.5	64	-115
32 - 11	1066.5	1477.1	1866.9	***	48 - 45	-816.5	-1225.5	1624.7	64	-116
32 - 31	1100.3	1517.5	1926.7	***	48 - 2	-811.5	-1230.9	1639.0	64	-117
32 - 21	-649.5	-240.3	168.9	***	48 - 21	-755.8	-1346.8	162.6	64	-118
32 - 46	-634.2	-225.0	184.2	***	48 - 46	-740.6	-1314.4	177.8	64	-119
32 - 22	-605.1	-193.9	203.3	***	48 - 22	-715.3	-1304.3	192.9	64	-120
32 - 35	-597.3	-168.1	221.1	***	48 - 38	-931.5	-1321.7	1931.9	64	-121
32 - 47	-597.3	-149.1	241.1	***	48 - 49	-934.4	-1343.8	1952.8	64	-122
32 - 66	-536.6	-127.4	281.8	***	48 - 11	-960.5	-1389.7	1956.9	64	-123
32 - 82	-466.9	-97.2	351.3	***	48 - 31	-1020.4	-1421.6	1838.6	64	-124
32 - 14	-433.7	-44.5	364.7	***	48 - 20	-1044.7	-1313.5	1973.2	64	-125
32 - 79	-438.9	-29.7	379.5	***	48 - 21	-755.8	-1346.8	162.6	64	-126
32 - 20	-438.3	-26.1	380.1	***	48 - 46	-740.6	-1314.4	177.8	64	-127
32 - 12	-429.4	-20.2	389.0	***	48 - 22	-715.3	-1304.3	192.9	64	-128
32 - 32	-420.7	-8.1	397.6	***	48 -					

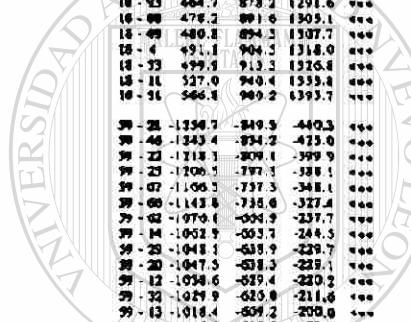


UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
DIRECCIÓN GENERAL DE BIBLIOTECAS



Comodidad	Año del Catá.	Comodidad	Año del Catá.
31 - 22 - 779.9 - 370.7	38.3	34 - 98 - 745.4	1154.6 - 1563.8
31 - 23 - 764.0 - 330.8	58.4	34 - 89 - 740.0	1157.2 - 1566.8
31 - 45 - 721.0 - 316.8	90.4	34 - 4 - 731.3	1167.3 - 1570.7
31 - 68 - 707.3 - 298.1	111.1	34 - 35 - 707.1	1170.3 - 1581.9
31 - 69 - 637.6 - 228.4	100.4	34 - 11 - 709.1	1203.2 - 1612.5
31 - 14 - 624.4 - 213.1	104.6	34 - 31 - 634.0	1243.1 - 1652.1
31 - 29 - 605.4 - 200.4	208.4	34 - 21 - 621.9	1147.7 - 1055.3
31 - 20 - 605.0 - 199.3	209.3	34 - 40 - 608.7	1199.3 - 149.3
31 - 62 - 600.1 - 190.5	218.3	34 - 22 - 603.6	1174.4 - 65.2
31 - 35 - 191.3 - 102.1	220.9	34 - 23 - 671.8	1162.6 - 51.4
31 - 43 - 579.9 - 170.7	258.5	34 - 61 - 631.4	1142.6 - 13.4
31 - 48 - 503.5 - 94.3	314.9	34 - 62 - 611.1	1101.9 - 7.3
31 - 61 - 473.6 - 64.4	344.8	34 - 63 - 741.4	1132.2 - 77.0
31 - 47 - 473.4 - 64.3	345.0	34 - 24 - 722.1	1119.0 - 90.2
31 - 34 - 317.1 - 92.1	301.3	34 - 29 - 712.4	1104.2 - 105.0
31 - 16 - 302.4 - 103.4	315.0	34 - 20 - 711.0	1103.6 - 103.6
31 - 3 - 301.3 - 107.1	317.1	34 - 17 - 703.9	1154.5
31 - 35 - 291.1 - 114.1	325.3	34 - 30 - 681.3	1160.0 - 123.2
31 - 50 - 292.5 - 114.7	325.9	34 - 13 - 681.7	1172.0 - 154.2
31 - 28 - 287.3 - 141.9	351.1	34 - 48 - 687.3	1181.1 - 211.1
31 - 32 - 346.4 - 162.8	352.0	34 - 61 - 771.1	1168.3 - 241.0
31 - 77 - 753.8 - 173.4	362.4	34 - 47 - 771.1	1107.9 - 241.3
31 - 30 - 173.1 - 236.0	364.3	34 - 34 - 813.0	1103.8 - 305.4
31 - 60 - 158.6 - 228.3	367.5	34 - 34 - 826.9	111.7 - 397.5
31 - 18 - 158.4 - 330.0	708.5	34 - 3 - 403.1	4.1 - 413.3
31 - 39 - 29.3 - 438.3	847.7	34 - 58 - 398.9	103.3 - 419.5
31 - 24 - 47.1 - 456.3	865.3	34 - 30 - 394.3	12.9 - 422.1
31 - 7 - 88.6 - 499.0	907.2	34 - 28 - 371.1	38.1 - 447.3
31 - 26 - 90.3 - 499.1	908.7	34 - 52 - 390.2	59.0 - 468.3
31 - 36 - 118.4 - 527.6	918.8	34 - 57 - 339.6	69.0 - 478.8
31 - 33 - 129.6 - 538.6	940.8	34 - 30 - 270.6	132.4 - 341.6
31 - 19 - 137.3 - 546.7	955.9	34 - 60 - 254.6	154.6 - 365.8
31 - 29 - 156.3 - 565.5	914.7	34 - 18 - 182.3	351.1 - 664.7
31 - 94 - 161.6 - 570.8	980.0	34 - 36 - 74.3	334.7 - 741.9
31 - 6 - 198.6 - 607.8	1017.0	34 - 24 - 36.7	355.5 - 701.7
31 - 63 - 300.4 - 609.6	1018.8	34 - 7 - 13.0	394.2 - 903.6
31 - 5 - 214.4 - 625.6	1032.8	34 - 26 - 13.3	393.7 - 904.9
31 - 68 - 234.7 - 643.0	1053.1	34 - 30 - 14.7	423.9 - 833.1
31 - 77 - 341.3 - 650.5	1059.7	34 - 35 - 21.6	433.0 - 844.2
31 - 23 - 284.2 - 593.4	1086.4	34 - 19 - 33.7	442.9 - 851.1
31 - 58 - 289.3 - 598.3	1107.7	34 - 27 - 51.3	461.7 - 870.9
31 - 17 - 297.4 - 709.8	1118.0	34 - 94 - 57.8	467.0 - 876.2
31 - 16 - 337.8 - 747.0	1156.2	34 - 6 - 94.8	504.0 - 913.2
31 - 69 - 451.2 - 860.4	1209.4	34 - 85 - 94.8	505.8 - 913.0
31 - 4 - 374.3 - 963.5	1392.7	34 - 5 - 110.6	519.8 - 929.0
31 - 64 - 920.9 - 1030.1	1399.3	34 - 63 - 130.9	540.1 - 949.3
31 - 9 - 634.9 - 1046.1	1455.3	34 - 77 - 137.3	546.3 - 931.9
31 - 15 - 681.6 - 1091.1	1501.0	34 - 23 - 180.4	589.5 - 958.8
31 - 45 - 722.0 - 1131.2	1540.4	34 - 10 - 181.3	594.7 - 1069.9
31 - 1 - 727.2 - 1138.4	1545.6	34 - 17 - 187.2	603.0 - 950.3
31 - 3 - 727.4 - 1186.5	1548.1	34 - 10 - 234.1	643.3 - 1051.3
31 - 53 - 624.0 - 1233.2	1642.4	34 - 60 - 347.4	736.6 - 1160.8
31 - 68 - 837.5 - 1246.7	1659.9	34 - 8 - 470.5	879.7 - 1289.9
31 - 49 - 840.1 - 1293.3	1658.5	34 - 44 - 517.1	946.3 - 1335.5
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31 - 11 - 880.2 - 1293.5	1708.6	34 - 45 - 614.2	1027.4 - 1416.6
31 - 31 - 926.1 - 1339.3	1744.3	34 - 1 - 623.4	1033.6 - 1442.0
34 - 24 - 912.3 - 303.1	93.7	34 - 93 - 720.2	1104.9 - 1536.6
34 - 45 - 877.0 - 437.8	78.6	34 - 30 - 733.7	1142.9 - 1552.1
34 - 22 - 871.9 - 463.7	93.1	34 - 40 - 734.3	1143.5 - 1554.7
34 - 25 - 860.1 - 450.9	41.7	34 - 5 - 744.6	1153.8 - 1565.0
34 - 47 - 820.2 - 410.9	1.7	34 - 31 - 753.4	1164.6 - 1575.8
34 - 65 - 794.4 - 390.2	19.0	34 - 11 - 781.4	1191.6 - 1608.0
34 - 62 - 729.7 - 325.3	88.7	34 - 21 - 792.3	1215.1 - 1604.7
34 - 14 - 716.5 - 307.3	101.9	34 - 21 - 921.0	1248.8 - 1619.9
34 - 29 - 707.1 - 291.5	116.2	34 - 46 - 912.6	1254.3 - 1625.6
34 - 20 - 707.1 - 291.9	117.3	34 - 12 - 761.9	1268.3 - 1610.5
34 - 12 - 697.2 - 283.0	126.6	34 - 22 - 967.2	1274.5 - 1645.9
34 - 32 - 683.6 - 278.4	148.8	34 - 23 - 971.9	1285.3 - 1653.9
34 - 13 - 673.9 - 262.8	148.4	34 - 67 - 973.9	1306.7 - 1675.7
34 - 48 - 563.4 - 186.4	222.8	34 - 66 - 981.3	1406.0 - 1686.0
34 - 61 - 263.7 - 138.5	251.7	34 - 32 - 101.3	1434.1 - 227.0
34 - 47 - 363.4 - 136.2	253.8	34 - 14 - 114.3	1434.1 - 231.0
34 - 30 - 301.3 - 92.1	317.1	34 - 39 - 217.3	1468.3 - 1609.9
34 - 10 - 397.3 - 117.7	920.0	34 - 29 - 216.9	1508.3 - 1610.5
34 - 3 - 393.4 - 15.8	425.0	34 - 12 - 701.8	1508.8 - 1610.8
34 - 55 - 387.2 - 23.0	431.2	34 - 32 - 693.3	1509.1 - 1612.2
34 - 50 - 384.4 - 24.6	435.8	34 - 13 - 687.8	1517.6 - 1536.6
34 - 28 - 359.4 - 49.8	459.6	34 - 46 - 611.4	1520.1 - 207.0
34 - 12 - 338.3 - 70.7	479.9	34 - 61 - 581.4	1572.2 - 237.0
34 - 57 - 327.9 - 81.3	490.3	34 - 47 - 581.2	1573.0 - 237.2
34 - 30 - 263.0 - 144.0	535.2	34 - 31 - 587.1	1607.3 - 201.5
34 - 35 - 37.3 - 446.7	575.3	34 - 34 - 621.8	1615.9 - 393.3
34 - 18 - 150.5 - 262.9	596.4	34 - 16 - 613.3	1641.4 - 405.4
34 - 59 - 42.8 - 346.4	597.6	34 - 35 - 603.0	1651.2 - 415.8
34 - 24 - 45.0 - 346.8	773.4	34 - 50 - 400.1	1651.9 - 418.1
34 - 7 - 2.3 - 405.5	815.1	34 - 28 - 373.2	1649.0 - 443.2
34 - 26 - 1.3 - 407.4	818.6	34 - 52 - 334.3	1649.4 - 464.1
34 - 56 - 28.4 - 439.6	844.8	34 - 37 - 341.7	1653.3 - 474.7
34 - 35 - 37.3 - 446.7	855.9	34 - 30 - 280.9	1628.3 - 337.5
34 - 18 - 45.4 - 434.6	863.8	34 - 30 - 224.7	1630.3 - 359.7
34 - 27 - 54.1 - 473.4	882.6	34 - 18 - 164.3	1642.7 - 466.6
34 - 34 - 59.5 - 478.7	887.9	34 - 59 - 75.6	1647.3 - 476.6
34 - 6 - 100.5 - 713.7	924.9	34 - 24 - 60.3	1648.4 - 477.6
34 - 63 - 100.3 - 517.3	925.7	34 - 7 - 19.1	1650.1 - 491.0
34 - 5 - 122.3 - 511.3	940.7	34 - 20 - 17.6	1651.6 - 501.8
34 - 63 - 142.6 - 591.8	961.0	34 - 36 - 10.6	1651.9 - 510.5
34 - 23 - 149.2 - 550.4	967.6	34 - 33 - 21.7	1653.0 - 540.1
34 - 25 - 172.1 - 601.3	1010.3	34 - 19 - 29.7	1658.9 - 548.1
34 - 36 - 197.2 - 606.3	1013.6	34 - 27 - 48.4	1657.6 - 566.6
34 - 17 - 203.3 - 614.7	1023.9	34 - 96 - 53.7	1662.9 - 572.1
34 - 10 - 245.7 - 654.9	1064.1	34 - 6 - 90.8	1663.0 - 590.1
34 - 9 - 331.1 - 768.3	1177.3	34 - 83 - 92.0	1661.8 - 611.0
34 - 8 - 482.2 - 891.1	1200.4	34 - 5 - 105.5	1655.7 - 624.9
34 - 64 - 328.8 - 938.0	1347.2	34 - 50 - 126.8	1656.0 - 645.2
34 - 9 - 54.6 - 944.0	1363.2	34 - 77 - 133.4	1642.0 - 651.3
34 - 15 - 590.5 - 997.7	1406.7	34 - 23 - 176.3	1653.5 - 654.7
34 - 45 - 829.5 - 1039.3	1448.3	34 - 38 - 181.4	1650.9 - 659.9
34 - 1 - 625.1 - 1044.2	1453.5	34 - 17 - 181.7	1658.5 - 1008.1
34 - 3 - 625.3 - 1044.3	1453.7	34 - 19 - 230.0	1659.2 - 1048.6
34 - 63 - 731.9 - 1141.1	1590.3	34 - 49 - 243.3	1641.7 - 902.1

Comisiones									
<i>Comisiones, Alfabéticas</i>									
50 - 3	97.7	506.9	916.1	***	52 - 7	74.0	332.2	744.4	***
50 - 5	117.9	527.1	1163.6	***	52 - 26	-71.3	334.7	747.1	***
50 - 7	124.6	533.8	1143.0	***	52 - 30	44.3	346.9	774.1	***
50 - 9	167.4	574.6	915.8	***	52 - 33	35.2	376.0	785.3	***
50 - 11	172.5	581.7	990.9	***	52 - 19	-25.3	383.9	793.1	***
50 - 17	180.8	590.0	949.2	***	52 - 27	-6.5	402.7	811.3	***
50 - 19	221.1	630.3	1039.3	***	52 - 34	-1.2	408.0	817.3	***
50 - 20	334.4	743.6	1151.6	***	52 - 6	35.1	445.0	854.2	***
50 - 4	457.6	860.8	1276.0	***	52 - 5	31.6	460.8	870.0	***
50 - 6	304.2	913.4	1322.6	***	52 - 18	71.6	481.2	890.3	***
50 - 8	320.2	929.4	1334.6	***	52 - 21	78.5	487.7	895.3	***
50 - 13	360.9	973.1	1344.3	***	52 - 23	121.4	530.0	938.8	***
50 - 15	605.5	1014.3	1423.7	***	52 - 36	126.5	544.0	944.5	***
50 - 1	410.3	1019.7	1428.9	***	52 - 17	134.4	544.0	951.2	***
50 - 2	410.7	1019.8	1429.0	***	52 - 10	173.0	584.2	991.4	***
50 - 9	207.3	1114.3	1333.7	***	52 - 19	248.4	697.8	1106.6	***
50 - 8	720.7	1129.3	1339.1	***	52 - 8	411.3	820.7	1239.9	***
50 - 49	723.5	1132.6	1514.8	***	52 - 64	438.6	867.3	1276.3	***
50 - 4	733.6	1142.8	1532.0	***	52 - 9	476.4	883.3	1292.1	***
50 - 33	742.2	1151.6	1569.6	***	52 - 13	319.8	929.0	1318.1	***
50 - 11	769.5	1176.7	1587.9	***	52 - 45	339.2	946.4	1337.6	***
50 - 51	809.3	1218.3	1627.7	***	52 - 1	364.4	973.0	1382.3	***
52 - 21	942.0	552.8	-143.6	***	52 - 2	364.6	973.3	1393.0	***
52 - 46	946.8	537.8	-124.4	***	52 - 52	661.2	1070.4	1479.6	***
52 - 22	921.7	512.5	-103.3	***	52 - 39	674.7	1083.5	1493.1	***
52 - 23	909.9	560.7	-91.5	***	52 - 4	687.6	1094.8	1506.0	***
52 - 61	859.9	460.7	-31.5	***	52 - 33	496.4	1103.6	1514.4	***
52 - 60	849.2	446.0	-30.8	***	52 - 11	723.4	1132.6	1514.8	***
52 - 92	779.4	370.2	39.0	***	52 - 31	763.3	1172.5	1581.2	***
52 - 14	766.3	387.1	32.1	***	57 - 21	-973.5	-384.3	-175.1	***
52 - 29	751.3	342.5	66.9	***	57 - 46	-974.3	-369.1	-159.9	***
52 - 20	750.9	341.7	67.3	***	57 - 22	-951.2	-344.0	-134.8	***
52 - 17	742.2	312.8	70.4	***	57 - 23	-94.4	-322.2	-123.0	***
52 - 32	733.3	324.1	85.1	***	57 - 47	-901.4	-492.2	-43.0	***
52 - 13	721.8	312.5	96.6	***	57 - 35	-840.7	-471.3	-63.3	***
52 - 48	643.4	236.2	173.0	***	57 - 33	-816.9	-461.7	-7.3	***
52 - 58	613.4	204.3	292.9	***	57 - 14	-797.8	-388.6	20.6	***
52 - 47	613.2	204.0	263.2	***	57 - 23	-781.0	-373.8	35.4	***
52 - 31	551.1	141.9	267.3	***	57 - 20	-783.4	-373.2	36.0	***
52 - 56	449.0	94.8	349.4	***	57 - 12	-793.5	-364.3	44.9	***
52 - 16	447.9	88.1	371.1	***	57 - 32	-764.8	-355.6	33.6	***
52 - 3	443.3	34.0	379.2	***	57 - 13	-751.3	-344.1	65.1	***
52 - 55	437.0	22.8	381.4	***	57 - 48	-676.5	-267.7	141.5	***
52 - 50	343.4	25.1	384.1	***	57 - 61	-644.9	-327.8	171.4	***
52 - 58	308.3	20.9	430.1	***	57 - 57	-646.7	-237.3	171.7	***
52 - 39	377.3	31.5	440.7	***	57 - 31	-582.6	-173.4	235.8	***
52 - 30	314.9	94.3	503.5	***	57 - 54	-490.5	-167.6	327.9	***
52 - 60	292.7	116.5	513.7	***	57 - 16	-471.8	-149.6	339.6	***
52 - 29	260.5	212.2	626.8	***	57 - 3	-474.7	-131.3	347.1	***
52 - 7	331.1	266.6	703.2	***	57 - 33	-468.3	-139.3	349.9	***
52 - 26	311.6	244.4	723.6	***	57 - 28	-440.7	-111.3	377.1	***
52 - 7	331.1	306.1	763.3	***	57 - 52	-411.8	-10.6	393.6	***
52 - 24	294.8	344.4	723.6	***	57 - 30	-345.4	-62.8	472.0	***
52 - 1	331.1	306.1	763.3	***	57 - 60	-324.2	-85.0	494.2	***
52 - 25	234.4	285.8	795.0	***	57 - 18	-251.6	-181.7	393.1	***
52 - 26	231.6	241.7	800.6	***	57 - 29	-144.1	-361.9	364.3	***
52 - 33	123.3	194.9	806.1	***	57 - 34	-126.3	-283.9	692.1	***
52 - 19	14.3	404.9	814.0	***	57 - 7	-84.0	-324.0	733.8	***
52 - 22	14.6	423.6	832.8	***	57 - 22	-43.6	-363.4	774.6	***
52 - 34	19.7	428.9	836.1	***	57 - 19	-35.8	-373.4	782.5	***
52 - 6	56.7	465.9	875.1	***	57 - 27	-17.1	-393.1	901.3	***
52 - 63	58.5	467.8	877.0	***	57 - 34	-14.8	-397.9	906.0	***
52 - 9	73.3	481.7	897.9	***	57 - 6	35.2	-343.4	943.6	***
52 - 62	92.5	502.0	911.2	***	57 - 43	27.1	-416.3	945.3	***
52 - 77	95.4	517.8	947.4	***	57 - 23	41.1	-470.3	979.7	***
52 - 27	504.6	517.8	954.6	***	57 - 16	477.1	-321.8	993.1	***
52 - 29	492.3	551.5	960.7	***	57 - 29	144.1	-363.1	974.3	***
52 - 28	474.7	556.6	963.8	***	57 - 34	309.2	-323.9	981.3	***
52 - 17	155.2	564.9	974.1	***	57 - 28	-83.1	-326.1	731.3	***
52 - 19	196.0	605.3	1014.4	***	57 - 56	-34.9	-334.3	769.5	***
52 - 69	309.3	716.5	1127.7	***	57 - 33	-43.6	-363.4	774.6	***
52 - 4	432.4	941.6	1250.8	***	57 - 23	-43.6	-363.4	785.3	***
52 - 64	479.8	888.2	1297.4	***	57 - 53	-41.1	-470.3	979.7	***
52 - 10	495.0	904.2	1313.4	***	57 - 27	-49.7	-477.1	986.5	***
52 - 15	540.7	949.9	1359.1	***	57 - 23	114.6	-530.0	992.2	***
52 - 43	589.1	983.3	1398.5	***	57 - 58	113.9	-523.1	934.3	***
52 - 1	585.3	994.3	1403.7	***	57 - 17	124.1	-533.4	942.6	***
52 - 2	583.3	994.7	1403.9	***	57 - 10	164.5	-575.7	987.9	***
52 - 93	1091.3	1300.5	1403.6	***	57 - 6	27.1	-587.8	1096.2	***
52 - 85	695.6	1104.8	1314.0	***	57 - 8	400.9	810.4	1219.3	***
52 - 99	698.2	1107.4	1316.6	***	57 - 64	447.2	856.2	1263.9	***
52 - 4	108.3	1117.7	1326.9	***	57 - 9	403.2	872.2	1281.9	***
52 - 33	717.3	1126.5	1331.7	***	57 - 13	509.2	918.4	1327.6	***
52 - 11	744.3	1133.9	1362.7	***	57 - 43	348.6	937.8	1367.0	***
52 - 21	764.2	1133.4	1403.6	***	57 - 1	335.4	963.0	1372.2	***
52 - 21	983.0	573.8	-164.6	***	57 - 2	334.0	963.2	1374.4	***
52 - 45	967.7	358.5	-147.3	***	57 - 31	610.6	993.8	1469.0	***
52 - 22	942.6	333.4	-124.2	***	57 - 38	664.1	973.3	1481.5	***
52 - 23	930.8	521.6	-112.4	***	57 - 49	664.7	1073.4	1483.1	***
52 - 67	890.8	481.6	-72.4	***	57 - 4	677.0	1080.3	1494.4	***
52 - 66	870.4	466.9	-51.7	***	57 - 53	685.8	1093.0	1504.3	***
52 - 62	800.4	391.2	-14.0	***	57 - 11	712.9	1122.0	1531.2	***
52 - 14	789.8	378.0	31.2	***	57 - 24	732.7	1141.1	1571.1	***
52 - 29	772.4	343.2	46.0	***	57 - 14	-860.5	-451.3	-41.1	***
52 - 28	771.8	342.6	46.6	***	57 - 29	-84.7	-436.5	-27.3	***
52 - 34	479.9	70.7	338.3	***	57 - 20	-383.2	-436.0	-36.8	***
52 - 18	468.2	39.0	350.2	***	57 - 12	-836.2	-427.0	-17.8	***
52 - 3	494.1	-34.9	334.3	***	57 - 32	-827.9	-418.4	-9.2	***
52 - 33	427.9	-44.7	360.3	***	57 - 13	-816.0	-406.8	-2.4	***
52 - 30	433.3	-45.1	363.1	***	57 - 48	-733.6	-310.4	75.8	***
52 - 28	430.4	-26.9	368.3	***	57 - 61	-709.7	-300.5	109.7	***
52 - 27	398.6	14.6	417.8	***	57 - 47	-705.3	-303.1	103.9	***
52 - 30	335.9	73.3	492.5	***	57 - 31	-983.3	-236.1	171.1	***
52 - 60	313.6	93.6	504.6	***	57 - 54	-553.2	-144.1	265.2	***
52 - 18	221.2	192.2	505.7	***	57 - 16	-941.6	-132.4	275.8	***
52 - 29	133.5	275.7	684.9	***	57 - 3	-537.3	-128.3	290.9	***
52 - 24	115.7	293.3	702.7	***	57 - 15	-311.7	-122.1	297.1	***



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
BIBLIOTECA CENTRAL

®

Comisiones Abiertas Cerradas		Comisiones		
16 - 48 -362.8	-449.3	-33.3	***	
16 - 44 -252.4	-419.4	-46.0	***	
16 - 47 -932.6	-419.2	-3.7	***	
16 - 31 -768.3	-353.0	58.4	***	
16 - 36 -674.4	-362.8	190.3	***	
16 - 38 -644.3	-231.2	162.3	***	
16 - 3 -369.0	-347.3	166.3	***	
16 - 35 -454.4	-349.8	173.5	***	
16 - 30 -451.7	-238.3	173.1	***	
16 - 28 -424.8	-213.2	200.3	***	
16 - 29 -803.7	-192.2	231.2	***	
16 - 27 -395.3	-181.7	231.0	***	
16 - 30 -332.3	-118.8	294.6	***	
16 - 20 -516.1	-56.7	315.6	***	
16 - 38 -330.0	63.3	495.9	***	
16 - 24 -312.2	101.2	314.7	***	
16 - 7 -270.4	143.0	356.4	***	
16 - 26 -249.0	144.5	357.7	***	
16 - 36 -240.8	172.6	506.1	***	
16 - 33 -229.7	183.8	507.2	***	
16 - 19 -321.7	191.7	505.1	***	
16 - 27 -303.6	210.3	523.9	***	
16 - 34 -197.7	215.4	529.2	***	
16 - 6 -166.6	233.8	566.2	***	
16 - 63 -193.8	234.8	568.0	***	
16 - 5 -144.9	268.6	582.0	***	
16 - 65 -124.6	288.8	702.5	***	
16 - 77 -118.0	293.3	708.6	***	
16 - 23 -75.1	338.3	751.8	***	
16 - 38 -70.0	343.4	758.9	***	
16 - 17 -61.7	351.7	763.2	***	
16 - 30 -31.4	343.0	803.5	***	
16 - 68 -91.9	503.3	918.8	***	
16 - 8 -91.5	503.5	1041.9	***	
16 - 64 -241.6	507.1	1068.5	***	
16 - 9 -277.7	501.1	1104.3	***	
16 - 13 -373.3	536.8	1162.2	***	
16 - 43 -361.7	576.2	1185.6	***	
16 - 7 -367.7	571.4	1294.7	***	
16 - 2 -368.1	578.5	1393.0	***	
16 - 15 -444.7	578.2	1291.6	***	
16 - 66 -476.2	591.6	1305.1	***	
16 - 49 -480.8	594.3	1307.7	***	
16 - 4 -591.1	904.3	1318.0	***	
16 - 33 -595.1	913.3	1326.8	***	
16 - 11 -527.0	949.4	1359.4	***	
16 - 56 -546.4	949.2	1393.7	***	
36 - 28 -1347.3	-849.3	-44.3	***	
36 - 46 -1343.4	-934.2	-423.0	***	
36 - 23 -218.1	-309.1	-399.9	***	
36 - 25 -206.1	-797.1	-388.1	***	
36 - 67 -116.1	-737.3	-384.1	***	
36 - 60 -143.8	-715.6	-327.4	***	
36 - 12 -170.1	-237.7	-327.7	***	
36 - 14 -162.7	-205.7	-244.5	***	
36 - 29 -194.8	-218.2	-244.5	***	
36 - 23 -1948.1	-638.9	-229.7	***	
36 - 20 -1947.5	-538.3	-229.1	***	
36 - 12 -1034.8	-539.4	-220.2	***	
36 - 32 -1021.9	-535.0	-211.6	***	
36 - 13 -1018.4	-509.2	-209.0	***	
36 - 95 -442.0	-718.4	-127.6	***	
36 - 61 -912.3	-592.9	-43.7	***	
36 - 47 -911.8	-502.6	-93.4	***	
36 - 34 -847.2	-438.5	-59.3	***	
36 - 34 -753.0	-345.4	62.8	***	
36 - 10 -743.5	-354.7	74.5	***	
36 - 3 -739.8	-332.6	78.6	***	
36 - 33 -733.6	-324.4	94.8	***	
36 - 20 -731.0	-321.8	97.4	***	
36 - 28 -705.8	-295.6	111.6	***	
36 - 32 -684.9	-277.7	123.5	***	
36 - 57 -974.5	-285.1	144.1	***	
36 - 30 -411.0	-201.4	205.8	***	
36 - 60 -389.3	-180.1	279.1	***	
36 - 18 -499.9	-83.3	330.0	***	
36 - 26 -391.4	-17.8	472.7	***	
36 - 7 -349.7	39.5	468.7	***	
36 - 26 -348.2	61.0	470.2	***	
36 - 36 -320.0	89.2	498.4	***	
36 - 53 -308.9	100.3	509.3	***	
36 - 10 -301.0	108.2	317.4	***	
36 - 21 -282.2	127.0	318.2	***	
36 - 94 -276.9	133.3	341.3	***	
36 - 6 -239.5	169.3	376.1	***	
36 - 65 -238.1	171.1	380.3	***	
36 - 3 -224.1	163.1	394.3	***	
36 - 6 -203.8	203.4	614.6	***	
36 - 77 -197.2	212.0	621.2	***	
36 - 23 -134.3	219.3	664.1	***	
36 - 38 -149.2	260.0	669.2	***	
36 - 73 -144.1	268.3	677.3	***	
36 - 10 -100.2	304.3	717.7	***	
36 - 69 -12.7	421.9	831.1	***	
36 - 9 -135.8	343.0	934.2	***	
36 - 64 -181.4	361.6	1000.8	***	
36 - 9 -198.4	607.6	1161.8	***	
36 - 13 -244.1	833.3	1082.5	***	
36 - 45 -283.5	692.7	1101.9	***	
36 - 4 -288.7	697.9	1107.1	***	
36 - 3 -268.9	698.1	1107.3	***	
36 - 53 -365.3	797.4	1203.9	***	
36 - 46 -399.6	908.2	1217.4	***	
36 - 4 -401.6	910.8	1220.0	***	
36 - 4 -411.9	821.1	1230.3	***	
36 - 53 -420.7	829.9	1239.1	***	
36 - 14 -427.7	836.9	1256.1	***	
36 - 31 -487.6	896.7	1306.0	***	
36 - 23 -1274.4	-857.3	-438.0	***	
36 - 44 -1261.2	-852.0	-442.8	***	
36 - 23 -1236.1	-826.9	-417.7	***	
36 - 23 -1234.3	-815.1	-403.9	***	
36 - 5 -21 -1319.7	-904.3	-301.5	***	
36 - 22 -1304.4	-343.2	-385.3	-484.0	***
36 - 21 -1279.3	-370.1	-460.9	***	
36 - 65 -1237.3	-381.3	-409.1	***	
36 - 56 -1206.8	-797.6	-384.6	***	
36 - 43 -1137.1	-727.8	-316.7	***	
36 - 29 -1109.1	-699.9	-390.7	***	
36 - 20 -1108.3	-699.3	-290.1	***	
36 - 12 -1099.6	-690.4	-281.2	***	
36 - 32 -1091.0	-681.8	-271.6	***	
36 - 15 -1074.4	-670.2	-261.0	***	
36 - 48 -1003.0	-503.8	-184.6	***	
36 - 61 -973.1	-563.9	-154.7	***	
36 - 47 -973.8	-563.6	-134.4	***	
36 - 31 -908.7	-499.5	-80.3	***	
36 - 54 -818.6	-407.4	-1.5	***	
36 - 10 -804.9	-395.7	13.1	***	
36 - 3 -809.8	-391.4	17.5	***	
36 - 33 -794.0	-384.4	23.8	***	
36 - 30 -791.0	-382.8	20.4	***	
36 - 38 -766.8	-357.4	51.0	***	
36 - 32 -745.9	-336.7	72.5	***	
36 - 37 -735.3	-328.1	85.1	***	
36 - 30 -672.6	-263.4	145.6	***	
36 - 46 -650.3	-241.1	168.1	***	
36 - 18 -537.9	-144.3	269.0	***	
36 - 36 -570.3	-61.6	346.1	***	
36 - 24 -552.4	-43.2	386.0	***	
36 - 7 -510.1	-1.5	407.7	***	
36 - 36 -381.0	-28.2	437.4	***	
36 - 33 -369.0	59.3	448.5	***	
36 - 19 -362.0	47.2	436.4	***	
36 - 27 -343.2	66.9	473.2	***	
36 - 94 -337.9	71.5	480.3	***	
36 - 6 -300.9	108.3	517.3	***	
36 - 81 -299.1	110.1	519.3	***	
36 - 3 -283.1	124.1	533.3	***	
36 - 43 -264.8	144.4	535.0	***	
36 - 77 -258.2	151.0	550.2	***	
36 - 23 -213.3	193.9	503.1	***	
36 - 38 -210.2	199.0	508.2	***	
36 - 77 -201.9	207.3	616.3	***	
36 - 10 -161.7	247.5	696.7	***	
36 - 69 -16.3	360.9	770.1	***	
36 - 8 -74.8	474.6	893.2	***	
36 - 64 -121.4	350.6	959.3	***	
36 - 9 -137.4	545.6	955.8	***	
36 - 15 -133.1	392.3	1001.5	***	
36 - 43 -222.5	631.7	1040.9	***	
36 - 1 -227.3	655.9	1046.1	***	
36 - 2 -227.9	637.1	1046.1	***	
36 - 93 -324.3	735.7	1142.9	***	
36 - 38 -338.0	747.2	1156.4	***	
36 - 49 -340.6	749.8	1159.0	***	
36 - 4 -350.9	760.1	1169.3	***	
36 - 53 -359.7	768.9	1178.1	***	
36 - 11 -366.7	798.9	1205.1	***	
36 - 31 -436.4	835.8	1243.0	***	
36 - 21 -1107.6	-289.2	-224.4	***	
36 - 46 -1332.6	-923.4	-514.2	***	
36 - 23 -1307.5	-868.3	-489.1	***	
36 - 25 -1293.7	-859.3	-477.1	***	
36 - 21 -1294.7	-846.3	-477.1	***	
36 - 61 -1162.3	-750.0	-340.8	***	
36 - 14 -1152.8	-742.7	-333.7	***	
36 - 28 -1137.3	-728.1	-316.9	***	
36 - 30 -1136.7	-727.3	-318.3	***	
36 - 12 -1127.7	-718.5	-309.3	***	
36 - 32 -1119.1	-709.9	-300.7	***	
36 - 54 -844.8	-453.6	-26.1	***	
36 - 10 -833.7	-423.9	-14.7	***	
36 - 3 -829.0	-419.8	-16.6	***	
36 - 22 -822.6	-417.6	-4.4	***	
36 - 20 -820.1	-410.9	-1.7	***	
36 - 28 -795.0	-385.8	23.4	***	
36 - 23 -774.4	-364.9	44.3	***	
36 - 37 -763.3	-354.3	56.9	***	
36 - 30 -760.3	-291.3	117.7	***	
36 - 60 -768.3	-289.3	139.9	***	
36 - 18 -546.1	-192.6	340.8	***	
36 - 59 -498.4	-89.2	320.0	***	
36 - 24 -480.6	-71.4	337.1	***	
36 - 7 -438.8	29.4	379.6	***	
36 - 26 -437.4	28.2	381.0	***	
36 - 35 -395.1	11.1	420.3	***	
36 - 19 -393.1	19.1	428.1	***	
36 - 27 -371.1	37.9	437.1	***	
36 - 94 -366.1	43.1	432.3	***	
36 - 6 -329.0	80.2	489.4	***	
36 - 63 -327.2	82.0	491.2	***	
36 - 3 -313.3	93.9	503.1	***	
36 - 65 -299.0	116.2	523.4	***	
36 - 77 -286.4	122.8	532.0	***	
36 - 23 -243.5	165.7	554.9	***	
36 - 34 -258.4	170.8	580.0	***	
36 - 77 -230.1	179.1	588.3	***	
36 - 10 -189.8	219.4	628.0	***	
36 - 69 -76.5	741.9	761.0	***	
36 - 3 -46.0	455.8	803.0	***	
36 - 64 -93.3	502.3	911.7	***	
36 - 9 -101.3	518.3	927.1	***	

Comparación	
19 - 15 155.0 354.2 973.4 ***	19 - 77 -305.4 103.8 513.0
19 - 46 194.3 603.5 1512.7 ***	19 - 29 -262.6 146.6 553.0
19 - 1 195.3 608.7 1017.9 ***	19 - 59 -171.9 111.7 561.0
19 - 2 195.7 628.9 1018.1 ***	19 - 10 -208.9 200.3 509.5
19 - 53 296.4 721.6 1114.8 ***	19 - 69 -95.0 313.6 722.8
19 - 58 309.8 719.0 1120.2 ***	19 - 8 27.6 419.4 845.0 ***
19 - 4 322.7 731.9 1141.1 ***	19 - 64 74.2 434.4 894.8 ***
19 - 53 331.3 740.7 1149.9 ***	19 - 3 90.2 499.4 908.6 ***
19 - 11 358.6 787.8 1177.0 ***	19 - 45 173.3 584.3 993.7 ***
19 - 51 398.4 807.6 1216.3 ***	19 - 1 180.5 589.7 998.9 ***
19 - 21 -1399.0 -984.8 -340.5 ***	19 - 2 180.7 589.9 999.1 ***
19 - 45 1343.7 924.5 -525.3 ***	19 - 93 277.3 548.5 1095.9 ***
19 - 22 1318.6 909.4 -500.2 ***	19 - 38 290.7 569.3 1109.1 ***
19 - 23 1306.4 897.6 498.1 ***	19 - 49 291.4 702.6 1111.8 ***
19 - 67 1266.8 857.5 448.4 ***	19 - 4 303.6 712.2 1122.0 ***
19 - 65 -1246.1 836.9 -427.7 ***	19 - 33 312.5 721.7 1130.4 ***
19 - 62 -1176.4 -767.2 -358.0 ***	19 - 11 339.5 748.7 1157.9 ***
19 - 14 1153.2 754.0 344.3 ***	19 - 31 379.3 788.3 1197.7 ***
19 - 29 1148.4 739.2 330.0 ***	21 - 21 -1385.7 -976.5 567.3 ***
19 - 23 1147.8 748.6 -379.4 ***	21 - 46 -1370.3 -991.3 -352.1 ***
19 - 12 -1138.9 729.7 -320.5 ***	21 - 23 -1345.4 -910.2 -527.0 ***
19 - 32 -1130.2 721.0 311.8 ***	21 - 71 1331.1 -294.1 -415.1 ***
19 - 13 -1118.7 709.5 -300.3 ***	21 - 67 1293.3 384.3 473.1 ***
19 - 44 1042.3 633.1 223.3 ***	21 - 66 1271.9 631.5 454.4 ***
19 - 61 -1012.4 803.2 194.0 ***	21 - 62 1203.1 739.3 384.7 ***
19 - 47 1012.1 602.9 193.7 ***	21 - 14 -1189.0 -780.7 -371.5 ***
19 - 31 -948.0 -358.8 -129.5 ***	21 - 29 1171.1 -765.9 -338.7 ***
19 - 54 -855.9 -446.7 -17.5 ***	21 - 26 1174.3 -765.4 -356.2 ***
19 - 15 -844.0 -415.0 -91.8 ***	21 - 12 1163.0 -762.4 -347.2 ***
19 - 3 -840.1 -450.9 -21.7 ***	21 - 72 -1157.0 -747.1 -338.8 ***
19 - 55 -833.9 -424.7 -15.5 ***	21 - 19 1145.4 -738.2 -327.0 ***
19 - 20 831.3 -422.1 -12.9 ***	21 - 48 -1069.0 -655.3 -250.6 ***
19 - 28 806.1 396.9 12.3 ***	21 - 61 1039.1 -629.9 -226.1 ***
19 - 52 -785.2 -376.0 33.2 ***	21 - 47 -1058.9 -929.1 -220.3 ***
19 - 57 -774.6 -365.4 -43.9 ***	21 - 31 974.7 -565.5 -156.3 ***
19 - 30 -711.4 -302.6 106.5 ***	21 - 34 -882.6 -474.4 -44.3 ***
19 - 50 -689.8 -280.4 -126.8 ***	21 - 16 -870.9 -461.1 -52.5 ***
19 - 18 597.2 -183.8 -229.7 ***	21 - 3 -866.8 -457.6 -48.4 ***
19 - 59 509.3 100.3 -308.9 ***	21 - 55 -800.0 -451.4 -42.2 ***
19 - 24 -491.7 -92.5 -326.7 ***	21 - 50 858.0 -448.8 -39.5 ***
19 - 7 -450.0 -40.8 -368.4 ***	21 - 28 852.8 -423.6 -14.4 ***
19 - 29 448.3 393.3 369.9 ***	21 - 32 -811.9 -492.1 -6.5 ***
19 - 55 -420.3 -11.1 -390.1 ***	21 - 57 801.3 -392.1 -17.1 ***
19 - 19 401.3 7.9 417.1 ***	21 - 10 -731.6 -325.4 -79.8 ***
19 - 27 -182.3 25.7 433.9 ***	21 - 66 716.3 -307.3 -102.0 ***
19 - 04 379.0 32.0 441.1 ***	21 - 18 621.0 -210.1 -103.0 ***
19 - 6 -340.2 69.0 478.2 ***	21 - 25 536.2 -170.0 -282.2 ***
19 - 83 338.4 73.8 490.0 ***	21 - 24 318.4 -106.2 -200.0 ***
19 - 51 324.4 86.8 494.0 ***	21 - 7 475.7 -67.3 -341.7 ***
19 - 65 364.1 195.1 514.9 ***	21 - 26 475.3 -66.0 -343.2 ***
19 - 77 267.1 111.7 570.0 ***	21 - 36 -467.1 -37.9 -371.3 ***
19 - 23 -234.0 156.6 563.8 ***	21 - 31 -433.9 -38.7 -382.5 ***
19 - 56 249.3 159.7 568.9 ***	21 - 15 -420.0 -11.9 -190.4 ***
19 - 17 241.1 168.0 377.2 ***	21 - 34 403.9 -3.3 -414.3 ***
19 - 10 261.0 268.2 617.4 ***	21 - 6 -368.0 -43.3 -451.5 ***
19 - 69 -87.6 321.6 730.8 ***	21 - 10 -297.7 181.5 -501.7 ***
19 - 8 35.5 444.7 853.9 ***	21 - 99 -114.3 294.9 704.1 ***
19 - 64 92.1 491.3 900.5 ***	21 - 8 -8.8 -4.8 -927.2 ***
19 - 9 98.1 307.3 918.9 ***	21 - 64 -53.4 -684.0 -733.8 ***
19 - 15 143.8 553.0 902.2 ***	21 - 23 -281.3 -127.9 -537.1 ***
19 - 45 183.2 592.4 1031.6 ***	21 - 36 -270.2 -131.0 -342.2 ***
19 - 1 188.4 597.2 1056.8 ***	21 - 17 -267.0 -141.3 -350.5 ***
19 - 2 188.6 597.8 1057.0 ***	21 - 10 -297.7 181.5 -501.7 ***
19 - 95 283.2 694.4 1110.6 ***	21 - 9 -99 -114.3 294.9 704.1 ***
19 - 88 298.3 707.9 1117.1 ***	21 - 8 -8.8 -4.8 -927.2 ***
19 - 49 342.3 710.5 1119.7 ***	21 - 64 -53.4 -684.0 -733.8 ***
19 - 4 -311.6 720.8 1130.0 ***	21 - 49 -274.0 -62.8 -930.2 ***
19 - 45 320.4 729.6 1138.8 ***	21 - 15 -117.1 -528.3 -935.5 ***
19 - 11 347.4 756.0 1139.8 ***	21 - 45 -156.3 -585.7 -974.9 ***
19 - 51 387.3 796.5 1203.7 ***	21 - 2 -161.7 -570.9 -980.1 ***
19 - 21 -1366.9 -957.7 -548.5 ***	21 - 95 -293.3 -667.1 -1076.7 ***
19 - 46 -1351.7 -842.5 -531.3 ***	21 - 38 -277.0 -681.7 -1090.4 ***
19 - 22 -1326.6 -917.4 -506.2 ***	21 - 49 -274.0 -62.8 -930.2 ***
19 - 25 -1314.7 -905.5 -496.3 ***	21 - 4 -284.9 -684.0 -1105.2 ***
19 - 61 1274.8 -865.6 -456.6 ***	21 - 33 -293.7 -702.9 -1121.1 ***
19 - 66 1234.0 -844.8 -435.6 ***	21 - 11 -320.7 -729.9 -1138.1 ***
19 - 62 -1184.3 -773.1 -355.9 ***	21 - 3 -360.5 -705.8 -1179.0 ***
19 - 14 -1171.1 -761.9 -352.7 ***	21 - 21 -1391.0 -981.8 -172.8 ***
19 - 29 -1156.3 -747.1 -357.8 ***	21 - 46 -1375.7 -966.5 -337.3 ***
19 - 20 -1155.8 -746.6 -337.4 ***	21 - 22 -1350.6 -941.5 -532.3 ***
19 - 12 1146.8 -737.6 -328.4 ***	21 - 45 -1338.3 -929.5 -320.4 ***
19 - 43 -1138.2 -729.0 -318.8 ***	21 - 67 -1258.8 -887.5 -180.4 ***
19 - 13 -1126.6 -717.4 -304.2 ***	21 - 66 -1278.1 -861.9 -459.7 ***
19 - 48 -1050.2 -641.0 -281.8 ***	21 - 62 -1204.4 -793.2 -190.6 ***
19 - 01 1020.3 -611.1 -201.9 ***	21 - 14 -1095.2 -780.0 -376.8 ***
19 - 47 -1020.1 -610.9 -201.7 ***	21 - 29 -1186.0 -771.2 -162.0 ***
19 - 31 955.9 -547.0 -137.5 ***	21 - 34 -817.9 -471.7 -69.5 ***
19 - 54 -863.8 -454.6 -14.5 ***	21 - 20 -1173.0 -770.6 -361.4 ***
19 - 16 -832.1 -442.9 -33.7 ***	21 - 12 -1170.9 -761.7 -352.5 ***
19 - 3 -848.2 -438.9 -29.7 ***	21 - 32 -1162.3 -751.1 -343.8 ***
19 - 55 -841.8 -432.6 -23.4 ***	21 - 13 -1150.7 -741.1 -332.3 ***
19 - 30 839.2 -430.0 -20.8 ***	21 - 48 -1074.3 -665.1 -255.8 ***
19 - 28 814.0 -404.9 -4.3 ***	21 - 51 -1044.4 -631.2 -226.6 ***
19 - 12 791.1 -383.9 -23.3 ***	21 - 47 -1044.1 -634.4 -225.7 ***
19 - 37 782.5 -373.4 -35.8 ***	21 - 3 -895.0 -570.8 -161.6 ***
19 - 30 -710.8 -310.6 -93.6 ***	21 - 34 -817.9 -471.7 -69.5 ***
19 - 0 -697.6 -288.4 -120.8 ***	21 - 16 -872.0 -467.0 -378.7 ***
19 - 18 605.1 -191.7 -221.7 ***	21 - 3 -872.1 -462.9 -53.7 ***
19 - 39 -517.4 -108.5 -301.0 ***	21 - 53 -865.9 -456.7 -47.5 ***
19 - 24 -499.7 -90.2 -318.7 ***	21 - 50 -863.3 -454.1 -44.5 ***
19 - 7 -437.0 -48.7 -366.5 ***	21 - 20 -859.1 -421.0 -19.1 ***
19 - 20 -451.4 -47.1 -362.0 ***	21 - 32 -817.2 -408.0 -1.2 ***
19 - 55 -428.3 -19.1 -390.1 ***	21 - 37 -806.6 -397.4 -11.6 ***
19 - 33 -417.1 -7.9 -401.1 ***	21 - 30 -743.9 -334.7 -74.1 ***
19 - 27 -390.4 -18.8 -428.0 ***	21 - 50 -721.6 -312.4 -96.8 ***
19 - 34 -385.1 -24.1 -433.3 ***	21 - 18 -629.2 -215.8 -197.0 ***
19 - 6 -348.1 -61.1 -470.3 ***	21 - 39 -541.2 -182.3 -276.5 ***
19 - 53 -346.3 -62.5 -472.1 ***	21 - 24 -523.7 -114.5 -294.7 ***
19 - 3 -332.3 -76.5 -486.1 ***	21 - 7 -482.0 -72.8 -336.4 ***
19 - 03 -312.1 -97.1 -506.3 ***	21 - 20 -480.3 -71.3 -337.9 ***

Competencia									
83 - 37	845.5	416.3	-27.1	***					
83 - 38	582.7	-37.3	31.2						
83 - 39	750.5	-351.3	37.9						
83 - 40	469.0	254.6	158.8						
83 - 41	360.3	171.1	238.1						
83 - 42	562.6	133.4	235.8						
83 - 43	7	320.8	-111.6	297.6					
83 - 44	519.3	110.1	29.1						
83 - 45	491.2	-82.0	327.2						
83 - 46	480.0	-70.8	338.4						
83 - 47	471.1	62.9	346.3						
83 - 48	433.3	-44.1	345.1						
83 - 49	448.0	-14.8	370.4						
83 - 50	411.0	-1.8	407.4						
83 - 51	395.2	14.0	423.2						
83 - 52	375.0	34.2	443.4						
83 - 53	368.3	40.9	450.1						
83 - 54	325.5	81.7	462.9						
83 - 55	320.4	81.8	498.0						
83 - 56	312.1	97.1	506.9						
83 - 57	271.8	137.4	546.6						
83 - 58	193.5	150.7	639.1						
83 - 59	35.3	373.9	783.1						
83 - 60	111.5	420.3	829.7						
83 - 61	27.3	436.5	845.7	***					
83 - 62	73.0	462.2	891.4						
83 - 63	112.4	521.6	930.8						
83 - 64	117.6	526.8	936.1						
83 - 65	214.4	532.6	1032.8						
83 - 66	227.8	537.0	1046.2						
83 - 67	230.5	537.7	1048.6						
83 - 68	241.7	545.9	1058.1	***					
83 - 69	243.5	558.7	1067.9	***					
83 - 70	271.6	58.8	1095.0	***					
83 - 71	315.4	72.5	1134.8	***					
3 - 21	-1443.8	-1034.6	-625.4	***					
3 - 45	1428.9	1015.3	410.1						
3 - 22	1403.4	994.2	-585.0						
3 - 23	-1391.6	982.4	173.2						
3 - 67	-1151.6	947.4	113.7						
3 - 68	1330.9	921.7	-512.3						
3 - 69	1261.7	852.0	-442.8						
3 - 14	1248.0	838.8	-429.6						
3 - 29	-1233.2	824.0	-414.8						
3 - 20	-1232.6	824.4	-414.5						
3 - 18	-1223.7	814.3	-405.2						
3 - 32	-1215.0	805.9	-396.7						
3 - 13	-1203.5	794.8	-385.1						
3 - 48	1127.1	717.9	368.7						
3 - 61	1097.2	681.0	-278.8						
3 - 47	-1096.9	687.7	-278.3						
3 - 31	-1032.8	621.6	-214.4						
3 - 54	-640.7	-151.3	-122.3						
3 - 16	-620.0	519.3	-110.6						
3 - 3	924.9	513.7	-105.3						
3 - 53	918.7	505.3	-100.3						
3 - 30	-917.1	506.9	-97.2						
3 - 24	892.9	481.7	72.5						
3 - 51	873.0	-460.8	51.6						
3 - 37	859.4	-450.2	-41.0						
3 - 30	786.7	387.5	21.9						
3 - 80	774.4	-363.2	44.0						
3 - 18	682.0	268.6	144.9						
3 - 56	904.3	-185.1	224.2						
3 - 24	-376.3	-107.3	241.9						
3 - 7	334.8	-125.6	283.6						
3 - 26	333.3	-124.1	285.1						
3 - 56	505.1	-93.0	313.3						
3 - 33	494.0	-84.8	324.4						
3 - 19	-485.1	76.9	332.3						
3 - 27	467.3	58.1	351.1						
3 - 94	-462.0	-32.8	356.4						
3 - 6	-425.0	-15.8	393.4						
3 - 83	-423.2	14.0	395.5						
3 - 63	368.9	20.3	429.5						
3 - 77	382.3	22.9	436.1						
3 - 23	339.4	69.8	479.0						
3 - 58	334.3	74.9	484.9						
3 - 17	-326.0	83.2	492.4						
3 - 13	285.8	123.4	532.6						
3 - 69	-172.4	236.8	646.0						
3 - 8	-49.3	339.1	769.3						
3 - 54	27	406.5	813.7						
3 - 9	13.3	412.3	831.7	***					
3 - 15	59.0	462.8	874.4	***					
3 - 45	98.4	307.6	710.8						
3 - 1	103.6	512.8	922.0						
3 - 2	101.2	512.0	922.2						
3 - 93	200.4	605.6	1018.8	***					
3 - 89	213.9	623.3	1032.3	***					
3 - 49	216.3	625.7	1034.9	***					
3 - 4	226.8	636.0	1043.2	***					
3 - 53	211.6	644.3	1034.8	***					
3 - 11	262.6	671.8	1061.0	***					
3 - 51	302.5	711.7	1120.9	***					
3 - 31	1464.6	1054.9	645.6	***					
3 - 46	-1448.8	-1031.6	630.4	***					
3 - 23	1423.7	-1014.3	-653.3	***					
3 - 25	1411.9	1002.7	583.5	***					
3 - 27	1371.9	-962.7	535.1	***					
3 - 86	1351.2	941.0	532.8	***					
3 - 32	-1281.4	872.2	-463.0	***					
3 - 14	-1268.3	859.1	-449.9	***					
3 - 29	-1253.5	844.3	-435.1	***					
3 - 20	1252.9	-843.7	-434.3	***					
3 - 12	1243.9	834.4	-435.6	***					
3 - 32	1235.3	-826.1	-416.9	***					
3 - 13	1223.8	814.5	-405.4	***					
3 - 48	-1147.4	-1032.8	-329.6	***					
3 - 91	1117.4	798.4	-299.6	***					
3 - 31	1417.2	1043.0	-268.8	***					
3 - 31	1051.3	642.8	-142.6	***					
3 - 54	561.0	-551.8	-142.6	***					
3 - 16	1454.3	-1040.1	-130.9	***					
3 - 3	543.2	-543.2	-126.8	***					
3 - 2	542.8	-542.8	-126.7	***					
3 - 18	1403.6	-1032.1	-105.1	***					
3 - 20	1403.6	-1032.1	-105.1	***					
3 - 19	1403.6	-1032.1	-105.1	***					
3 - 21	1403.6	-1032.1	-105.1	***					
3 - 20	1403.6	-1032.1	-105.1	***					
3 - 22	1403.6	-1032.1	-105.1	***					
3 - 23	1403.6	-1032.1	-105.1	***					
3 - 24	1403.6	-1032.1	-105.1	***					
3 - 25	1403.6	-1032.1	-105.1	***					
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3 - 27	1403.6	-1032.1	-105.1	***					
3 - 28	1403.6	-1032.1	-105.1	***					
3 - 29	1403.6	-1032.1	-105.1	***					
3 - 30	1403.6	-1032.1	-105.1	***					
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3 - 32	1403.6	-1032.1	-105.1	***					
3 - 33	1403.6	-1032.1	-105.1	***					
3 - 34	1403.6	-1032.1	-105.1	***					
3 - 35	1403.6	-1032.1	-105.1	***					
3 - 36	1403.6	-1032.1	-105.1	***					
3 - 37	1403.6	-1032.1	-105.1	***					
3 - 38	1403.6	-10							

Comprobación									
17 - 31 - 1526.8 - 1117.1 - 706.5	***	10 - 2 - 19.7	369.5	796.7		6 - 17 - 683.6	- 276.7	112.5	
17 - 46 - 1511.7 - 1102.5 - 693.3		10 - 93 - 77.0	485.6	893.4	***	9 - 16 - 643.7	- 236.3	172.7	
17 - 23 - 1486.6 - 1077.4 - 668.2	***	10 - 98 - 90.4	495.6	908.8	***	9 - 09 - 532.3	- 123.1	285.1	
17 - 23 - 1474.1 - 1085.6 - 656.4	***	10 - 49 - 93.1	302.3	911.7	***	9 - 06 - 342.6	- 46.6	435.8	
17 - 67 - 1434.6 - 1025.6 - 616.4	***	10 - 4 - 103.3	312.5	921.7	***	9 - 4 - 346.6	- 67.6	471.8	
17 - 66 - 1414.1 - 1004.9 - 593.7	***	10 - 52 - 112.1	321.3	930.5	***	9 - 13 - 300.9	104.3	517.3	
17 - 62 - 1344.3 - 935.1 - 525.9	***	10 - 11 - 159.2	341.4	937.0	***	9 - 43 - 261.5	147.7	558.9	
17 - 14 - 1331.2 - 922.0 - 512.8	***	10 - 31 - 179.0	358.3	937.4	***	9 - 1 - 236.3	152.9	562.1	
17 - 28 - 1316.4 - 907.3 - 498.8		99 - 21 - 1680.3	- 1271.3	- 862.1	***	9 - 95 - 139.3	149.2	638.9	
17 - 20 - 1315.8 - 906.6 - 497.4		99 - 46 - 1603.5	- 1260.1	- 849.0	***	9 - 30 - 146.0	263.2	672.4	
17 - 13 - 1305.9 - 887.7 - 488.5	***	99 - 22 - 1640.2	- 1231.0	- 821.8	***	9 - 49 - 143.4	261.8	675.0	
17 - 32 - 1298.2 - 889.0 - 479.8	***	99 - 23 - 1628.4	- 1219.2	- 810.0	***	9 - 4 - 133.1	276.1	689.3	
17 - 12 - 1286.7 - 877.5 - 468.3	***	99 - 01 - 1588.4	- 1179.2	- 770.0	***	9 - 35 - 124.3	284.9	694.1	
17 - 48 - 1210.3 - 801.1 - 391.9	***	99 - 06 - 1307.7	- 1149.5	- 749.3	***	9 - 11 - 97.1	311.9	721.1	
17 - 61 - 1180.3 - 771.1 - 361.9	***	99 - 02 - 1697.9	- 1088.7	- 679.3	***	9 - 51 - 57.4	351.8	761.0	
17 - 47 - 1180.1 - 770.9 - 361.7	***	99 - 14 - 1434.3	- 1075.9	- 666.4	***				
17 - 31 - 1116.0 - 706.8 - 297.6	***	99 - 29 - 1470.0	- 1000.8	- 651.6	***	94 - 21 - 1830.3	- 1441.1	- 1031.6	***
17 - 54 - 1023.9 - 614.7 - 303.3	***	99 - 20 - 1469.4	- 1000.2	- 651.0	***	94 - 49 - 1335.1	- 1423.9	- 1016.7	***
17 - 16 - 1017.2 - 603.0 - 193.8	***	99 - 12 - 1480.1	- 1031.3	- 642.1	***	94 - 22 - 1819.9	- 1494.6	- 991.6	***
17 - 3 - 1008.1 - 598.7 - 189.7	***	99 - 32 - 1421.8	- 1042.0	- 633.4	***	94 - 23 - 1798.1	- 1388.9	- 979.7	***
17 - 55 - 1001.9 - 592.7 - 183.1	***	99 - 13 - 1440.1	- 1031.1	- 621.9	***	94 - 47 - 1758.1	- 1348.9	- 939.7	***
17 - 50 - 999.2 - 590.0 - 180.8	***	99 - 48 - 1330.9	- 954.7	- 545.3	***	94 - 46 - 1737.4	- 1328.3	- 919.0	***
17 - 28 - 974.1 - 564.1 - 155.7	***	99 - 01 - 1333.9	- 924.7	- 513.3	***	94 - 45 - 1667.2	- 1298.3	- 949.1	***
17 - 32 - 953.2 - 544.0 - 134.8	***	99 - 47 - 1333.1	- 924.3	- 513.3	***	94 - 14 - 1654.5	- 1243.3	- 836.1	***
17 - 37 - 942.6 - 533.4 - 124.4	***	99 - 31 - 1269.6	- 860.4	- 451.2	***	94 - 29 - 1639.7	- 1239.3	- 827.1	***
17 - 30 - 879.8 - 470.6 - 81.4	***	99 - 34 - 1177.3	- 768.3	- 359.1	***	94 - 20 - 1459.2	- 1230.0	- 820.3	***
17 - 60 - 817.6 - 448.4 - 39.2	***	99 - 16 - 1165.8	- 756.6	- 347.4	***	94 - 13 - 1630.2	- 1221.0	- 811.8	***
17 - 18 - 761.2 - 511.7 - 61.7		99 - 3 - 1161.7	- 752.5	- 343.3	***	94 - 32 - 1611.6	- 1312.4	- 803.3	***
17 - 29 - 677.5 - 508.3 - 140.9		99 - 54 - 1155.5	- 746.3	- 337.1	***	94 - 13 - 1610.0	- 1200.8	- 794.6	***
17 - 24 - 639.7 - 503.3 - 159.7		99 - 50 - 1152.8	- 742.6	- 334.4	***	94 - 48 - 1333.4	- 1124.4	- 715.1	***
17 - 7 - 618.8 - 208.8 - 200.4		99 - 28 - 1122.7	- 718.9	- 303.9	***	94 - 01 - 1503.7	- 1094.3	- 683.3	***
17 - 26 - 515.6 - 207.3 - 201.9		99 - 51 - 1106.0	- 997.6	- 281.4	***	94 - 47 - 1503.5	- 1094.3	- 685.1	***
17 - 54 - 548.3 - 179.1 - 250.1		99 - 37 - 1096.8	- 987.0	- 277.8	***	94 - 31 - 1439.3	- 1090.1	- 620.9	***
17 - 33 - 577.2 - 168.0 - 241.2		99 - 30 - 1053.4	- 974.2	- 211.0	***	94 - 54 - 1347.2	- 938.0	- 528.8	***
17 - 19 - 569.2 - 160.0 - 249.2		99 - 40 - 1011.2	- 902.0	- 192.8	***	94 - 16 - 1335.9	- 926.3	- 517.1	***
17 - 23 - 559.5 - 141.3 - 267.9		99 - 18 - 918.3	- 903.3	- 91.9	***	94 - 3 - 1331.4	- 922.2	- 513.6	***
17 - 34 - 543.2 - 136.0 - 273.2		99 - 36 - 831.1	- 821.9	- 41.7	***	94 - 55 - 1133.2	- 916.0	- 300.8	***
17 - 6 - 508.1 - 98.9 - 310.2		99 - 24 - 813.3	- 804.1	- 5.1		94 - 36 - 1127.6	- 913.4	- 504.7	***
17 - 38 - 504.2 - 92.1 - 301.5		99 - 7 - 771.6	- 762.4	- 46.8		94 - 28 - 1297.6	- 967.3	- 458.1	***
17 - 48 - 472.1 - 62.9 - 346.3		99 - 35 - 741.9	- 732.7	- 37.3		94 - 57 - 1265.9	- 956.7	- 487.5	***
17 - 77 - 465.5 - 50.3 - 352.9		99 - 53 - 730.8	- 721.5	- 87.6		94 - 30 - 1201.2	- 799.0	- 364.1	***
17 - 15 - 424.2 - 30.8 - 359.5		99 - 19 - 722.8	- 713.0	- 91.6		94 - 01 - 1181.0	- 771.1	- 362.6	***
17 - 34 - 417.3 - 8.3 - 400.9		99 - 21 - 704.1	- 294.3	- 114.3		94 - 18 - 1084.3	- 879.1	- 261.6	***
17 - 10 - 368.9 - 40.3 - 449.4		99 - 34 - 698.8	- 289.5	- 115.6		94 - 59 - 1000.8	- 991.6	- 182.4	***
17 - 09 - 223.6 - 133.0 - 362.8		99 - 4 - 661.7	- 251.5	- 156.5		94 - 24 - 983.0	- 573.9	- 164.7	***
17 - 3 - 192.4 - 83.2 - 362.9		99 - 63 - 659.9	- 250.7	- 158.5		94 - 7 - 941.3	- 532.1	- 122.5	***
17 - 64 - 85.9 - 323.3 - 722.1		99 - 5 - 646.0	- 236.8	- 171.4		94 - 25 - 939.4	- 530.6	- 131.4	***
17 - 3 - 59.4 - 339.3 - 748.7		99 - 38 - 625.7	- 218.5	- 162.7		94 - 56 - 911.7	- 502.5	- 93.3	***
17 - 15 - 24.2 - 385.0 - 784.8		99 - 77 - 619.1	- 209.5	- 169.3		94 - 33 - 900.3	- 491.3	- 82.1	***
17 - 43 - 15.2 - 424.4 - 833.5	***	99 - 23 - 576.2	- 167.0	- 342.2		94 - 19 - 924.4	- 483.4	- 74.2	***
17 - 1 - 20.4 - 429.6 - 838.3	***	99 - 38 - 571.1	- 161.9	- 247.3		94 - 27 - 873.8	- 464.6	- 55.4	***
17 - 13 - 20.6 - 429.8 - 839.0	***	99 - 17 - 562.8	- 153.5	- 235.6		94 - 34 - 868.3	- 459.3	- 50.1	***
17 - 95 - 117.2 - 526.4 - 935.6	***	99 - 10 - 522.3	- 113.3	- 261.0		94 - 6 - 871.5	- 422.3	- 13.1	***
17 - 88 - 130.7 - 539.9 - 940.1	***	99 - 8 - 286.1	- 123.1	- 322.5		94 - 43 - 829.7	- 420.5	- 11.5	***
17 - 49 - 132.3 - 542.9 - 951.7	***	99 - 64 - 239.5	- 106.3	- 371.9		94 - 3 - 815.7	- 388.3	- 3.7	***
17 - 1 - 143.6 - 582.8 - 962.0	***	99 - 9 - 223.5	- 103.7	- 394.9		94 - 63 - 799.4	- 386.2	- 23.0	***
17 - 53 - 152.4 - 561.6 - 970.8	***	99 - 15 - 177.4	- 93.4	- 304.6		94 - 77 - 783.8	- 379.6	- 29.6	***
17 - 11 - 179.3 - 548.7 - 997.9	***	99 - 45 - 153.8	- 70.7	- 280.0		94 - 23 - 745.9	- 336.7	- 72.5	***
17 - 51 - 219.3 - 626.3 - 1037.7	***	99 - 1 - 133.2	- 70.7	- 285.2		94 - 56 - 740.8	- 331.6	- 77.6	***
10 - 21 - 1567.2 - 1158.0 - 748.8	***	99 - 2 - 133.3	- 70.8	- 285.3		94 - 12 - 732.3	- 323.3	- 85.9	***
10 - 44 - 1552.0 - 1142.8 - 733.6	***	99 - 95 - 36.4	- 372.6	- 781.0		94 - 10 - 691.3	- 285.1	- 136.1	***
10 - 22 - 1526.9 - 1117.7 - 708.5	***	99 - 08 - 22.9	- 386.3	- 793.5		94 - 09 - 578.5	- 239.7	- 39.5	***
10 - 20 - 1515.1 - 1105.0 - 696.7	***	99 - 49 - 30.3	- 386.9	- 795.1		94 - 0 - 455.8	- 206.6	- 362.6	***
10 - 07 - 1473.1 - 1065.9 - 656.7	***	99 - 4 - 10.0	- 392.4	- 803.4		94 - 18 - 490.0	- 219.2	- 428.6	***
10 - 06 - 1454.3 - 1045.1 - 633.9	***	99 - 55 - 1.2	- 408.0	- 811.3		94 - 24 - 493.0	- 373.9	- 164.7	***
10 - 02 - 1364.6 - 974.3 - 606.2	***	99 - 11 - 23.9	- 433.1	- 844.2	***	94 - 45 - 308.1	- 101.1	- 510.3	***
10 - 14 - 1321.4 - 882.1 - 533.0	***	99 - 51 - 63.7	- 474.9	- 884.1	***	94 - 1 - 302.9	- 106.3	- 519.5	***
10 - 47 - 1220.4 - 811.2 - 402.2	***	99 - 14 - 1607.9	- 119.7	- 789.5	***	94 - 2 - 302.7	- 106.3	- 519.7	***
10 - 31 - 1156.3 - 747.0 - 337.6	***	99 - 29 - 1593.1	- 118.9	- 774.7	***	94 - 21 - 1866.3	- 1477.1	- 1047.8	***
10 - 54 - 1064.1 - 654.9 - 245.7	***	99 - 20 - 1592.3	- 116.3	- 774.1	***	94 - 46 - 1631.1	- 1441.9	- 1032.7	***
10 - 16 - 1052.5 - 443.3 - 234.1	***	99 - 12 - 1381.6	- 117.4	- 765.2	***	94 - 22 - 1826.0	- 1416.8	- 1027.6	***
10 - 3 - 1048.4 - 639.2 - 230.0	***	99 - 32 - 1374.9	- 116.7	- 756.5	***	94 - 25 - 1814.1	- 1404.9	- 993.7	***
10 - 35 - 1042.3 - 633.0 - 223.8	***	99 - 13 - 1363.4	- 115.4	- 745.0	***	94 - 67 - 1776.1	- 1364.9	- 933.8	***
10 - 30 - 1039.3 - 630.1 - 221.1	***	99 - 8 - 1470.0	- 107.1	- 665.5	***	94 - 66 - 1733.4	- 1344.2	- 933.0	***
10 - 28 - 1014.4 - 605.2 - 196.0	***	99 - 61 - 1357.1	- 104.7	- 638.7	***	94 - 62 - 1681.7	- 1274.5	- 865.3	***
10 - 52 - 993.4 - 584.2 - 175.0	***	99 - 47 - 1450.8	- 104.7	- 638.8	***	94 - 14 - 1670.1	- 1261.3	- 852.4	***
10 - 37 - 982.9 - 571.7 - 164.3	***	99 - 31 - 1397.2	- 98.5	- 574.3	***	94 - 29 - 1655.7	- 1246.5	- 837.3	***
10 - 30 - 920.1 - 510.9 - 101.7	***	99 - 34 - 1300.6	- 891.4	- 482.3	***	94 - 20 - 1655.2	- 1246.0	- 836.8	***
10 - 40 - 807.9 - 488.7 - 99.4	***	99 - 16 - 1288.9	- 747.0	- 470.3	***	94 - 12 - 1646.2	- 1237.6	- 827.6	***
10 - 18 - 805.3 - 392.0 - 91.4		99 - 3 - 1284.8	- 747.5	- 466.4	***	94 - 32 - 1937.6	- 1520.1	- 819.1	***
10 - 39 - 717.7 - 308.0 - 100.7		99 - 55 - 1278.5	- 704.9	- 460.2	***	94 - 13 - 1626.0	- 1216.8	- 807.6	***
10 - 2 - 700.0 - 290.8 - 118.1		99 - 50 - 1276.0	- 686.8	- 437.0	***	94 - 44 - 1549.6	- 1140.4	- 731.2	***
10 - 7 - 658.1 - 249.0 - 101.2		99 - 28 - 1230.8	- 641.0	- 432.4	***	94 - 61 - 1519.7	- 1110.3	- 701.3	***
10 - 36 - 656.7 - 247.3 - 101.7		99 - 52 - 1229.9	- 620.7	- 411.3	***	94 - 47 - 1519.3	- 1110.3	- 701.1	***
10 - 36 - 622.0 - 219.4 - 189.8		99 - 57 - 1219.1	- 610.4	- 400.9	***	94 - 31 - 1433.3	- 1065.1	- 636.9	***
10 - 33									



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
SECCIÓN GENERAL DE BIBLIOTECAS

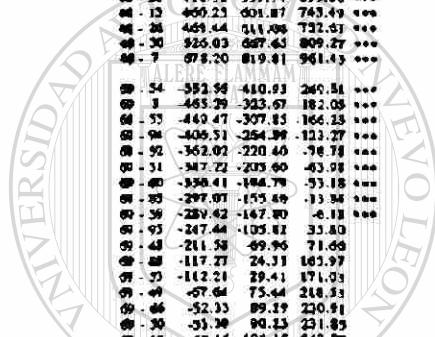
Comisiones									
9 - 94 - 864-3 - 475.3	56.1	***	45 - 18 - 1189.9	-777.7	-382.7	609	2 - 3 - 1437.9	-1026.7	-689.5
9 - 6 - 841.5 - 463.3	29.1	***	45 - 39 - 1101.9	-612.7	-283.5	609	2 - 55 - 1451.7	-1022.5	-613.5
9 - 83 - 845.7 - 463.3	27.3	***	45 - 24 - 1084.1	-674.9	-261.7	609	2 - 50 - 1429.9	-1019.8	-610.7
9 - 5 - 831.7 - 422.3	113.3	***	45 - 7 - 1042.6	-633.2	-224.0	609	2 - 28 - 1403.9	-994.7	-583.5
9 - 43 - 811.4 - 462.3	13.9	***	45 - 20 - 1040.9	-691.7	-222.1	609	2 - 53 - 1383.0	-973.3	-564.6
9 - 77 - 804.8 - 345.6	13.6	***	45 - 56 - 1012.7	-605.5	-194.3	609	2 - 57 - 1372.4	-963.3	-554.0
9 - 23 - 762.0 - 332.8	56.4	***	45 - 33 - 1001.6	-592.4	-185.2	609	2 - 30 - 1309.6	-900.4	-491.2
9 - 76 - 738.8 - 347.8	41.4	***	45 - 27 - 974.9	-565.7	-156.3	609	2 - 60 - 1287.4	-878.2	-469.0
9 - 17 - 748.5 - 339.3	69.9	***	45 - 9 - 969.6	-560.4	-151.2	609	2 - 18 - 1189.0	-771.0	-388.1
9 - 10 - 703.3 - 299.1	110.1	***	45 - 6 - 932.6	-523.4	-114.2	609	2 - 59 - 1107.3	-895.1	-288.3
9 - 09 - 594.9 - 185.7	233.3	***	45 - 23 - 930.8	-521.6	-112.4	609	2 - 24 - 1089.3	-683.3	-271.1
9 - 8 - 471.8 - 42.0	709.4	***	45 - 5 - 916.8	-507.6	-98.4	609	2 - 7 - 1041.8	-698.6	-229.4
9 - 64 - 425.2 - 16.0	393.2	***	45 - 63 - 896.5	-487.1	-78.1	609	2 - 26 - 1046.3	-697.1	-227.9
9 - 13 - 363.5 - 43.7	454.9	***	45 - 77 - 889.9	-467.0	-71.3	609	2 - 34 - 1018.1	-608.9	-199.7
9 - 43 - 324.1 - 83.1	494.3	***	45 - 23 - 847.0	-437.6	-78.6	609	2 - 31 - 1007.0	-597.8	-186.5
9 - 1 - 318.9 - 90.3	499.2	***	45 - 38 - 841.9	-432.7	-73.3	609	2 - 19 - 999.1	-589.9	-180.7
9 - 2 - 318.7 - 90.3	499.7	***	45 - 17 - 833.6	-428.4	-73.2	609	2 - 27 - 980.3	-571.1	-161.9
9 - 93 - 222.1 - 181.1	516.3	***	45 - 10 - 793.4	-384.2	-29.0	609	2 - 94 - 975.0	-565.8	-156.6
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9 - 4 - 195.8 - 213.4	622.4	***	45 - 9 - 494.3	-45.1	-324.1	609	2 - 9 - 922.2	-513.0	-163.8
9 - 93 - 186.9 - 222.3	631.5	***	45 - 15 - 446.6	-39.4	-369.8	609	2 - 63 - 901.9	-492.7	-83.5
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9 - 31 - 120.0 - 289.2	698.4	***	45 - 2 - 403.6	-5.4	-414.6	609	2 - 23 - 812.4	-443.2	-34.0
13 - 24 - 1912.0 - 1502.8	-1092.6	***	45 - 93 - 307.2	-102.1	-91.2	609	2 - 36 - 847.3	-436.1	-28.7
13 - 46 - 1894.8 - 1427.6	-1078.4	***	45 - 38 - 293.7	-113.5	-924.7	609	2 - 17 - 839.0	-429.8	-26.0
13 - 22 - 1871.7 - 1442.3	-1033.3	***	45 - 39 - 291.1	-118.1	-927.3	609	2 - 10 - 795.7	-369.3	-19.7
13 - 25 - 1859.8 - 1450.8	-1014.4	***	45 - 4 - 280.8	-128.4	-937.6	609	2 - 69 - 685.4	-276.2	133.0
13 - 47 - 1819.8 - 1410.6	-1001.4	***	45 - 33 - 272.0	-137.2	-948.4	609	2 - 8 - 552.3	-253.1	256.1
13 - 05 - 1799.1 - 1389.8	980.7	***	45 - 11 - 243.9	-164.3	-973.4	609	2 - 44 - 515.7	-106.5	302.7
13 - 42 - 1739.4 - 1330.4	911.9	***	45 - 31 - 203.1	-161.3	-913.3	609	2 - 9 - 499.7	-90.8	316.7
13 - 14 - 1716.2 - 1309.2	-987.8	***	1 - 21 - 1935.8	-1347.4	-1138.2	609	2 - 15 - 454.0	-44.8	364.4
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13 - 20 - 1700.8 - 1291.3	-982.3	***	1 - 22 - 1916.2	-1507.0	-1057.8	609	2 - 1 - 409.4	-0.2	400.0
13 - 12 - 1691.0 - 1272.7	-973.3	***	1 - 23 - 1904.4	-1495.2	-1086.0	609	2 - 92 - 312.6	98.6	503.8
13 - 32 - 1643.3 - 1274.1	-804.9	***	1 - 47 - 1864.4	-1455.2	-1046.0	609	2 - 33 - 299.1	110.1	519.3
13 - 13 - 1671.7 - 1262.5	-833.3	***	1 - 60 - 1843.7	-1434.5	-1025.3	609	2 - 49 - 296.5	112.7	521.9
13 - 48 - 1595.3 - 1186.1	-776.9	***	1 - 62 - 1774.0	-1364.8	-935.6	609	2 - 4 - 286.2	123.9	333.2
13 - 49 - 1595.4 - 1136.2	-747.0	***	1 - 61 - 1700.8	-1351.6	-942.4	609	2 - 33 - 277.4	131.8	341.0
13 - 47 - 1595.2 - 1136.0	-746.8	***	1 - 29 - 1748.0	-1356.8	-927.6	609	1 - 11 - 250.4	158.4	308.0
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13 - 36 - 1408.9 - 999.7	-590.5	***	1 - 17 - 1736.5	-1327.3	-918.1	609	93 - 21 - 1053.4	-1644.2	-1233.0
13 - 10 - 1377.2 - 986.0	-578.8	***	1 - 31 - 1727.8	-1318.6	-909.5	609	93 - 46 - 1038.2	-1629.0	-1219.5
13 - 3 - 1393.1 - 981.9	-574.7	***	1 - 13 - 1716.3	-1307.1	-897.9	609	93 - 22 - 2013.1	-1603.9	-1194.7
13 - 35 - 1386.9 - 977.7	-564.3	***	1 - 48 - 1639.9	-1230.7	-871.3	609	93 - 23 - 2101.2	-1392.0	-1162.6
13 - 50 - 1384.3 - 973.1	-563.9	***	1 - 51 - 1619.0	-1200.8	-871.6	609	93 - 67 - 1951.2	-1552.0	-1142.5
13 - 28 - 1359.1 - 949.9	-540.7	***	1 - 47 - 1609.7	-1200.9	-871.5	609	93 - 68 - 1870.9	-1601.6	-1052.4
13 - 32 - 1338.2 - 929.0	-519.8	***	1 - 52 - 1609.7	-1200.9	-871.5	609	93 - 14 - 1857.6	-1448.4	-1039.2
13 - 37 - 1327.6 - 914.4	-509.2	***	1 - 31 - 1545.6	-1130.4	-772.2	609	93 - 29 - 1842.8	-1433.6	-1024.4
13 - 30 - 1294.9 - 913.7	-485.3	***	1 - 54 - 1453.5	-1044.3	-635.1	609	93 - 20 - 1842.2	-1433.1	-1023.5
13 - 60 - 1242.7 - 833.5	-424.3	***	1 - 10 - 1441.8	-1032.6	-624.1	609	93 - 12 - 1833.3	-1424.1	-1014.3
13 - 18 - 1150.2 - 716.8	-573.1	***	1 - 3 - 1437.7	-1028.8	-619.3	609	93 - 32 - 1824.7	-1619.3	-1046.5
13 - 36 - 1042.5 - 653.3	-244.1	***	1 - 55 - 1431.3	-1022.3	-613.1	609	93 - 13 - 1813.1	-1403.9	-994.7
13 - 24 - 1044.7 - 653.3	-228.4	***	1 - 39 - 1428.9	-1019.7	-610.9	609	93 - 48 - 1753.7	-1327.3	-916.3
13 - 1 - 1003.0 - 393.8	-184.8	***	1 - 28 - 1403.0	-994.5	-583.3	609	93 - 61 - 1706.8	-1297.6	-886.4
13 - 26 - 1001.3 - 392.3	-185.1	***	1 - 71 - 1382.8	-973.6	-584.4	609	93 - 47 - 1705.6	-1297.4	-888.2
13 - 5 - 973.4 - 364.2	-155.0	***	1 - 57 - 1372.2	-953.0	-583.8	609	93 - 31 - 1642.4	-1233.2	-824.0
13 - 35 - 962.2 - 353.0	-143.8	***	1 - 30 - 1309.3	-900.3	-491.1	609	93 - 34 - 1550.3	-1141.1	-731.9
13 - 19 - 924.3 - 343.1	-133.9	***	1 - 60 - 1287.1	-878.0	-468.8	609	93 - 16 - 1534.6	-1129.4	-720.2
13 - 27 - 923.5 - 326.3	-117.1	***	1 - 18 - 1194.8	-881.4	-367.9	609	93 - 3 - 1534.5	-1123.1	-716.1
13 - 94 - 929.2 - 321.0	-111.8	***	1 - 59 - 1107.1	-897.9	-287.7	609	93 - 55 - 1528.3	-1119.1	-709.9
13 - 4 - 893.2 - 304.0	-74.8	***	1 - 24 - 1089.3	-880.1	-270.9	609	93 - 50 - 1523.7	-1116.5	-707.3
13 - 63 - 891.4 - 482.2	-73.0	***	1 - 7 - 1047.0	-838.4	-229.2	609	93 - 28 - 1500.3	-1091.3	-682.1
13 - 5 - 877.4 - 468.2	-59.9	***	1 - 20 - 1041.0	-830.9	-227.2	609	93 - 52 - 1479.6	-1070.4	-661.2
13 - 43 - 857.1 - 447.9	-58.7	***	1 - 56 - 1017.9	-808.7	-193.5	609	93 - 27 - 1469.0	-1039.8	-630.6
13 - 22 - 850.5 - 447.3	-52.1	***	1 - 35 - 1006.0	-597.8	-188.6	609	93 - 70 - 1406.1	-997.1	-547.9
13 - 23 - 807.6 - 388.4	-10.8	***	1 - 19 - 928.9	-587.9	-180.5	609	93 - 40 - 1384.0	-974.9	-505.8
13 - 58 - 590.3 - 393.3	-15.9	***	1 - 27 - 990.1	-570.9	-161.7	609	93 - 18 - 1291.6	-878.1	-464.2
13 - 17 - 794.2 - 385.0	-24.2	***	1 - 24 - 974.6	-565.6	-154.4	609	93 - 39 - 1203.9	-794.7	-385.8
13 - 10 - 753.0 - 344.6	-64.4	***	1 - 6 - 937.8	-528.6	-119.4	609	93 - 26 - 1186.1	-776.9	-361.8
13 - 69 - 640.6 - 231.4	-177.8	***	1 - 93 - 936.0	-526.8	-117.6	609	93 - 7 - 1144.4	-735.2	-326.0
13 - 4 - 517.5 - 108.3	-300.9	***	1 - 3 - 922.0	-512.9	-103.6	609	93 - 26 - 1142.9	-735.7	-324.5
13 - 94 - 470.9 - 61.7	-547.3	***	1 - 65 - 901.7	-492.3	-83.3	609	93 - 34 - 1114.8	-703.6	-296.4
13 - 9 - 454.9 - 41.7	-365.5	***	1 - 77 - 895.1	-485.9	-76.7	609	93 - 33 - 1101.6	-694.4	-205.2
13 - 43 - 364.8 - 39.4	-448.6	***	1 - 23 - 851.2	-443.0	-33.8	609	93 - 19 - 1095.7	-686.3	-277.3
13 - 1 - 364.4 - 44.8	-454.0	***	1 - 2 - 409.0	-0.2	-404.0	609	93 - 27 - 1076.9	-667.7	-258.5
13 - 33 - 267.4 - 141.4	-330.6	***	1 - 93 - 312.4	-95.8	-506.0	609	93 - 94 - 1071.6	-602.4	-253.2
13 - 68 - 234.3 - 154.9	-564.1	***	1 - 88 - 288.9	-110.3	-519.5	609	93 - 6 - 1034.6	-625.4	-216.3
13 - 49 - 231.7 - 127.5	-569.7	***	1 - 4 - 296.3	-112.9	-526.3	609	93 - 83 - 1032.8	-623.6	-214.4
13 - 4 - 241.3 - 167.7	-376.9	***	1 - 6 - 315.3	-106.3	-509.9	609	93 - 5 - 1016.8	-609.6	-200.4
13 - 53 - 222.6 - 176.6	-363.8	***	1 - 9 - 499.3	-90.3	-518.9	609	93 - 65 - 999.3	-589.3	-180.1
13 - 11 - 205.6 - 303.6	-612.8	***	1 - 13 - 453.8	-44.6	-504.6	609	93 - 77 - 991.9	-592.7	-173.5
13 - 51 - 163.7 - 243.8	-652.7	***	1 - 43 - 414.4	-5.2	-404.0	609	93 - 23 - 949.0	-539.8	-170.6
13 - 16 - 1753.6 - 1394.6	-957.2	***	1 - 2 - 409.0	-0.2	-409.6	609	93 - 17 - 933.0	-526.4	-177.2
45 - 46 - 1936.1 - 1526.9	-1117.7	***	2 - 26 - 1946.7	-1547.5	-1136.3	***	98 - 10 - 2031.6	-1624.4	***
45 - 22 - 1911.0 - 1901.8	-1092.4	***	2 - 43 - 1541.3	-1532.3	-1123.1	***	98 - 66 - 2036.5	-1617.3	-1206.1
45 - 28 - 1899.2 - 1490.0	-1080.8	***	2 - 22 - 1916.4						

Comisiones											
41 - 32 - 1638.1	-1428.9	-1919.7	***	41 - 22 - 2039.4	-1630.2	-1231.0	***	41 - 35 - 436.9	-31.7	387.3	
41 - 13 - 1626.6	-1417.6	-1906.2	***	41 - 25 - 3027.6	-1618.4	-1208.3	***	41 - 36 - 424.3	-191.4	390.1	
41 - 49 - 1750.2	-1541.0	-931.8	***	41 - 67 - 1987.6	-1578.4	-1169.2	***	41 - 37 - 418.0	-88.8	400.4	
41 - 51 - 1726.2	-1311.0	-901.8	***	41 - 66 - 1965.9	-1557.7	-1148.5	***	41 - 38 - 381.3	27.0	434.2	
41 - 57 - 1726.0	-1310.8	-901.6	***	41 - 62 - 1897.1	-1487.9	-1078.7	***	41 - 39 - 341.3	44.9	476.1	
41 - 31 - 1655.9	-1240.7	-837.3	***	41 - 14 - 1884.0	-1474.8	-1003.6	***	41 - 21 - 2115.6	-1704.6	-1297.2	***
41 - 34 - 1363.8	-1154.6	-743.4	***	41 - 20 - 1806.6	-1439.8	-1020.2	***	41 - 40 - 2100.4	-1691.2	-1281.3	***
41 - 19 - 1352.1	-1142.9	-723.7	***	41 - 12 - 1839.6	-1439.4	-1041.2	***	41 - 22 - 2015.3	-1666.1	-1256.5	***
41 - 3 - 1548.0	-1133.6	-729.6	***	41 - 32 - 1831.0	-1441.8	-1032.6	***	41 - 23 - 2043.8	-1634.2	-1249.0	***
41 - 35 - 1541.8	-1132.6	-723.4	***	41 - 13 - 1839.3	-1439.3	-1021.1	***	41 - 27 - 2023.9	-1614.3	-1205.1	***
41 - 30 - 1539.1	-1130.9	-720.2	***	41 - 44 - 1763.1	-1323.9	-941.7	***	41 - 28 - 2002.7	-1591.3	-1184.3	***
41 - 36 - 1514.0	-1104.6	-695.6	***	41 - 91 - 1733.1	-1323.9	-914.7	***	41 - 29 - 1931.0	-1571.0	-1114.6	***
41 - 22 - 1493.1	-1043.8	-694.3	***	41 - 42 - 1732.9	-1323.7	-914.5	***	41 - 30 - 1919.8	-1510.6	-1101.4	***
41 - 57 - 1442.3	-1023.3	-664.1	***	41 - 31 - 1658.7	-1259.5	-850.4	***	41 - 31 - 1903.0	-1495.8	-1086.6	***
41 - 30 - 1419.7	-1010.5	-661.3	***	41 - 54 - 1376.7	-1167.5	-756.8	***	41 - 32 - 1904.5	-1494.3	-1086.1	***
41 - 60 - 1397.3	-984.3	-579.8	***	41 - 16 - 1365.0	-1155.8	-746.6	***	41 - 33 - 1886.9	-1477.7	-1056.3	***
41 - 18 - 1303.0	-991.6	-478.2	***	41 - 3 - 1560.9	-1151.7	-742.5	***	41 - 34 - 1875.3	-1494.1	-1056.7	***
41 - 39 - 1217.6	-804.2	-394.0	***	41 - 55 - 1554.7	-1143.5	-756.3	***	41 - 35 - 1798.9	-1382.7	-980.5	***
41 - 24 - 1199.6	-790.4	-381.3	***	41 - 50 - 1552.0	-1142.8	-733.4	***	41 - 36 - 1769.0	-1335.8	-930.6	***
41 - 7 - 1157.8	-748.6	-339.3	***	41 - 28 - 1526.9	-1117.7	-706.5	***	41 - 37 - 1768.8	-1339.6	-930.4	***
41 - 26 - 1156.4	-747.2	-338.0	***	41 - 12 - 1506.0	-1096.8	-687.4	***	41 - 38 - 1704.6	-1295.4	-886.2	***
41 - 56 - 1124.2	-719.0	-309.8	***	41 - 37 - 1499.4	-1085.3	-670.0	***	41 - 39 - 1612.5	-1203.3	-794.1	***
41 - 39 - 1117.1	-707.9	-293.7	***	41 - 20 - 1432.6	-1023.4	-614.2	***	41 - 40 - 1600.8	-1191.6	-783.4	***
41 - 36 - 1109.1	-669.9	-268.7	***	41 - 40 - 1410.4	-1002.4	-592.8	***	41 - 3 - 1596.7	-1189.6	-778.4	***
41 - 27 - 1090.6	-661.2	-272.0	***	41 - 18 - 1318.0	-908.3	-491.1	***	41 - 35 - 1590.3	-1181.3	-772.1	***
41 - 34 - 1083.1	-673.9	-266.7	***	41 - 39 - 1320.3	-821.1	-411.5	***	41 - 36 - 1581.9	-1178.7	-769.5	***
41 - 6 - 1048.0	-638.4	-229.6	***	41 - 24 - 1212.5	-803.3	-394.1	***	41 - 37 - 1582.7	-1153.3	-764.3	***
41 - 10 - 1046.3	-637.3	-227.8	***	41 - 7 - 1170.7	-701.3	-332.3	***	41 - 38 - 1582.7	-1153.3	-764.3	***
41 - 3 - 1032.5	-623.1	-219.9	***	41 - 26 - 1169.3	-756.1	-330.9	***	41 - 39 - 1541.6	-1132.6	-723.4	***
41 - 52 - 1012.0	-602.8	-193.4	***	41 - 54 - 1141.1	-731.9	-327.7	***	41 - 40 - 1511.2	-1122.0	-712.8	***
41 - 77 - 1007.5	-601.2	-197.9	***	41 - 32 - 1150.0	-720.8	-311.4	***	41 - 41 - 1466.9	-1059.3	-650.1	***
41 - 23 - 962.5	-553.3	-144.1	***	41 - 19 - 1122.0	-711.8	-301.4	***	41 - 42 - 1311.8	-910.4	-527.0	***
41 - 38 - 937.4	-348.3	-139.9	***	41 - 27 - 1101.2	-694.0	-284.9	***	41 - 43 - 1266.1	-819.5	-447.7	***
41 - 17 - 948.1	-339.8	-130.7	***	41 - 94 - 1098.6	-683.8	-279.6	***	41 - 44 - 1244.4	-839.4	-430.0	***
41 - 40 - 908.8	-459.6	-90.4	***	41 - 6 - 1060.9	-617.1	-242.3	***	41 - 7 - 1200.0	-797.4	-386.1	***
41 - 69 - 763.3	-344.3	-22.8	***	41 - 83 - 1059.1	-649.9	-240.7	***	41 - 8 - 1205.1	-795.9	-386.7	***
41 - 4 - 672.4	-263.2	146.0	***	41 - 5 - 1043.2	-635.0	-226.8	***	41 - 9 - 1177.0	-767.8	-358.6	***
41 - 94 - 623.7	-216.6	192.6	***	41 - 63 - 1034.9	-613.7	-206.3	***	41 - 10 - 1165.8	-756.6	-347.4	***
41 - 9 - 604.7	-200.5	208.7	***	41 - 77 - 1018.3	-605.1	-199.9	***	41 - 11 - 1157.9	-748.7	-339.3	***
41 - 13 - 584.1	-154.9	294.3	***	41 - 23 - 975.4	-564.2	-157.9	***	41 - 12 - 1135.1	-719.9	-320.7	***
41 - 43 - 524.7	-113.3	293.2	***	41 - 58 - 970.3	-561.1	-151.9	***	41 - 13 - 1153.8	-714.6	-315.4	***
41 - 1 - 518.5	-110.3	288.9	***	41 - 17 - 967.0	-537.8	-143.6	***	41 - 4 - 1096.8	-687.6	-278.4	***
41 - 2 - 519.3	-110.1	299.1	***	41 - 10 - 921.7	-512.5	-143.3	***	41 - 5 - 1093.0	-685.8	-276.6	***
41 - 91 - 422.7	-113.5	305.7	***	41 - 69 - 809.4	-399.2	-220.7	***	41 - 6 - 1081.0	-671.8	-262.6	***
41 - 49 - 400.8	2.6	411.8	***	41 - 8 - 853.3	-278.1	133.1	***	41 - 7 - 1060.8	-661.6	-242.4	***
41 - 4 - 396.3	12.9	422.1	***	41 - 64 - 638.6	-229.4	179.8	***	41 - 8 - 1054.1	-654.9	-235.7	***
41 - 50 - 387.5	21.7	430.9	***	41 - 9 - 622.6	-213.4	195.8	***	41 - 9 - 1066.2	-657.0	-197.4	***
41 - 11 - 360.4	45.8	438.0	***	41 - 13 - 376.9	-167.7	211.5	***	41 - 10 - 947.8	-588.7	-179.5	***
41 - 51 - 320.6	56.6	437.7	***	41 - 15 - 337.6	-128.4	200.8	***	41 - 11 - 957.6	-548.4	-179.3	***
41 - 21 - 2069.5	-1600.3	-1251.1	***	41 - 1 - 332.4	-122.2	286.0	***	41 - 12 - 957.6	-548.4	-179.3	***
41 - 46 - 2054.3	-1649.1	-1233.9	***	41 - 2 - 332.2	-123.0	286.2	***	41 - 13 - 957.6	-548.4	-179.3	***
41 - 22 - 2039.2	-1620.0	-1210.8	***	41 - 93 - 435.5	-263.3	382.8	***	41 - 14 - 957.6	-548.4	-179.3	***
41 - 25 - 2017.3	-1608.1	-1193.9	***	41 - 38 - 422.1	-12.7	206.3	***	41 - 15 - 957.6	-548.4	-179.3	***
41 - 48 - 1977.3	-1598.1	-1189.0	***	41 - 49 - 419.5	-103.3	398.9	***	41 - 16 - 957.6	-548.4	-179.3	***
41 - 66 - 1956.8	-1547.4	-1188.2	***	41 - 55 - 400.4	8.8	418.0	***	41 - 17 - 957.6	-548.4	-179.3	***
41 - 52 - 1886.9	-1477.7	-1046.5	***	41 - 11 - 373.3	-35.9	445.1	***	41 - 18 - 957.6	-548.4	-179.3	***
41 - 14 - 1875.7	-1464.5	-1053.3	***	41 - 51 - 333.5	75.7	484.9	***	41 - 19 - 957.6	-548.4	-179.3	***
41 - 29 - 1858.9	-1449.7	-1040.5	***	41 - 31 - 2088.5	-1679.3	-1270.1	***	41 - 20 - 957.6	-548.4	-179.3	***
41 - 20 - 1858.3	-1449.1	-1039.9	***	41 - 46 - 2073.3	-1664.1	-1254.9	***	41 - 21 - 957.6	-548.4	-179.3	***
41 - 12 - 1849.4	-1440.2	-1031.0	***	41 - 32 - 2048.2	-1639.0	-1239.8	***	41 - 22 - 957.6	-548.4	-179.3	***
41 - 30 - 1840.6	-1431.0	-1022.4	***	41 - 35 - 2056.4	-1627.1	-1213.0	***	41 - 23 - 957.6	-548.4	-179.3	***
41 - 13 - 1827.9	-1420.8	-1010.8	***	41 - 47 - 1956.4	-1587.3	-1176.8	***	41 - 24 - 957.6	-548.4	-179.3	***
41 - 48 - 1817.5	-1413.8	-984.4	***	41 - 46 - 1975.7	-1586.8	-1157.3	***	41 - 25 - 957.6	-548.4	-179.3	***
41 - 51 - 1722.9	-1313.7	-904.3	***	41 - 42 - 1906.9	-1495.7	-1087.3	***	41 - 26 - 957.6	-548.4	-179.3	***
41 - 47 - 1722.7	-1313.5	-904.3	***	41 - 14 - 1892.8	-1483.6	-1074.4	***	41 - 27 - 957.6	-548.4	-179.3	***
41 - 53 - 1656.5	-1249.3	-840.1	***	41 - 29 - 1878.0	-1468.7	-1059.6	***	41 - 28 - 957.6	-548.4	-179.3	***
41 - 34 - 1666.8	-1197.2	-748.0	***	41 - 10 - 1877.4	-1468.7	-1059.0	***	41 - 29 - 957.6	-548.4	-179.3	***
41 - 10 - 1554.7	-1143.5	-736.3	***	41 - 12 - 1858.5	-1459.3	-1050.1	***	41 - 30 - 957.6	-548.4	-179.3	***
41 - 3 - 1320.8	-731.7	-512.5	***	41 - 32 - 1859.8	-1450.6	-1041.4	***	41 - 31 - 957.6	-548.4	-179.3	***
41 - 27 - 1093.0	-681.8	-274.6	***	41 - 35 - 1848.1	-1439.1	-1029.9	***	41 - 32 - 957.6	-548.4	-179.3	***
41 - 94 - 1087.7	-678.5	-269.3	***	41 - 39 - 1829.1	-1429.9	-1020.7	***	41 - 33 - 957.6	-548.4	-179.3	***
41 - 6 - 1050.7	-641.3	-232.3	***	41 - 36 - 1821.5	-1421.2	-1019.9	***	41 - 34 - 957.6	-548.4	-179.3	***
41 - 83 - 1048.9	-639.7	-230.3	***	41 - 5 - 7 - 1170.4	-770.4	-361.2	***	41 - 35 - 957.6	-548.4	-179.3	***
41 - 5 - 1034.9	-623.7	-216.3	***	41 - 26 - 1178.1	-768.9	-359.7	***	41 - 36 - 957.6	-548.4	-179.3	***
41 - 40 - 1014.8	-603.5	-194.2	***	41 - 30 - 1148.9	-740.7	-331.5	***	41 - 37 - 957.6	-548.4	-179.3	***
41 - 77 - 1008.0	-598.8	-189.6	***	41 - 33 - 7 - 1178.8	-739.6	-330.4	***	41 - 38 - 957.6	-548.4	-179.3	***
41 - 23 - 985.1	-559.9	-140.7	***	41 - 19 - 1130.8	-721.7	-323.5	***	41 - 39 - 957.6	-548.4	-179.3	***
41 - 50 - 960.0	-550.8	-141.6	***	41 - 27 - 1112.1	-702.9	-323.7	***	41 - 40 - 957.6	-548.4	-179.3	***
41 - 17 - 931.7	-546.2	-135.3	***	41 - 34 - 1106.8	-697.6	-328.4	***	41 - 41 - 957.6	-548.4	-179.3	***
41 - 10 - 911.3	-502.3	-93.1	***	41 - 8 - 1066.8	-666.0	-294.8	***	41 - 42 - 957.6	-548.4	-179.3	***
41 - 69 - 798.8	-508.9	20.3	***	41 - 5 - 8 - 1066.8	-666.0	-294.8	***	41 - 43 - 957.6	-548.4	-179.3	***

Comisiones, Comités, Cuerpos	Competencia
32 - 14 404.62 546.25 687.67 ***	32 - 46 206.12 439.74 379.36 ***
32 - 21 411.51 532.87 684.34 ***	32 - 22 305.49 443.49 367.11 ***
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32 - 11 429.65 521.23 671.87 ***	32 - 67 342.00 483.42 523.21 ***
32 - 12 445.68 587.30 728.92 ***	32 - 68 346.04 482.27 524.21 ***
32 - 8 497.19 586.73 740.33 ***	32 - 72 351.62 493.27 524.81 ***
32 - 64 460.33 602.19 743.77 ***	32 - 73 351.88 483.93 513.12 ***
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32 - 2 484.42 626.04 767.66 ***	32 - 27 367.19 508.81 530.43 ***
32 - 23 925.76 987.37 808.99 ***	32 - 14 379.04 520.64 562.29 ***
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31 - 34 -346.94 -365.55 -63.71 ***	32 - 1 - 435.81 600.43 742.93 ***
31 - 5 -239.68 -118.07 23.59 ***	32 - 23 300.13 614.77 783.39 ***
31 - 35 -245.67 -102.23 39.37 ***	32 - 10 307.70 648.34 790.99 ***
31 - 9 -206.91 -39.29 82.33 ***	32 - 61 324.34 665.96 807.00 ***
31 - 32 -156.42 -14.80 126.82 ***	32 - 20 341.19 682.78 824.39 ***
31 - 60 -130.81 10.81 151.63 ***	32 - 15 383.04 726.71 808.51 ***
31 - 63 -91.47 90.15 191.77 ***	32 - 26 394.27 733.89 877.51 ***
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31 - 93 -4.13 99.78 241.40 ***	32 - 7 603.01 944.65 1066.27 ***
31 - 48 -5.37 135.87 271.26 ***	33 - 54 -397.01 -255.47 -113.83 ***
31 - 60 63.98 205.60 347.23 ***	33 - 5 - 349.83 464.21 535.94 ***
31 - 38 88.34 225.60 357.15 ***	33 - 35 204.01 311.39 410.77 ***
31 - 33 93.59 233.01 376.61 ***	33 - 9 251.01 349.45 32.19 ***
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31 - 6 179.54 321.16 442.78 ***	33 - 48 -96.12 85.50 227.12 ***
31 - 36 192.23 333.67 475.49 ***	33 - 37 13.84 133.43 297.07 ***
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31 - 45 209.97 351.59 493.21 ***	33 - 53 43.23 184.87 324.49 ***
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31 - 31 239.66 381.26 522.90 ***	33 - 36 117.47 239.99 400.71 ***
31 - 28 256.41 398.03 539.63 ***	33 - 4 - 129.39 271.01 412.63 ***
31 - 1 256.43 398.45 540.07 ***	33 - 38 142.11 283.73 424.34 ***
31 - 3 256.97 398.59 540.21 ***	33 - 33 149.85 267.41 429.10 ***
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31 - 27 362.69 304.31 461.93 ***	33 - 8 316.19 357.31 459.42 ***
31 - 24 373.59 315.24 466.83 ***	33 - 23 323.94 374.16 510.18 ***
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31 - 21 394.53 534.17 679.79 ***	33 - 22 366.04 406.13 547.77 ***
31 - 19 395.11 540.73 682.33 ***	33 - 62 378.82 440.43 582.03 ***
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31 - 4 442.30 583.92 723.54 ***	33 - 12 312.91 453.93 595.53 ***
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31 - 2 449.62 611.24 732.04 ***	33 - 27 322.83 469.47 610.09 ***
31 - 25 510.76 635.30 749.19 ***	33 - 14 339.60 481.34 622.92 ***
31 - 10 518.37 664.18 801.80 ***	33 - 21 346.41 488.03 629.61 ***
31 - 41 535.17 674.79 818.41 ***	33 - 11 364.69 506.31 647.93 ***
31 - 20 551.96 693.58 835.20 ***	33 - 18 380.74 522.36 643.78 ***
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31 - 39 661.68 803.30 944.92 ***	33 - 16 396.28 337.93 619.92 ***
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30 - 3 - 270.49 -128.87 12.73 ***	33 - 10 463.42 610.04 731.04 ***
30 - 33 -234.07 -111.03 28.36 ***	33 - 61 485.03 626.04 768.18 ***
30 - 9 -211.71 -70.70 71.32 ***	33 - 20 501.82 643.41 785.04 ***
30 - 52 -107.23 -23.01 116.01 ***	33 - 15 545.79 667.37 820.79 ***
30 - 31 -152.43 -10.81 130.51 ***	33 - 26 514.95 656.55 810.17 ***
30 - 83 -102.28 35.36 180.94 ***	33 - 30 611.53 733.15 816.77 ***
30 - 39 -94.62 46.93 188.61 ***	33 - 7 763.69 905.31 1046.93 ***
30 - 75 -32.04 46.96 238.60 ***	34 - 34 -404.73 -303.13 -121.11 ***
30 - 44 -16.73 124.84 266.46 ***	34 - 3 - 317.79 -171.07 -54.23 ***
30 - 59 53.13 194.79 326.41 ***	34 - 23 -301.07 -100.33 -18.43 ***
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30 - 53 82.59 224.21 365.82 ***	34 - 32 -214.22 -127.50 -69.02 ***
30 - 45 121.51 210.24 413.32 ***	34 - 31 -159.42 -57.80 -83.92 ***
30 - 65 142.47 284.09 425.70 ***	34 - 30 -184.61 -46.99 -74.02 ***
30 - 50 143.40 285.02 426.64 ***	34 - 33 -145.27 -7.00 -133.94 ***
30 - 13 154.03 296.25 437.87 ***	34 - 33 -93.65 -41.98 -183.60 ***
30 - 56 156.81 294.43 440.05 ***	34 - 48 -43.77 -77.80 -219.46 ***
30 - 6 164.73 310.35 451.97 ***	34 - 38 -6.18 -147.80 -294.24 ***
30 - 58 181.44 523.05 464.68 ***	34 - 38 -30.53 -172.13 -318.43 ***
30 - 35 193.20 526.82 466.44 ***	34 - 49 -40.16 -223.24 -366.33 ***
30 - 49 195.17 340.79 481.40 ***	34 - 49 -55.47 -237.09 -378.71 ***
30 - 11 202.78 344.40 486.03 ***	34 - 50 -56.41 -234.03 -219.63 ***
30 - 9 204.22 349.64 487.46 ***	34 - 13 107.64 345.23 390.87 ***
30 - 77 211.78 353.40 493.02 ***	34 - 56 106.82 251.44 393.93 ***
30 - 47 211.90 356.32 496.13 ***	34 - 6 121.70 263.36 404.92 ***
30 - 31 228.85 370.47 512.09 ***	34 - 50 134.45 274.07 417.69 ***
30 - 28 245.60 387.22 528.14 ***	34 - 13 158.21 279.83 421.44 ***
30 - 1 246.02 387.64 529.26 ***	34 - 45 152.17 293.79 453.41 ***
30 - 5 246.16 387.78 529.40 ***	34 - 38 -155.79 297.41 459.03 ***
30 - 29 251.91 393.33 535.13 ***	34 - 9 157.22 294.84 440.46 ***
30 - 3 253.55 397.15 535.77 ***	34 - 77 164.67 306.41 443.03 ***
30 - 23 252.28 413.90 333.31 ***	34 - 43 165.95 307.32 445.14 ***

Competencia

30 - 51 181.86 323.44 463.10 ***	30 - 31 181.86 323.44 463.10 ***
30 - 29 192.81 340.23 481.83 ***	30 - 4 199.03 340.65 482.14 ***
30 - 6 199.03 340.65 482.14 ***	30 - 1 199.17 340.79 482.40 ***
30 - 5 199.17 340.79 482.40 ***	30 - 29 204.92 346.54 482.16 ***
30 - 8 208.54 350.13 491.77 ***	30 - 8 208.54 350.13 491.77 ***
30 - 23 223.16 366.90 508.12 ***	30 - 17 248.29 389.31 511.33 ***
30 - 17 248.29 389.31 511.33 ***	30 - 46 249.13 390.75 533.36 ***
30 - 24 250.67 398.19 540.41 ***	30 - 21 250.67 398.19 540.41 ***
30 - 21 250.67 398.19 540.41 ***	30 - 29 251.16 432.78 574.40 ***
30 - 9 251.16 432.78 574.40 ***	30 - 6 252.93 329.53 671.17 ***
30 - 16 252.93 329.53 671.17 ***	30 - 16 258.62 330.24 671.86 ***
30 - 2 258.62 330.24 671.86 ***	30 - 2 258.62 330.24 671.86 ***
30 - 10 260.16 344.28 587.69 ***	30 - 25 261.15 394.77 736.59 ***
30 - 11 260.16 344.28 587.69 ***	30 - 10 260.16 344.28 587.69 ***
30 - 12 267.37 348.93 640.41 ***	30 - 61 267.37 348.93 640.41 ***
30 - 30 268.46 349.59 640.81 ***	30 - 30 268.46 349.59 640.81 ***
30 - 31 269.16 350.33 641.41 ***	30 - 31 269.16 350.33 641.41 ***
30 - 37 270.43 351.09 642.27 ***	30 - 37 270.43 351.09 642.27 ***
30 - 32 271.21 351.86 642.93 ***	30 - 32 271.21 351.86 642.93 ***
30 - 33 272.98 352.63 652.93 ***	30 - 33 272.98 352.63 652.93 ***
30 - 34 273.75 353.40 653.71 ***	30 - 34 273.75 353.40 653.71 ***
30 - 35 274.52 354.17 654.51 ***	30 - 35 274.52 354.17 654.51 ***
30 - 36 275.29 354.94 655.29 ***	30 - 36 275.29 354.94 655.29 ***
30 - 37 276.06 355.71 656.06 ***	30 - 37 276.06 355.71 656.06 ***
30 - 38 276.83 356.48 656.83 ***	30 - 38 276.83 356.48 656.83 ***
30 - 39 277.59 357.25 657.59 ***	30 - 39 277.59 357.25 657.59 ***
30 - 40 278.36 358.02 658.36 ***	30 - 40 278.36 358.02 658.36 ***
30 - 41 279.13 358.79 659.13 ***	30 - 41 279.13 358.79 659.13 ***
30 - 42 279.90 359.56 659.90 ***	30 - 42 279.90 359.56 659.90 ***
30 - 43 280.67 360.33 660.67 ***	30 - 43 280.67 360.33 660.67 ***
30 - 44 281.44 361.10 661.44 ***	30 - 44 281.44 361.10 661.44 ***
30 - 45 282.21 361.87 662.21 ***	30 - 45 282.21 361.87 662.21 ***
30 - 46 283.98 362.64 663.98 ***	30 - 46 283.98 362.64 663.98 ***
30 - 47 284.75 363.41 664.75 ***	30 - 47 284.75 363.41 664.75 ***
30 - 48 285.52 364.18 665.52 ***	30 - 48 285.52 364.18 665.52 ***
30 - 49 286.29 364.95 666.29 ***	30 - 49 286.29 364.95 666.29 ***
30 - 50 287.06 365.72 667.06 ***	30 - 50 287.06 365.72 667.06 ***
30 - 51 287.83 366.49 668.83 ***	30 - 51 287.83 366.49 668.83 ***
30 - 52 288.59 367.26 669.59 ***	30 - 52 288.59 367.26 669.59 ***
30 - 53 289.36 368.03 670.36 ***	30 - 53 289.36 368.03 670.36 ***
30 - 54 290.13 368.79 671.13 ***	30 - 54 290.13 368.79 671.13 ***
30 - 55 290.90 369.56 671.90 ***	30 - 55 290.90 369.56 671.90 ***
30 - 56 291.67 369.33 672.67 ***	30 - 56 291.67 369.33 672.67 ***
30 - 57 292.44 369.10 673.44 ***	30 - 57 292.44 369.10 673.44 ***
30 - 58 293.21 368.87 674.21 ***	30 - 58 293.21 368.87 674.21 ***
30 - 59 294.00 368.64 675.00 ***	30 - 59 294.00 368.64 675.00 ***
30 - 60 294.77 368.41 675.77 ***	30 - 60 294.77 368.41 675.77 ***
30 - 61 295.54 368.18 676.54 ***	30 - 61 295.54 368.18 676.54 ***
30 - 62 296.31 367.95 677.31 ***	30 - 62 296.3



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
ENGENIERÍA EN GENÉTICA
BIBLIOTECA

R

Comisiones Guardia Color		Comisiones												
48 - 6	43.90	183.52	387.18	***	48 - 9	-271.79	-130.17	11.45		49 - 3	-342.20	399.11	-236.03	***
48 - 36	56.41	199.25	339.85	***	48 - 46	-235.93	-94.31	47.31		49 - 15	-320.38	-343.29	-240.21	***
48 - 35	60.26	201.98	343.68	***	48 - 28	-185.97	-28.35	117.27		49 - 34	-483.42	-340.33	-197.24	***
48 - 45	74.33	215.95	337.57	***	48 - 31	-134.36	9.08	140.88		49 - 32	-438.93	-285.83	-152.76	***
48 - 18	77.85	219.57	341.19	***	48 - 49	-92.00	51.99	195.18		49 - 31	-424.13	-281.05	-137.94	***
48 - 9	79.38	221.00	342.62	***	48 - 65	-76.68	54.94	204.39		49 - 30	-413.31	-270.24	-127.15	***
48 - 77	84.93	228.37	370.19	***	48 - 50	-75.74	63.88	207.47		49 - 33	-373.99	-230.90	-97.81	***
48 - 47	88.06	229.68	371.30	***	48 - 15	-64.53	77.19	218.72		49 - 39	-346.33	-213.26	-89.16	***
48 - 32	104.02	263.84	387.26	***	48 - 56	-62.34	79.28	220.70		49 - 37	-324.39	-181.26	-84.17	***
48 - 26	126.77	262.39	404.90	***	48 - 6	-50.41	71.39	232.82		49 - 38	-288.99	-145.80	-82.51	***
48 - 1	121.18	263.80	404.42	***	48 - 33	-33.93	77.70	103.92	243.53	49 - 36	-218.33	-75.44	-67.64	***
48 - 7	121.32	262.94	404.36	***	48 - 35	-33.93	76.67	149.39		49 - 38	-194.16	-51.09	92.00	
48 - 29	127.07	268.69	410.31	***	48 - 45	19.95	121.64	263.26		49 - 53	-187.12	-46.03	97.03	
48 - 3	136.49	271.31	415.93	***	48 - 18	-16.34	123.24	266.87		49 - 66	-129.34	13.83	156.92	
48 - 23	147.44	289.00	430.68	***	48 - 9	14.93	126.69	268.31		49 - 50	-128.30	14.79	157.87	
48 - 17	178.43	311.07	453.69	***	48 - 77	-7.34	134.26	275.87		49 - 17	-117.08	26.01	169.10	
48 - 45	171.26	312.94	454.12	***	48 - 47	-9.25	135.37	276.99		49 - 34	-114.89	21.49	171.24	
48 - 22	179.03	312.63	462.27	***	48 - 31	9.71	131.33	292.93	***	49 - 6	-102.97	40.11	183.20	
48 - 62	213.31	314.93	469.75	***	48 - 28	20.46	166.07	309.69	***	49 - 30	-90.26	32.83	195.91	
48 - 6	217.18	318.78	500.40	***	48 - 1	16.87	169.49	310.11	***	49 - 33	-86.50	54.38	199.67	
48 - 15	221.70	342.82	504.44	***	48 - 5	27.01	164.62	310.23		49 - 45	-72.94	70.53	213.03	
48 - 25	226.61	344.43	510.83	***	48 - 13	32.76	174.74	316.00	***	49 - 18	-68.92	74.17	217.21	
48 - 29	227.04	348.66	510.24	***	48 - 4	36.52	178.04	319.62	***	49 - 9	-67.49	75.00	214.99	
48 - 24	237.93	379.57	521.19	***	48 - 23	33.11	184.73	334.37	***	49 - 77	-59.92	43.17	226.23	
48 - 57	241.55	385.97	523.39	***	48 - 17	76.14	217.76	359.33	***	49 - 47	-58.91	64.28	227.36	
48 - 14	251.18	393.84	527.42	***	48 - 46	78.97	218.39	360.71	***	49 - 31	-42.85	100.24	243.32	
48 - 21	260.91	402.53	544.15	***	48 - 22	84.72	226.34	367.95	***	49 - 26	-56.10	116.97	260.77	
48 - 19	263.45	405.04	546.70	***	48 - 82	119.00	260.62	402.24	***	49 - 1	-25.99	117.40	269.45	
48 - 11	270.19	412.81	542.43	***	48 - 97	122.63	264.47	403.09	***	49 - 3	-25.34	117.54	269.63	
48 - 12	291.24	416.36	578.48	***	48 - 59	126.89	266.31	410.13	***	49 - 29	-19.79	121.39	266.38	
48 - 4	306.63	448.77	588.89	***	48 - 72	132.39	274.12	413.74	***	49 - 8	-16.18	126.91	278.00	
48 - 64	310.09	451.71	593.32	***	48 - 34	143.64	285.26	426.83	***	49 - 23	0.57	143.66	286.74	
48 - 16	310.78	452.40	594.92	***	48 - 77	148.04	289.65	431.28	***	49 - 46	-24.42	167.50	310.55	***
48 - 2	313.98	475.00	617.22	***	48 - 14	159.87	301.49	441.11	***	49 - 12	-32.16	173.23	318.34	***
48 - 25	373.51	516.93	508.33	***	48 - 21	166.64	308.21	449.94	***	49 - 62	-66.43	206.53	322.42	***
48 - 40	382.92	524.54	506.16	***	48 - 19	169.15	310.77	452.39	***	49 - 67	70.30	213.58	336.47	***
48 - 61	399.53	541.13	502.77	***	48 - 11	184.85	326.50	465.12	***	49 - 03	74.33	217.42	340.50	***
48 - 30	416.32	557.94	509.36	***	48 - 13	200.93	342.55	484.17	***	49 - 32	79.95	223.03	366.12	***
48 - 13	469.23	501.87	743.49	***	48 - 4	212.34	353.96	495.58	***	49 - 37	80.18	223.28	366.33	***
48 - 35	526.03	587.43	809.27	***	48 - 54	215.71	358.00	499.01	***	49 - 30	91.08	234.17	377.22	***
48 - 7	578.20	819.81	961.43	***	48 - 1	239.47	381.29	512.90	***	49 - 27	-93.49	238.57	341.44	***
48 - 54	582.56	410.93	260.51	***	48 - 21	281.91	422.62	345.24	***	49 - 14	107.31	250.40	343.45	***
48 - 3	465.29	323.67	181.05	***	48 - 10	298.61	430.23	371.93	***	49 - 21	114.04	257.13	401.21	***
48 - 53	449.47	307.83	186.23	***	48 - 61	305.23	446.81	388.43	***	49 - 19	116.60	259.68	402.72	***
48 - 92	466.51	354.34	181.27	***	48 - 20	322.01	463.63	393.23	***	49 - 11	132.32	273.41	418.40	***
48 - 92	462.02	220.40	181.78	***	48 - 15	345.91	507.56	649.18	***	49 - 12	148.37	291.86	434.54	***
48 - 31	487.22	235.60	463.98	***	48 - 25	378.13	516.75	638.35	***	49 - 4	150.78	302.87	449.96	***
48 - 40	350.41	184.77	511.18	***	48 - 30	431.73	573.34	714.95	***	49 - 9	161.22	306.50	449.33	***
48 - 85	297.07	155.46	133.94	***	48 - 7	543.83	723.50	847.12	***	49 - 10	165.91	307.00	450.05	***
48 - 59	289.42	167.80	461.73	***	48 - 1	318.87	377.21	333.39	***	49 - 2	187.11	330.20	473.28	***
48 - 95	247.44	105.81	313.80	***	48 - 33	351.93	422.67	333.23	***	49 - 13	226.44	371.93	314.62	***
48 - 43	211.58	69.95	71.65		48 - 48	240.99	299.57	42.35		49 - 19	236.05	379.44	322.22	***
48 - 85	117.27	24.31	161.97		48 - 39	274.05	329.41	421.21		49 - 61	252.66	395.73	358.82	***
48 - 57	112.21	29.41	171.03		48 - 45	278.83	366.81	408.19	***	49 - 20	269.45	412.54	355.62	***
48 - 49	67.64	75.44	248.33		48 - 33	291.43	374.92	394.08	***	49 - 13	313.28	454.47	395.34	***
48 - 66	52.33	89.19	220.91		48 - 31	370.63	435.01	43.39	***	49 - 26	322.57	465.69	404.74	***
48 - 30	53.36	90.13	231.85		48 - 33	365.82	424.21	42.39	***	49 - 30	379.16	522.25	465.34	***
48 - 13	102.45	242.11	343.23		48 - 35	326.49	404.87	42.23	***	49 - 7	531.33	674.41	417.30	***
48 - 56	57.98	103.64	242.25		48 - 39	318.87	377.21	333.39	***	48 - 34	-61.24	-300.23	-339.80	***
48 - 26	26.06	115.36	257.18		48 - 28	340.99	399.57	42.35	***	48 - 3	-554.38	-412.90	-271.34	***
48 - 35	9.59	132.03	273.64		48 - 35	346.95	-5.06	336.36		48 - 15	-338.76	-377.14	-213.32	***
48 - 45	4.37	145.59	287.61	***	48 - 47	47.05	46.03	185.12		48 - 34	-493.80	-354.10	-212.56	***
48 - 18	7.99	149.61	291.23	***	48 - 13	49.74	50.88	201.50		48 - 32	-451.31	-309.69	-148.07	***
48 - 9	9.42	151.04	297.65	***	48 - 55	61.74	58.38	201.50		48 - 31	-456.51	-294.89	-153.22	***
48 - 25	77.48	219.19	360.72	***	48 - 30	60.80	60.32	202.44		48 - 50	-425.70	-244.09	-142.47	***
48 - 27	100.49	242.11	363.23	***	48 - 37	62.04	58.38	213.00		48 - 37	-386.37	-244.79	-161.13	***
48 - 27	157.93	299.71	440.32	***	48 - 29	63.07	58.99	211.31		48 - 9	-79.87	61.75	203.37	
48 - 24	187.44	309.01	451.23	***	48 - 17	71.07	212.70	334.32	***	48 - 77	-72.30	64.32	210.94	
48 - 27	172.40	314.02	452.04	***	48 - 46	74.97	213.53	353.15	***	48 - 47	-71.19	70.43	212.05	
48 - 14	184.23	325.83	467.47	***	48 - 22	79.66	231.18	362.90	***	48 - 51	55.23	46.39	228.01	
48 - 21	190.13	332.97	474.19	***	48 - 63	113.93	235.36	377.18	***	48 - 38	38.48	103.34	244.78	
48 - 79	185.31	335.19	476.76	***	48 - 67	117.89	239.41	401.03	***	48 - 1	-36.95	103.35	245.19	
48 - 11	209.23	350.60	492.47	***	48 - 55	121.93	263.45	403.07	***	48 - 3	-37.92	103.60	245.31	
48 - 13	225.28	366.98	468.52	***	48 - 38	127.45	269.06	410.68	***	48 - 39	-			

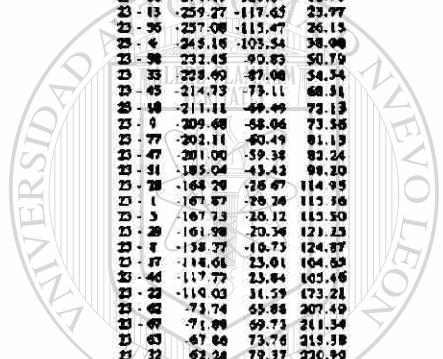
Comparativo										
Comisiones, Gastos, Cables	13 - 19	32.65	233.47	375.29	***	6 - 07	31.43	173.27	314.89	***
14 - 61	249.28	381.16	523.92	***	6 - 03	33.68	177.50	318.52	***	
15 - 20	257.07	388.49	540.31	***	6 - 32	41.30	182.92	324.34	***	
15 - 15	301.00	443.62	554.24	***	6 - 37	41.53	183.15	324.77	***	
16 - 26	316.19	451.81	533.43	***	6 - 24	32.43	194.05	333.62	***	
16 - 30	366.79	504.40	610.92	***	6 - 23	36.84	198.46	340.08	***	
16 - 7	318.95	540.57	602.18	***	6 - 14	68.67	210.29	321.91	***	
16 - 54	442.76	591.16	359.34	***	6 - 21	73.39	217.01	336.69	***	
16 - 3	333.92	413.90	273.29	***	6 - 19	77.93	219.37	301.19	***	
16 - 35	339.70	378.06	236.46	***	6 - 11	69.67	235.59	376.91	***	
16 - 94	446.74	355.12	213.30	***	6 - 12	104.72	251.34	392.96	***	
16 - 32	472.23	310.92	189.01	***	6 - 4	121.14	263.74	404.37	***	
16 - 31	417.45	295.83	154.21	***	6 - 64	124.55	246.19	407.81	***	
16 - 60	429.64	225.02	163.40	***	6 - 16	125.22	266.88	408.30	***	
16 - 23	347.30	343.68	134.07	***	6 - 1	143.46	290.08	431.70	***	
16 - 29	377.03	338.03	98.41	***	6 - 25	189.30	331.41	473.93	***	
16 - 43	377.87	196.03	36.49	***	6 - 10	197.40	339.02	480.64	***	
16 - 48	361.81	180.19	16.37	***	6 - 61	214.01	355.63	497.23	***	
16 - 68	211.83	90.23	31.39	***	6 - 20	239.80	352.42	314.84	***	
16 - 88	207.49	93.88	73.74	***	6 - 15	274.74	418.36	337.97	***	
16 - 33	202.44	80.82	81.80	***	6 - 28	283.92	423.54	367.16	***	
16 - 49	191.87	14.79	128.39	***	6 - 30	340.32	432.14	423.76	***	
16 - 65	142.36	-0.94	140.68	***	6 - 7	492.06	614.30	723.92	***	
16 - 13	110.36	11.23	132.84	***						
16 - 56	118.21	13.41	133.03	***						
16 - 6	116.20	23.33	186.93	***						
16 - 78	103.59	38.04	179.66	***						
16 - 32	99.82	41.80	183.42	***						
16 - 45	85.80	35.76	197.38	***						
16 - 18	45.24	59.38	201.00	***						
16 - 9	60.81	60.61	202.49	***						
16 - 77	75.24	98.38	210.00	***						
16 - 47	72.13	59.49	211.11	***						
16 - 51	56.17	37.45	227.07	***						
16 - 28	59.42	102.26	243.82	***						
16 - 1	39.06	102.62	244.24	***						
16 - 5	34.86	101.76	244.38	***						
16 - 28	33.11	101.51	230.13	***						
16 - 8	39.46	112.13	233.74	***						
16 - 23	11.75	128.87	270.49	***						
16 - 17	12.26	131.88	295.30	***						
16 - 65	11.10	152.72	294.34	***						
16 - 22	16.85	160.46	302.08	***						
16 - 62	33.12	193.74	336.37	***						
16 - 6	36.94	198.64	340.12	***						
16 - 61	61.01	202.43	344.13	***						
16 - 24	66.63	200.25	349.87	***						
16 - 21	66.85	208.48	330.10	***						
16 - 24	77.26	219.31	381.00	***						
16 - 27	41.17	223.79	363.41	***						
16 - 14	94.00	275.62	377.24	***						
16 - 21	106.72	242.34	383.96	***						
16 - 15	103.28	244.90	386.52	***						
16 - 11	116.66	260.62	401.28	***						
16 - 12	115.05	276.67	418.29	***						
16 - 1	146.47	288.09	429.70	***						
16 - 64	149.90	291.52	433.14	***						
16 - 15	130.37	292.21	437.83	***						
16 - 2	173.79	343.41	457.05	***						
16 - 23	215.83	320.74	486.36	***						
16 - 10	221.73	364.33	503.97	***						
16 - 61	239.34	350.94	522.58	***						
16 - 20	236.13	397.73	539.37	***						
16 - 13	100.07	441.05	583.30	***						
16 - 26	309.25	450.87	592.49	***						
16 - 55	365.85	507.47	649.08	***						
16 - 7	518.01	559.63	601.25	***						
13 - 54	-554.00	-312.34	-370.76	***	6 - 34	-668.10	-386.49	-384.87	***	
13 - 3	-566.74	-425.13	-283.50	***	6 - 5	-380.84	-439.55	-297.81	***	
13 - 55	-553.92	-409.10	-267.68	***	6 - 55	-369.05	-423.41	-281.79	***	
13 - 94	-307.96	-366.34	-324.73	***	6 - 9	-322.07	-380.45	-238.03	***	
13 - 52	-453.48	-321.84	-190.24	***	6 - 53	-477.58	-335.96	-164.36	***	
13 - 31	-444.68	-347.95	-165.44	***	6 - 31	-462.78	-321.16	-176.54	***	
13 - 60	-437.87	-296.15	-154.63	***	6 - 60	-451.97	-310.35	-164.73	***	
13 - 63	-398.33	-256.51	-115.29	***	6 - 83	-412.49	-271.01	-129.39	***	
13 - 59	-390.87	-249.25	-107.64	***	6 - 78	-404.98	-363.36	-121.74	***	
13 - 93	-549.47	-267.27	-83.55	***	6 - 93	-362.99	-221.28	-79.76	***	
13 - 48	313.03	-191.41	-26.79	***	6 - 48	-327.15	-183.12	-43.90	***	
13 - 65	243.01	-101.45	-40.16	***	6 - 58	-237.18	-113.56	-26.06	***	
13 - 58	-218.73	-92.10	-64.52	***	6 - 58	-332.82	-92.10	-30.41	***	
13 - 53	-213.64	-72.04	-69.38	***	6 - 33	-227.77	-46.15	-51.47	***	
13 - 49	-159.10	-26.01	-17.08	***	6 - 49	-183.20	-40.11	-102.97	***	
13 - 65	-133.73	-12.16	-129.45	***	6 - 65	-167.99	-26.22	-115.35	***	
13 - 30	-132.84	-11.23	-130.39	***	6 - 30	-166.93	-23.33	-116.29	***	
13 - 56	-159.44	-2.18	-143.80	***	6 - 9	-106.13	-19.48	-177.10	***	
13 - 6	-127.52	-14.01	-155.73	***	6 - 77	-103.57	-43.09	-184.87	***	
13 - 54	-114.90	-18.01	-168.43	***	6 - 47	-97.86	-44.16	-181.78	***	
13 - 73	-111.05	-30.37	-172.19	***	6 - 43	-102.57	-43.09	-184.87	***	
13 - 46	-97.08	-48.54	-186.16	***	6 - 33	-125.15	-16.47	-188.09	***	
13 - 18	-93.46	-48.15	-185.77	***	6 - 45	-111.19	-16.43	-172.05	***	
13 - 9	-92.03	-49.33	-191.21	***	6 - 18	-107.57	-34.05	-173.87	***	
13 - 77	-84.46	-57.15	-182.77	***	6 - 30	-164.93	-23.33	-116.29	***	
13 - 47	-83.33	-58.27	-199.89	***	6 - 13	-135.72	-14.10	-171.32	***	
13 - 31	-47.39	74.73	215.24	***	6 - 58	-153.54	-11.92	-129.70	***	
13 - 38	-30.60	80.97	231.39	***	6 - 38	-128.91	-12.71	-124.33	***	
13 - 1	-50.73	91.39	233.01	***	6 - 33	-125.15	-16.47	-188.09	***	
13 - 3	-50.05	94.53	231.15	***	6 - 43	-111.19	-16.43	-172.05	***	
13 - 29	-44.34	97.31	238.90	***	6 - 18	-107.57	-34.05	-173.87	***	
13 - 8	-40.72	100.90	242.52	***	6 - 9	-106.13	-19.48	-177.10	***	
13 - 23	-29.97	117.61	256.27	***	6 - 77	-103.57	-43.09	-184.87	***	
13 - 17	-0.96	140.66	282.22	***	6 - 47	-97.86	-44.16	-181.78	***	
13 - 46	-0.11	141.49	283.11	***	6 - 31	-81.50	-60.12	-201.74	***	
13 - 22	7.42	149.21	290.86	***	6 - 28	-84.79	-76.87	-218.49	***	
13 - 45	41.92	183.51	321.14	***	6 - 1	-84.33	-71.29	-218.91	***	
13 - 47	42.75	189.37	321.99	***	6 - 5	-64.19	-71.43	-219.03	***	
13 - 63	49.79	191.41	331.03	***	6 - 29	-58.44	-81.08	-224.80	***	
13 - 22	59.40	197.02	331.64	***	6 - 3	-54.82	-86.80	-224.41	***	
13 - 31	59.63	197.25	331.87	***	6 - 23	-58.08	-103.56	-245.16	***	
13 - 24	68.54	208.16	340.77	***	6 - 17	-13.07	-126.55	-266.17	***	
13 - 25	70.94	212.96	354.18	***	6 - 46	-14.23	-127.39	-269.01	***	
13 - 14	92.77	224.39	366.01	***	6 - 22	-6.48	-133.16	-296.75	***	
13 - 21	99.59	231.11	372.74	***	6 - 62	-27.89	-165.42	-311.04	***	

UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
GENEALOGÍA BIBLIOTECA

Cronograma, Género Cálculo		Cronograma										
33 - 5	-80.66	60.96	202.58	18	-26	-102.16	-31.34	120.28	77 - 56	-275.87	-134.26	7.36
33 - 6	-74.91	64.71	204.33	18	-33	-159.20	-67.58	124.04	77 - 53	-279.82	-129.36	12.42
33 - 7	-71.29	70.33	211.93	18	-43	-145.24	-3.42	138.66	77 - 49	-226.23	-83.17	56.92
33 - 8	-54.34	47.08	228.99	18	-9	-140.19	1.43	145.05	77 - 48	-210.94	-59.12	72.36
33 - 9	-31.51	110.07	231.70	18	-77	-132.62	9.00	150.62	77 - 36	-210.00	-68.18	73.34
33 - 10	-30.70	110.92	232.34	18	-47	-131.51	10.11	151.73	77 - 13	-193.77	-57.15	88.46
33 - 11	-22.53	118.07	260.29	18	-51	-115.33	26.07	167.60	77 - 56	-196.59	-58.97	85.63
33 - 12	11.33	132.93	294.37 ***	18	-28	-98.80	62.82	186.44	77 - 6	-184.87	-43.03	98.57
33 - 13	13.38	136.89	298.42 ***	18	-1	-88.38	43.24	184.86	77 - 36	-171.04	-30.34	111.28
33 - 14	14.22	139.84	302.46 ***	18	-5	-98.34	43.38	185.00	77 - 33	-188.20	-26.93	119.04
33 - 15	24.83	166.43	309.07 ***	18	-29	-82.49	49.13	190.73	77 - 43	-134.24	-42.02	129.09
33 - 16	25.06	166.88	308.30 ***	18	-4	-98.87	92.73	194.36	77 - 18	-150.02	-9.00	132.62
33 - 17	31.97	177.38	319.20 ***	18	-25	-72.12	69.49	211.11	77 - 9	-149.19	-3.37	154.05
33 - 18	40.37	181.99	323.61 ***	18	-17	-49.12	92.50	236.12	77 - 47	-149.51	1.11	142.71
33 - 19	32.20	193.82	333.44 ***	18	-66	-48.28	99.34	234.94	77 - 31	-124.05	(7.07)	158.69
33 - 20	26.93	200.33	342.14 ***	18	-22	-40.51	101.08	242.70	77 - 28	-197.80	33.82	175.44
33 - 21	61.48	205.19	344.72 ***	18	-62	-6.13	135.37	276.99	77 - 1	-107.30	34.24	175.86
33 - 22	77.21	218.83	350.44 ***	18	-67	-12.40	139.27	280.84	77 - 5	-107.24	34.38	176.08
33 - 23	53.26	234.88	357.50 ***	18	-63	1.61	143.73	284.87 ***	77 - 29	-101.49	49.13	181.73
33 - 24	104.67	245.29	347.91 ***	18	-37	7.48	149.10	290.72 ***	77 - 8	-97.87	43.73	145.34
33 - 25	108.10	249.75	351.34 ***	18	-28	16.46	160.00	301.63	77 - 23	-81.13	60.45	202.11
33 - 26	108.80	250.42	352.04 ***	18	-27	22.79	166.41	305.03 ***	77 - 17	-79.12	83.56	225.12
33 - 27	132.90	273.61	413.23 ***	18	-14	34.02	176.24	317.86 ***	77 - 44	-57.26	84.34	221.56
33 - 28	175.13	314.03	456.57 ***	18	-21	41.14	182.98	324.38 ***	77 - 22	-49.33	92.45	233.70
33 - 29	180.94	322.86	468.18 ***	18	-19	43.90	189.38	327.14 ***	77 - 62	-15.25	126.37	267.99
33 - 30	197.21	339.16	480.78 ***	18	-11	59.62	201.24	342.86 ***	77 - 63	-11.40	130.12	271.84
33 - 31	214.94	355.96	487.50 ***	18	-12	75.67	217.39	358.91 ***	77 - 32	-1.75	134.87	281.49
33 - 32	238.21	359.89	341.51 ***	18	-4	87.09	228.71	370.32 ***	77 - 57	-1.52	149.10	281.12
33 - 33	267.43	409.07	350.69 ***	18	-64	90.32	252.14	373.76 ***	77 - 26	9.38	181.00	292.62 ***
33 - 34	344.03	463.07	607.29 ***	18	-16	91.71	252.81	374.43 ***	77 - 27	13.79	159.41	297.05 ***
33 - 35	476.21	617.83	759.45 ***	18	-25	125.73	207.16	428.78 ***	77 - 14	25.02	167.24	308.86 ***
45 - 54	-808.34	596.92	413.36 ***	18	-10	163.18	304.97	446.39 ***	77 - 41	32.34	173.90	315.18 ***
45 - 55	-811.28	449.64	328.04 ***	18	-61	179.16	321.38	455.20 ***	77 - 19	3.90	176.52	318.14 ***
45 - 56	-805.44	453.84	312.22 ***	18	-20	196.73	336.37	479.91 ***	77 - 11	39.62	192.24	336.86 ***
45 - 57	-552.50	410.88	369.26 ***	18	-15	240.69	362.30	423.92 ***	77 - 12	64.67	208.29	346.91 ***
45 - 58	-508.01	366.39	224.77 ***	18	-26	349.47	391.49	533.11 ***	77 - 4	78.09	219.71	361.32 ***
45 - 59	-493.31	351.59	209.97 ***	18	-30	306.47	448.09	569.70 ***	77 - 64	81.52	223.14	346.76 ***
45 - 60	-482.40	340.79	193.17 ***	18	-7	458.61	600.24	741.87 ***	77 - 16	82.21	223.83	365.45 ***
45 - 61	-443.07	304.41	159.83 ***	9 - 54	-703.39	-361.97	-420.31 ***	77 - 1	105.41	247.93	348.65 ***	
45 - 62	-435.41	283.79	152.17 ***	9 - 3	-416.33	-474.71	-333.05 ***	77 - 25	146.75	284.36	429.54 ***	
45 - 63	-393.43	251.81	110.10 ***	9 - 53	-400.51	-458.89	-317.27 ***	77 - 60	170.94	312.59	458.20 ***	
45 - 64	-357.71	215.93	74.33 ***	9 - 48	-362.02	-221.02	-79.38 ***	77 - 20	187.73	329.37	470.99 ***	
45 - 65	-287.61	-145.99	-4.37 ***	9 - 59	-293.66	-311.04	-9.42 ***	77 - 15	231.69	373.34	514.92 ***	
45 - 66	-253.26	121.64	19.98	9 - 88	-268.51	-126.09	14.71 ***	77 - 26	240.67	382.49	524.41 ***	
45 - 67	-258.20	-116.34	23.04	9 - 53	-303.35	-121.03	13.99 ***	77 - 30	217.47	349.09	510.20 ***	
45 - 68	-213.63	70.33	72.54	9 - 49	-218.09	-75.00	97.49 ***	77 - 7	449.40	591.25	732.87 ***	
45 - 69	-193.32	-95.70	14.92	9 - 66	-203.37	-61.75	79.87 ***	47 - 54	712.27	570.65	429.03 ***	
45 - 70	-197.30	-55.76	85.86	9 - 18	-308.48	-256.86	-13.24 ***	47 - 3	-625.01	489.39	317.77 ***	
45 - 71	-186.16	-44.54	57.08	9 - 48	-362.02	-221.02	-79.38 ***	47 - 53	-609.19	467.37	325.93 ***	
45 - 72	-183.97	-42.34	39.26	9 - 59	-293.66	-311.04	-9.42 ***	47 - 9	-566.73	428.61	299.99 ***	
45 - 73	-172.05	-50.43	111.19	9 - 17	-268.51	-126.09	14.71 ***	47 - 51	-521.74	380.12	-236.50 ***	
45 - 74	-159.34	-17.73	123.90	9 - 51	-316.08	-121.84	13.03 ***	47 - 31	-506.94	365.32	231.71 ***	
45 - 75	-155.58	-13.97	127.63	9 - 28	-300.23	-41.39	183.00 ***	47 - 60	-495.13	324.32	-212.90 ***	
45 - 76	-138.00	3.03	183.24	9 - 4	-49.82	-41.80	181.43 ***	47 - 39	-449.14	307.52	-165.19 ***	
45 - 77	-136.57	9.03	146.67	9 - 35	-143.05	-1.43	140.19 ***	47 - 95	-407.16	265.54	123.92 ***	
45 - 78	-129.00	13.62	124.24	9 - 29	-202.45	-46.81	80.81 ***	47 - 48	-371.34	229.68	-88.04 ***	
45 - 79	-127.89	13.73	125.35	9 - 18	-143.05	-1.43	140.19 ***	47 - 33	-271.93	130.31	11.71 ***	
45 - 80	-111.93	29.44	171.31	9 - 77	-124.09	7.57	149.19 ***	47 - 47	-227.34	84.28	58.81 ***	
45 - 81	-95.18	46.44	188.06	9 - 47	-131.94	8.86	150.30 ***	47 - 66	-212.05	70.43	71.19 ***	
45 - 82	-84.76	46.83	188.47	9 - 51	-116.08	24.54	166.26 ***	47 - 56	-211.11	69.19	72.13 ***	
45 - 83	-80.92	104.70	240.32 ***	9 - 28	-100.23	41.39	183.00 ***	47 - 13	-199.89	58.27	83.35 ***	
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45 - 85	-63.25	106.87	248.49 ***	9 - 1	-49.68	41.94	183.56 ***	47 - 5	-165.73	44.16	97.44 ***	
45 - 86	-52.25	106.51	248.29 ***	9 - 29	-93.93	47.09	189.31 ***	47 - 32	-108.34	33.12	174.74 ***	
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45 - 90	-90.70	232.32	373.94 ***	9 - 24	-66.95	138.77	300.19 ***	47 - 17	-59.23	82.35	224.01 ***	
45 - 91	-94.14	235.74	377.32 ***	9 - 27	-21.35	163.97	304.58 ***	47 - 46	-58.39	83.22	224.84 ***	
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45 - 95	-244.30	365.97	466.82 ***	9 - 11	-28.19	199.81	341.43 ***	47 - 21	31.23	172.35	314.47 ***	
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45 - 101	-446.64	305.04	163.41 ***	9 - 25	-154.31	295.93	437.53 ***	47 - 63	-8.48	135.14	274.76 ***	
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45 - 103	-397.05	457.43	113.81 ***	9 - 33	-60.08	465.46	324.84 ***	47 - 19	33.78	173.40	317.02 ***	
45 - 104	-361.19	219.37	77.93 ***	9 - 9	-303.12	423.50	241.88 ***	47 - 14	49.31	191.13	332.73 ***	
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SI - 65	-91.14 -90.51 -232.13 ***
SI - 32	-43.50 -96.12 -237.74 ***



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EN GENERAL BIBLIOTECA**

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Comparación		Comparación		Comparación			
8 - 57	-45.27	96.33	237.97	8 - 26	-164.99	43.37	98.24
8 - 54	-34.36	107.24	248.87	8 - 6	-101.96	-39.74	101.86
8 - 27	-29.06	111.66	233.26	8 - 23	-164.43	-23.01	116.61
8 - 14	-18.13	133.49	259.11	8 - 46	-140.78	6.84	142.45
8 - 21	-11.40	130.23	271.84	8 - 22	-133.04	8.59	130.20
8 - 19	-8.85	131.77	274.79	8 - 35	-96.75	43.87	104.48
8 - 11	6.88	148.50	290.12 ***	8 - 65	-94.90	46.73	188.33
8 - 12	22.93	164.35	306.17 ***	8 - 33	-90.87	50.79	192.37
8 - 4	34.34	173.96	317.56 ***	8 - 32	-85.25	18.34	197.98
8 - 64	37.77	179.39	321.61 ***	8 - 24	-74.12	07.30	209.12
8 - 16	39.47	189.99	321.71 ***	8 - 23	-69.71	71.91	213.32
8 - 2	61.67	203.29	344.90 ***	8 - 24	-57.46	83.74	225.33
8 - 23	103.00	244.62	386.34 ***	8 - 23	-51.16	90.46	232.94
8 - 19	110.01	731.23	393.85 ***	8 - 19	-48.60	93.81	334.63
8 - 61	127.22	268.84	410.49 ***	8 - 11	-32.88	106.24	350.34
8 - 20	144.01	263.03	427.23 ***	8 - 12	-16.83	124.79	366.41
8 - 15	187.54	329.34	471.18 ***	8 - 4	-5.42	136.30	277.92
8 - 26	197.13	338.74	480.36 ***	8 - 64	-1.99	139.64	281.26
8 - 39	233.72	395.34	396.96 ***	8 - 10	-1.29	140.31	281.93
8 - 7	405.88	347.30	489.12 ***	8 - 8	31.91	193.53	305.15 ***
23 - 34	-771.65	-530.63	-488.41 ***	8 - 23	-63.24	204.84	346.48 ***
23 - 3	-664.39	-542.77	-401.13 ***	8 - 10	70.85	212.47	334.09 ***
23 - 55	-668.57	-536.95	-385.33 ***	8 - 45	87.46	229.05	370.70 ***
23 - 94	-629.41	-483.93	-342.37 ***	8 - 20	184.25	243.37	387.49 ***
23 - 52	-581.12	-439.50	-297.88 ***	8 - 15	148.18	289.89	341.42 ***
23 - 31	-566.32	-414.70	-293.07 ***	8 - 26	177.35	298.99	440.61 ***
23 - 6	-535.51	-413.90	-272.28 ***	8 - 30	213.97	333.54	487.20 ***
23 - 15	-516.18	-378.58	-232.94 ***	8 - 7	366.13	397.75	649.27 ***
23 - 32	-504.32	-366.90	-233.28 ***	8 - 34	-79.46	-493.87	-512.25 ***
23 - 75	-466.34	-324.92	-183.30 ***	8 - 3	-705.73	-365.61	-424.99 ***
23 - 46	-450.58	-329.06	-147.44 ***	8 - 25	-682.41	-310.79	-409.18 ***
23 - 65	-360.72	-219.10	-77.48 ***	8 - 36	-569.45	-307.84	-365.22 ***
23 - 35	-336.37	-194.75	-53.13 ***	8 - 32	-606.37	-463.53	-321.73 ***
23 - 33	-331.51	-189.69	-48.07 ***	8 - 31	-399.17	-445.53	-300.93 ***
23 - 47	-286.94	-143.66	-9.97 ***	8 - 65	-577.30	-437.74	-295.12 ***
23 - 36	-271.43	-149.81	-11.81	8 - 32	-349.02	-398.48	-236.75 ***
23 - 30	-279.49	-148.87	-12.75	8 - 39	-332.36	-390.73	-249.13 ***
23 - 12	-259.27	-117.65	-23.97	8 - 53	-496.58	-348.76	-207.14 ***
23 - 36	-237.08	-115.47	-26.15 ***	8 - 48	-454.52	-312.99	-171.28 ***
23 - 4	-245.16	-103.54	-38.00	8 - 38	-384.56	-342.95	-101.33 ***
23 - 38	-231.45	-99.83	-50.79	8 - 33	-360.21	-318.54	-76.97 ***
23 - 33	-228.69	-97.00	-54.34	8 - 35	-353.12	-313.53	-71.92 ***
23 - 45	-214.73	-73.11	-68.31	8 - 45	-210.59	-167.50	-54.42 ***
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23 - 9	-209.69	-58.04	-73.36	8 - 30	-294.34	-152.72	-11.10 ***
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23 - 47	-201.00	-59.38	-82.24	8 - 30	-289.93	-139.71	7.31
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23 - 46	-117.72	-23.84	-105.46	8 - 47	-201.84	-83.23	58.39
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23 - 22	-62.24	-79.37	-230.99	8 - 29	-185.83	-44.21	97.41
23 - 57	-62.01	-79.60	-221.21	8 - 8	-181.21	-40.59	101.03
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23 - 6	-21.72	-163.24	-304.96 ***	8 - 37	-70.55	71.07	212.69
23 - 2	-44.73	-165.54	-328.16 ***	8 - 14	-36.72	92.79	224.52
23 - 32	-86.48	-227.67	-369.49 ***	8 - 23	-51.95	89.63	231.24
23 - 4	-93.86	-235.45	-377.10 ***	8 - 19	-49.44	93.18	233.40
23 - 44	-110.47	-239.09	-393.71 ***	8 - 11	-33.71	107.91	240.32
23 - 27	-127.26	-268.88	-410.50 ***	8 - 12	-17.66	123.94	269.37
23 - 19	-171.19	-312.81	-424.43 ***	8 - 4	-8.21	131.17	273.49
23 - 26	-180.58	-322.00	-463.62 ***	8 - 64	-2.81	138.80	280.42
23 - 30	-236.98	-378.39	-520.21 ***	8 - 10	-3.12	139.50	281.12
23 - 7	-369.14	-510.76	-671.37 ***	8 - 2	-21.07	162.69	306.31 ***
23 - 34	-794.66	-653.04	-911.62 ***	8 - 23	-62.41	204.03	345.65 ***
23 - 1	-507.40	-565.78	-424.16 ***	8 - 10	-79.02	211.04	355.23 ***
23 - 55	-691.58	-549.94	-408.34 ***	8 - 44	-86.02	228.24	369.86 ***
23 - 94	-648.82	-507.06	-365.38 ***	8 - 26	-183.42	245.04	386.63 ***
23 - 52	-604.13	-462.02	-320.89 ***	8 - 13	-147.33	288.97	420.59 ***
23 - 31	-589.33	-447.71	-306.08 ***	8 - 26	-156.32	291.15	434.77 ***
23 - 60	-578.52	-436.90	-295.29 ***	8 - 35	-213.13	354.75	496.37 ***
23 - 83	-519.18	-397.57	-255.93 ***	8 - 8	-345.29	506.81	648.53 ***
23 - 39	-531.73	-349.91	-241.29 ***	23 - 34	-803.24	661.62	-320.00 ***
23 - 93	-429.55	-347.97	-206.31 ***	23 - 3	-713.98	-574.36	-422.74 ***
23 - 48	-453.69	-312.07	-170.43 ***	23 - 35	-709.16	358.54	-416.92 ***
23 - 66	-363.73	-282.11	-100.80 ***	23 - 94	-637.20	-515.58	-373.96 ***
23 - 83	-339.38	-217.70	-76.14 ***	23 - 32	-612.71	-471.10	-329.48 ***
23 - 35	-354.32	-212.70	-71.08 ***	23 - 31	-597.91	-450.30	-314.98 ***
23 - 49	-309.73	-186.07	-23.38 ***	23 - 80	-587.11	-445.49	-303.87 ***
23 - 65	-294.44	-152.43	-11.20 ***	23 - 83	-547.77	-405.13	-264.52 ***
23 - 30	-293.50	-151.86	-10.26 ***	23 - 38	-540.11	-398.49	-256.87 ***
23 - 15	-282.27	-149.66	-9.99	23 - 93	-498.13	-356.81	-214.89 ***
23 - 36	-280.08	-138.43	-3.14	23 - 48	-462.27	-320.65	-179.92 ***
23 - 6	-266.17	-126.33	15.07	23 - 10	-382.31	-250.66	-109.07 ***
23 - 38	-255.46	-113.84	27.78	23 - 33	-367.94	-225.34	-84.72 ***
23 - 33	-251.70	-110.06	31.53	23 - 35	-361.90	-221.28	-79.66 ***
23 - 45	-237.74	-96.12	45.98	23 - 49	-318.34	-173.25	-32.16 ***
23 - 36	-234.12	-92.50	49.12	23 - 60	-301.02	-161.40	-19.78 ***
23 - 9	-231.66	-91.07	50.55	23 - 12	-290.86	-149.24	-7.62 ***
23 - 77	-225.12	-83.30	58.12	23 - 54	-288.98	-147.06	-5.44 ***
23 - 47	-224.01	-82.39	59.23	23 - 6	-276.73	-135.14	6.48
23 - 51	-208.05	-66.43	73.19	23 - 26	-264.04	-122.42	39.19
23 - 38	-191.30	-49.44	91.94	23 - 33	-260.25	-118.67	22.95
23 - 1	-190.89	-49.37	92.35	23 - 49	-246.32	-104.70	36.92
23 - 9	-190.74	-49.13	92.48				

Comparación									
Comparación: Grand Est									
07 - 66 -341.15 -199.50 -57.92 ***	32 - 60 -434.06 -491.22 -351.05 ***	21 - 54 -862.14 -730.54 -518.93 ***	08 - 54 -300.00 -445.97 -323.45 ***	09 - 55 -750.08 -617.46 -473.84 ***	10 - 55 -557.05 -413.43 -273.81 ***	11 - 54 -716.12 -574.30 -453.88 ***	12 - 54 -671.63 -530.01 -388.39 ***	13 - 51 -616.63 -513.71 -375.32 ***	14 - 50 -646.92 -504.49 -362.79 ***
07 - 56 -340.22 -198.60 -56.98 ***	32 - 56 -391.55 -453.95 -312.31 ***	21 - 53 -774.90 -653.28 -491.96 ***	08 - 55 -605.04 -445.97 -323.45 ***	09 - 55 -750.08 -617.46 -473.84 ***	10 - 55 -557.05 -413.43 -273.81 ***	11 - 54 -716.12 -574.30 -453.88 ***	12 - 54 -671.63 -530.01 -388.39 ***	13 - 51 -616.63 -513.71 -375.32 ***	14 - 50 -646.92 -504.49 -362.79 ***
07 - 15 -328.79 -187.37 -43.79 ***	32 - 55 -367.87 -446.28 -304.06 ***	21 - 52 -774.90 -653.28 -491.96 ***	08 - 54 -605.04 -445.97 -323.45 ***	09 - 55 -750.08 -617.46 -473.84 ***	10 - 55 -557.05 -413.43 -273.81 ***	11 - 54 -716.12 -574.30 -453.88 ***	12 - 54 -671.63 -530.01 -388.39 ***	13 - 51 -616.63 -513.71 -375.32 ***	14 - 50 -646.92 -504.49 -362.79 ***
07 - 56 -326.81 -185.19 -43.57 ***	32 - 48 -510.05 -568.43 -246.81 ***	21 - 51 -716.12 -574.30 -453.88 ***	08 - 53 -605.04 -445.97 -323.45 ***	09 - 53 -750.08 -617.46 -473.84 ***	10 - 53 -557.05 -413.43 -273.81 ***	11 - 52 -716.12 -574.30 -453.88 ***	12 - 52 -671.63 -530.01 -388.39 ***	13 - 51 -616.63 -513.71 -375.32 ***	14 - 50 -646.92 -504.49 -362.79 ***
07 - 6 -314.49 -173.37 -51.03 ***	32 - 49 -440.09 -294.49 -154.86 ***	21 - 50 -716.12 -574.30 -453.88 ***	08 - 52 -605.04 -445.97 -323.45 ***	09 - 52 -750.08 -617.46 -473.84 ***	10 - 52 -557.05 -413.43 -273.81 ***	11 - 51 -716.12 -574.30 -453.88 ***	12 - 51 -671.63 -530.01 -388.39 ***	13 - 50 -616.63 -513.71 -375.32 ***	14 - 49 -646.92 -504.49 -362.79 ***
07 - 26 -332.18 -169.56 -18.94 ***	32 - 50 -415.74 -274.12 -152.50 ***	21 - 49 -716.12 -574.30 -453.88 ***	08 - 51 -605.04 -445.97 -323.45 ***	09 - 51 -750.08 -617.46 -473.84 ***	10 - 51 -557.05 -413.43 -273.81 ***	11 - 50 -716.12 -574.30 -453.88 ***	12 - 50 -671.63 -530.01 -388.39 ***	13 - 49 -616.63 -513.71 -375.32 ***	14 - 48 -646.92 -504.49 -362.79 ***
07 - 13 -298.42 -156.80 -10.18 ***	32 - 51 -410.68 -244.06 -127.43 ***	21 - 48 -716.12 -574.30 -453.88 ***	08 - 50 -605.04 -445.97 -323.45 ***	09 - 50 -750.08 -617.46 -473.84 ***	10 - 50 -557.05 -413.43 -273.81 ***	11 - 49 -716.12 -574.30 -453.88 ***	12 - 49 -671.63 -530.01 -388.39 ***	13 - 48 -616.63 -513.71 -375.32 ***	14 - 47 -646.92 -504.49 -362.79 ***
07 - 18 -280.84 -139.22 -2.40	32 - 52 -366.12 -223.03 -98.95 ***	21 - 47 -716.12 -574.30 -453.88 ***	08 - 49 -605.04 -445.97 -323.45 ***	09 - 49 -750.08 -617.46 -473.84 ***	10 - 49 -557.05 -413.43 -273.81 ***	11 - 48 -716.12 -574.30 -453.88 ***	12 - 48 -671.63 -530.01 -388.39 ***	13 - 47 -616.63 -513.71 -375.32 ***	14 - 46 -646.92 -504.49 -362.79 ***
07 - 9 -279.40 -137.70 -3.84	32 - 53 -330.80 -209.18 -67.57 ***	21 - 46 -716.12 -574.30 -453.88 ***	08 - 48 -605.04 -445.97 -323.45 ***	09 - 48 -750.08 -617.46 -473.84 ***	10 - 48 -557.05 -413.43 -273.81 ***	11 - 47 -716.12 -574.30 -453.88 ***	12 - 47 -671.63 -530.01 -388.39 ***	13 - 46 -616.63 -513.71 -375.32 ***	14 - 45 -646.92 -504.49 -362.79 ***
07 - 77 -271.84 -130.32 -11.40	32 - 54 -338.04 -197.02 -93.40 ***	21 - 45 -716.12 -574.30 -453.88 ***	08 - 47 -605.04 -445.97 -323.45 ***	09 - 47 -750.08 -617.46 -473.84 ***	10 - 47 -557.05 -413.43 -273.81 ***	11 - 46 -716.12 -574.30 -453.88 ***	12 - 46 -671.63 -530.01 -388.39 ***	13 - 45 -616.63 -513.71 -375.32 ***	14 - 44 -646.92 -504.49 -362.79 ***
07 - 47 -270.72 -129.19 -12.51	32 - 55 -336.45 -194.86 -93.22 ***	21 - 44 -716.12 -574.30 -453.88 ***	08 - 46 -605.04 -445.97 -323.45 ***	09 - 46 -750.08 -617.46 -473.84 ***	10 - 46 -557.05 -413.43 -273.81 ***	11 - 45 -716.12 -574.30 -453.88 ***	12 - 45 -671.63 -530.01 -388.39 ***	13 - 44 -616.63 -513.71 -375.32 ***	14 - 43 -646.92 -504.49 -362.79 ***
07 - 51 -254.76 -113.15 -28.47	32 - 56 -324.54 -182.92 -41.30 ***	21 - 43 -716.12 -574.30 -453.88 ***	08 - 45 -605.04 -445.97 -323.45 ***	09 - 45 -750.08 -617.46 -473.84 ***	10 - 45 -557.05 -413.43 -273.81 ***	11 - 44 -716.12 -574.30 -453.88 ***	12 - 44 -671.63 -530.01 -388.39 ***	13 - 43 -616.63 -513.71 -375.32 ***	14 - 42 -646.92 -504.49 -362.79 ***
07 - 28 -238.02 -96.40 -45.22	32 - 57 -311.82 -170.24 -28.99 ***	21 - 42 -716.12 -574.30 -453.88 ***	08 - 44 -605.04 -445.97 -323.45 ***	09 - 44 -750.08 -617.46 -473.84 ***	10 - 44 -557.05 -413.43 -273.81 ***	11 - 43 -716.12 -574.30 -453.88 ***	12 - 43 -671.63 -530.01 -388.39 ***	13 - 42 -616.63 -513.71 -375.32 ***	14 - 41 -646.92 -504.49 -362.79 ***
07 - 1 -237.66 -95.98 -45.64	32 - 58 -304.04 -166.05 -24.83 ***	21 - 41 -716.12 -574.30 -453.88 ***	08 - 43 -605.04 -445.97 -323.45 ***	09 - 43 -750.08 -617.46 -473.84 ***	10 - 43 -557.05 -413.43 -273.81 ***	11 - 42 -716.12 -574.30 -453.88 ***	12 - 42 -671.63 -530.01 -388.39 ***	13 - 41 -616.63 -513.71 -375.32 ***	14 - 40 -646.92 -504.49 -362.79 ***
07 - 5 -237.44 -95.84 -45.78	32 - 59 -294.10 -152.48 -10.89 ***	21 - 40 -716.12 -574.30 -453.88 ***	08 - 42 -605.04 -445.97 -323.45 ***	09 - 42 -750.08 -617.46 -473.84 ***	10 - 42 -557.05 -413.43 -273.81 ***	11 - 41 -716.12 -574.30 -453.88 ***	12 - 41 -671.63 -530.01 -388.39 ***	13 - 40 -616.63 -513.71 -375.32 ***	14 - 39 -646.92 -504.49 -362.79 ***
07 - 29 -231.71 -90.00 -51.32	32 - 60 -289.05 -147.43 -9.81 ***	21 - 39 -716.12 -574.30 -453.88 ***	08 - 41 -605.04 -445.97 -323.45 ***	09 - 41 -750.08 -617.46 -473.84 ***	10 - 41 -557.05 -413.43 -273.81 ***	11 - 40 -716.12 -574.30 -453.88 ***	12 - 40 -671.63 -530.01 -388.39 ***	13 - 39 -616.63 -513.71 -375.32 ***	14 - 38 -646.92 -504.49 -362.79 ***
07 - 8 -228.09 -86.47 -55.15	32 - 61 -281.69 -139.87 -1.73	21 - 38 -716.12 -574.30 -453.88 ***	08 - 40 -605.04 -445.97 -323.45 ***	09 - 40 -750.08 -617.46 -473.84 ***	10 - 40 -557.05 -413.43 -273.81 ***	11 - 39 -716.12 -574.30 -453.88 ***	12 - 39 -671.63 -530.01 -388.39 ***	13 - 38 -616.63 -513.71 -375.32 ***	14 - 37 -646.92 -504.49 -362.79 ***
07 - 23 -211.34 -89.73 -71.89	32 - 62 -270.37 -128.73 -2.07	21 - 37 -716.12 -574.30 -453.88 ***	08 - 42 -605.04 -445.97 -323.45 ***	09 - 42 -750.08 -617.46 -473.84 ***	10 - 42 -557.05 -413.43 -273.81 ***	11 - 41 -716.12 -574.30 -453.88 ***	12 - 41 -671.63 -530.01 -388.39 ***	13 - 40 -616.63 -513.71 -375.32 ***	14 - 39 -646.92 -504.49 -362.79 ***
07 - 17 -198.33 -86.72 -44.90	32 - 63 -264.41 -122.79 -18.82	21 - 36 -716.12 -574.30 -453.88 ***	08 - 43 -605.04 -445.97 -323.45 ***	09 - 43 -750.08 -617.46 -473.84 ***	10 - 43 -557.05 -413.43 -273.81 ***	11 - 42 -716.12 -574.30 -453.88 ***	12 - 42 -671.63 -530.01 -388.39 ***	13 - 41 -616.63 -513.71 -375.32 ***	14 - 40 -646.92 -504.49 -362.79 ***
07 - 46 -187.58 -45.98 -93.74	32 - 64 -254.17 -116.05 -24.83 ***	21 - 35 -716.12 -574.30 -453.88 ***	08 - 44 -605.04 -445.97 -323.45 ***	09 - 44 -750.08 -617.46 -473.84 ***	10 - 44 -557.05 -413.43 -273.81 ***	11 - 43 -716.12 -574.30 -453.88 ***	12 - 43 -671.63 -530.01 -388.39 ***	13 - 42 -616.63 -513.71 -375.32 ***	14 - 41 -646.92 -504.49 -362.79 ***
07 - 22 -179.73 -35.13 -103.49	32 - 65 -247.67 -106.03 -35.57	21 - 34 -716.12 -574.30 -453.88 ***	08 - 45 -605.04 -445.97 -323.45 ***	09 - 45 -750.08 -617.46 -473.84 ***	10 - 45 -557.05 -413.43 -273.81 ***	11 - 44 -716.12 -574.30 -453.88 ***	12 - 44 -671.63 -530.01 -388.39 ***	13 - 43 -616.63 -513.71 -375.32 ***	14 - 42 -646.92 -504.49 -362.79 ***
07 - 63 -245.47 -3.85 -107.77	32 - 66 -241.23 -101.63 -35.99	21 - 33 -716.12 -574.30 -453.88 ***	08 - 46 -605.04 -445.97 -323.45 ***	09 - 46 -750.08 -617.46 -473.84 ***	10 - 46 -557.05 -413.43 -273.81 ***	11 - 45 -716.12 -574.30 -453.88 ***	12 - 45 -671.63 -530.01 -388.39 ***	13 - 44 -616.63 -513.71 -375.32 ***	14 - 43 -646.92 -504.49 -362.79 ***
07 - 11 -79.39 -62.05 -203.04	32 - 67 -231.19 -91.47 -93.97	21 - 32 -716.12 -574.30 -453.88 ***	08 - 47 -605.04 -445.97 -323.45 ***	09 - 47 -750.08 -617.46 -473.84 ***	10 - 47 -557.05 -413.43 -273.81 ***	11 - 46 -716.12 -574.30 -453.88 ***	12 - 46 -671.63 -530.01 -388.39 ***	13 - 45 -616.63 -513.71 -375.32 ***	14 - 44 -646.92 -504.49 -362.79 ***
07 - 12 -63.34 -21.68 -162.40	32 - 68 -220.99 -91.37 -62.24	21 - 31 -716.12 -574.30 -453.88 ***	08 - 48 -605.04 -445.97 -323.45 ***	09 - 48 -750.08 -617.46 -473.84 ***	10 - 48 -557.05 -413.43 -273.81 ***	11 - 47 -716.12 -574.30 -453.88 ***	12 - 47 -671.63 -530.01 -388.39 ***	13 - 46 -616.63 -513.71 -375.32 ***	14 - 45 -646.92 -504.49 -362.79 ***
07 - 30 -101.23 -24.09 -243.09	32 - 69 -210.00 -82.00 -364.24 ***	21 - 30 -716.12 -574.30 -453.88 ***	08 - 49 -605.04 -445.97 -323.45 ***	09 - 49 -750.08 -617.46 -473.84 ***	10 - 49 -557.05 -413.43 -273.81 ***	11 - 48 -716.12 -574.30 -453.88 ***	12 - 48 -671.63 -530.01 -388.39 ***	13 - 47 -616.63 -513.71 -375.32 ***	14 - 46 -646.92 -504.49 -362.79 ***
07 - 13 -101.47 -243.09 -384.71 ***	32 - 70 -197.66 -81.33 -364.06 ***	21 - 29 -716.12 -574.30 -453.88 ***	08 - 50 -605.04 -445.97 -323.45 ***	09 - 50 -750.08 -617.46 -473.84 ***	10 - 50 -557.05 -413.43 -273.81 ***	11 - 49 -716.12 -574.30 -453.88 ***	12 - 49 -671.63 -530.01 -388.39 ***	13 - 48 -616.63 -513.71 -375.32 ***	14 - 47 -646.92 -504.49 -362.79 ***
07 - 26 -101.23 -23.27 -393.89 ***	32 - 71 -196.33 -80.37 -363.55 ***	21 - 28 -716.12 -574.30 -453.88 ***	08 - 51 -605.04 -445.97 -323.45 ***	09 - 51 -750.08 -617.46 -473.84 ***	10 - 51 -557.05 -413.43 -273.81 ***	11 - 50 -716.12 -574.30 -453.88 ***	12 - 50 -671.63 -530.01 -388.39 ***	13 - 49 -616.63 -513.71 -375.32 ***	14 - 48 -646.92 -504.49 -362.79 ***
07 - 7 -218.41 -60.05 -461.03 ***	32 - 72 -186.08 -79.34 -363.40 ***	21 - 27 -716.12 -574.30 -453.88 ***	08 - 52 -605.04 -445.97 -323.45 ***	09 - 52 -750.08 -617.46 -473.84 ***	10 - 52 -557.05 -413.43 -273.81 ***	11 - 51 -716.12 -574.30 -453.88 ***	12 - 51 -671.63 -530.01 -388.39 ***	13 - 50 -616.63 -513.71 -375.32 ***	14 - 49 -646.92 -504.49 -362.79 ***
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07 - 47 -274.76 -133.14 -1.48	32 - 74 -184.77 -78.95 -363.45 ***	21 - 25 -716.12 -574.30 -453.88 ***	08 - 54 -605.04 -445.97 -323.45 ***	09 - 54 -750.08 -617.46 -473.84 ***	10 - 54 -557.05 -413.43 -273.81 ***	11 - 53 -716.12 -574.30 -453.88 ***	12 - 53 -671.63 -530.01 -388.39 ***	13 - 52 -616.63 -513.71 -375.32 ***	14 - 51 -646.92 -504.49 -362.79 ***
07 - 51 -238.90 -117.18 -24.44	32 - 75 -182.06 -78.95 -363.45 ***	21 - 24 -716.12 -574.30 -453.88 ***	08 - 55 -605.04 -445.97 -323.45 ***	09 - 55 -750.08 -617.46 -473.84 ***	10 - 55 -557.05 -413.43 -273.81 ***	11 - 54 -716.12 -574.30 -453.88 ***	12 - 54 -671.63 -530.01 -388.39 ***	13 - 53 -616.63 -513.71 -375.32 ***	14 - 52 -646.92 -504.49 -362.79 ***
07 - 28 -242.05 -100.43 -41.18	32 - 76 -181.06 -78.95 -363.45 ***	21 - 23 -716.12 -574.30 -453.88 ***	08 - 56 -605.04 -445.97 -323.45 ***	09 - 56 -750.08 -617.46 -473.84 ***	10 - 56 -557.05 -413.43 -273.81 ***	11 - 55 -716.12 -574.30 -453.88 ***	12 - 55 -671.63 -530.01 -388.39 ***	13 - 54 -616.63 -513.71 -375.32 ***	14 - 53 -646.92 -504.49 -362.79 ***
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UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
BIBLIOTECA CENTRAL

Comisiones Oficiales		Comisiones	
27 - 23	-8.66	115.96	294.36
27 - 16	-1.03	140.57	282.18
27 - 61	15.33	157.17	288.75 ***
27 - 30	33.33	175.94	315.34 ***
27 - 15	76.28	217.04	358.51 ***
27 - 36	83.46	227.08	348.70 ***
27 - 30	142.06	283.68	425.30 ***
27 - 7	294.22	439.84	597.46 ***
14 - 34	-878.30	-736.77	-593.13 ***
14 - 3	-791.13	-669.31	-507.90 ***
14 - 35	-773.31	-633.09	-492.08 ***
14 - 34	-732.36	-590.74	-449.12 ***
14 - 32	-687.87	-546.23	-404.03 ***
14 - 31	-673.07	-531.43	-395.81 ***
14 - 60	-662.36	-500.64	-379.02 ***
14 - 63	-632.92	-481.30	-330.68 ***
14 - 30	-615.27	-473.66	-332.03 ***
14 - 93	-573.28	-431.86	-290.08 ***
14 - 48	-537.42	-395.80	-254.18 ***
14 - 69	-487.47	-323.81	-184.23 ***
14 - 88	-473.11	-314.43	-192.87 ***
14 - 55	-358.05	-269.43	-154.82 ***
14 - 49	-361.49	-230.44	-107.31 ***
14 - 68	-378.17	-236.56	-94.94 ***
14 - 50	-377.24	-235.62	-94.00 ***
14 - 13	-566.01	-224.39	-82.77 ***
14 - 36	-563.83	-222.21	-90.39 ***
14 - 5	-331.91	-310.39	-98.07 ***
14 - 58	-339.20	-197.58	-93.96 ***
14 - 35	-335.44	-197.02	-92.30 ***
14 - 45	-321.47	-179.85	-88.24 ***
14 - 18	-317.84	-176.24	-84.02 ***
14 - 9	-316.42	-174.99	-33.18 ***
14 - 77	-308.86	-167.34	-25.02 ***
14 - 47	-307.74	-166.11	-24.51 ***
14 - 51	-291.70	-150.17	-8.55 ***
14 - 28	-273.04	-133.41	8.30
14 - 1	274.62	133.06	8.93
14 - 5	274.48	132.86	8.75
14 - 39	-268.73	-127.11	14.51
14 - 8	-265.11	-123.49	18.13
14 - 23	-288.36	-100.73	34.87
14 - 17	-223.33	-85.76	57.88
14 - 46	-228.52	-82.98	58.73
14 - 22	-210.77	-75.15	66.47
14 - 62	-182.45	-46.87	100.73
14 - 67	-178.64	-37.91	104.90
14 - 63	-174.90	-32.78	108.63
14 - 33	-168.99	-27.37	114.33
14 - 37	-166.76	-27.14	114.48
14 - 24	-137.86	-16.24	123.38
14 - 27	-153.45	-11.83	129.79
14 - 21	-154.49	-6.71	148.34
14 - 19	-152.34	9.28	190.99
14 - 11	-116.41	25.01	166.61
14 - 12	-100.56	41.06	182.67
14 - 4	-89.15	52.47	194.09
14 - 64	-85.72	55.50	197.32
14 - 16	-85.92	56.60	198.12
14 - 2	-61.83	79.78	221.41
14 - 23	-70.49	121.13	363.75
14 - 10	-42.88	128.74	270.35
14 - 61	3.72	163.34	280.95 ***
14 - 32	20.32	162.11	303.73 ***
14 - 13	64.43	200.07	347.69 ***
14 - 26	73.63	215.25	356.87 ***
14 - 39	130.23	217.83	413.47 ***
14 - 7	282.39	424.91	503.03 ***
14 - 54	-885.12	-743.56	-601.98 ***
14 - 3	-797.86	-656.24	-514.62 ***
14 - 35	-783.04	-640.41	-498.89 ***
14 - 34	-779.08	-597.46	-453.84 ***
14 - 32	-884.39	-532.97	-411.33 ***
14 - 31	-879.79	-332.17	-306.53 ***
14 - 69	-688.58	-227.37	-302.73 ***
14 - 43	-529.63	-488.01	-348.41 ***
21 - 39	-821.99	-686.37	-338.75 ***
21 - 93	-380.01	-438.39	-296.77 ***
21 - 46	-364.13	-402.51	-260.91 ***
21 - 68	-474.19	-332.37	-190.93 ***
21 - 85	-449.82	-302.32	-166.60 ***
21 - 33	-444.78	-303.16	-161.34 ***
21 - 49	-400.21	-297.13	-114.04 ***
21 - 66	-384.98	-243.28	-101.66 ***
21 - 50	-383.99	-242.34	-102.73 ***
21 - 13	-372.74	-231.12	-89.50 ***
21 - 54	-370.53	-228.94	-97.32 ***
21 - 6	-358.63	-217.01	-75.39 ***
21 - 38	-343.92	-204.30	-82.62 ***
21 - 33	-342.16	-200.53	-59.93 ***
21 - 43	-328.20	-186.58	-44.94 ***
21 - 18	-324.50	-182.96	41.34 ***
21 - 9	-373.13	-181.83	39.91 ***
21 - 77	-315.58	-175.96	32.34 ***
21 - 47	-314.67	-172.83	31.73 ***
21 - 51	-298.51	-156.98	15.37 ***
21 - 28	-281.76	-140.14	1.48
21 - 1	-281.31	-139.73	1.89
21 - 5	-281.20	-139.39	2.03
21 - 29	-273.45	-153.83	7.73
21 - 8	-271.81	-150.22	11.49
21 - 33	-255.09	-113.47	28.15
21 - 17	-232.08	-80.46	51.16
21 - 66	-231.24	-80.61	51.99
21 - 23	-223.50	-81.88	58.74
21 - 62	-189.21	-47.39	94.82
21 - 97	-183.36	-43.74	97.87
21 - 63	-181.33	-39.71	101.91
21 - 32	-173.71	-36.19	107.32
21 - 37	-173.48	-33.87	107.73
21 - 24	-164.39	-32.94	118.66
21 - 29	-160.17	-16.55	123.06
21 - 16	-148.34	-6.72	154.38
21 - 19	-139.06	2.35	144.17
21 - 11	-123.34	16.28	159.90
21 - 12	-101.29	34.25	113.95
21 - 4	-43.88	43.24	101.36
21 - 24	-92.44	49.18	100.80
21 - 16	-91.73	49.87	101.49
21 - 3	-48.55	73.99	214.69
21 - 25	-27.32	114.40	256.02
21 - 10	-19.66	122.01	262.93
21 - 61	-3.00	138.62	286.24
21 - 20	12.79	185.41	297.03 ***
21 - 15	37.72	195.34	340.95 ***
21 - 26	46.91	208.53	330.18 ***
21 - 20	113.51	205.12	406.74 ***
21 - 7	273.67	417.49	558.90 ***
19 - 34	-947.07	-746.05	-604.43 ***
19 - 3	-900.41	-651.79	-517.17 ***
19 - 35	-784.59	-542.97	-501.36 ***
19 - 54	-241.03	-600.02	-518.49 ***
19 - 32	-697.15	-523.53	-412.01 ***
19 - 31	-482.35	-540.73	-399.11 ***
19 - 60	-671.34	-520.92	-388.30 ***
19 - 43	-432.23	-490.56	-342.96 ***
19 - 39	-224.54	-482.93	-341.31 ***
19 - 33	-382.56	-440.94	-342.82 ***
19 - 13	-771.29	-231.67	-93.03 ***
19 - 50	-713.11	-213.49	-93.87 ***
19 - 6	-501.19	-219.37	-77.93 ***
19 - 38	-342.47	-204.96	-45.24 ***
19 - 33	-344.72	-203.10	-41.48 ***
19 - 43	-330.75	-189.13	-47.52 ***
19 - 38	-321.14	-183.52	-43.06 ***
19 - 9	-325.77	-184.06	-42.46 ***
19 - 77	-314.14	-176.32	-34.90 ***
19 - 47	-317.05	-173.40	-33.78 ***
19 - 31	-301.05	-159.44	-12.83 ***
19 - 28	-284.32	-142.70	-1.08 ***
19 - 1	-283.90	-142.28	-0.85 ***
19 - 5	-283.70	-142.16	-0.32 ***
19 - 29	-278.01	-142.39	-0.33 ***
19 - 8	-214.39	-131.77	6.83
19 - 23	-257.64	-116.92	25.59
19 - 17	-234.03	-93.01	44.60
19 - 46	-233.80	-92.18	49.44
19 - 22	-226.05	-92.03	57.19
19 - 2	-21.10	70.51	212.13
19 - 25	-20.77	111.85	253.47
19 - 10	-22.16	119.45	261.06
19 - 61	-5.35	150.95	277.59
19 - 22	-109.89	31.79	173.80
19 - 4	-43.61	43.19	184.81
19 - 04	-92.00	46.62	184.24
19 - 16	-93.40	47.52	184.94
19 - 2	-71.10	70.51	212.13
19 - 35	-20.77	111.85	253.47
19 - 11	-125.89	15.73	137.54
19 - 12	-109.89	31.79	173.80
19 - 4	-35.17	196.79	338.41 ***
19 - 26	-64.39	205.97	347.59 ***
19 - 30	-120.95	262.57	304.19 ***
19 - 7	-273.11	414.73	356.35 ***
11 - 54	-903.40	-761.78	-620.16 ***
11 - 3	-816.18	-674.52	-511.90 ***
11 - 75	-800.32	-657.70	-517.08 ***
11 - 94	-751.36	-615.76	-474.12 ***
11 - 52	-712.87	-571.25	-429.63 ***
11 - 31	-692.07	-536.55	-414.83 ***
11 - 92	-687.38	-543.05	-404.03 ***
11 - 83	-617.93	-504.31	-364.96 ***
11 - 39	-642.27	-498.65	-357.03 ***
11 - 9	-598.29	-454.67	-315.00 ***
11 - 46	-562.43	-430.81	-279.19 ***
11 - 49	-492.47	-350.85	-209.23 ***
11 - 98	-468.12	-326.50	-184.88 ***
11 - 33	-462.03	-321.59	-179.82 ***
11 - 49	-418.49	-275.41	-132.52 ***
11 - 65	-401.15	-261.20	-119.94 ***
11 - 39	-401.72	-260.92	-119.00 ***
11 - 13	-381.02	-245.40	-107.78 ***
11 - 50	-386.83	-247.32	-105.00 ***
11 - 6	-374.91	-235.29	-93.07 ***
11 - 38	-364.20	-222.26	-80.96 ***
11 - 33	-360.44	-218.83	-71.21 ***
11 - 45	-344.48	-204.86	-67.24 ***
11 - 16	-342.89	-201.24	-59.02 ***
11 - 9	-341.43	-199.81	-58.19 ***
11 - 77	-333.86	-192.38	-50.82 ***
11 - 47	-332.75	-191.13	-49.51 ***
11 - 31	-316.79	-175.17	-32.55 ***
11 - 28	-300.04	-158.42	-16.80 ***
11 - 1	-295.82	-158.01	-16.39 ***
11 - 5	-299.49	-157.87	-16.33 ***
11 - 29	-293.73	-152.12	-16.05 ***
11 - 4	-290.12	-149.50	-16.08 ***
11 - 23	-273.37	-131.75	-9.87
11 - 17	-236.95	-103.74	-32.86 ***
11 - 46	-249.51	-107.91	33.78
11 - 22	-241.78	-100.18	41.46
11 - 42	-237.49	-62.04	55.74
11 - 67	-203.64	-62.03	79.39
11 - 37	-193.76	-52.13	89.47
11 - 24	-172.45	-30.64	104.78
11 - 14	-165.62	-23.01	116.61
11 - 21	-159.70	-16.28	123.34
11 - 19	-157.34	-15.73	125.89
11 - 12	-142.37	-16.03	127.82
11 - 4	-114.16	-27.46	165.08
11 - 64	-110.73	-30.90	172.52
11 - 16	-110.07	-31.59	173.28
11 - 2	-86.93	-34.79	196.41
11 - 25	-45.50	-94.12	237.74
11 - 30	-37.89	-103.73	245.39
11 - 61	-31.28	-120.34	261.94
11 - 20	-4.49	-137.13	278.79
11 - 13	-39.44	-181.06	322.68 ***
11 - 1	-39.44	-181.06	322.68 ***
11 - 55	-816.37	-674.75	-513.13 ***
11 - 94	-773.41	-631.79	-490.87 ***
11 - 32	-728.93	-587.30	-445.06 ***
11 - 38	-686.92	-540.92	-405.98 ***
11 - 30	-686.50	-534.89	-403.96 ***
11 - 2	-678.48	-434.86	-265.24 ***
11 - 39	-637.48	-215.80	-74.24 ***

Comparación														
Comparación	Gobernación	16 - 35	-420.45	-278.81	-137.19	***	16 - 46	-459.35	-318.63	-395.31	***			
16 - 31	-344.25	-292.93	-61.01	444	16 - 5	-608.50	-268.33	-153.79	***	16 - 49	-581.54	-446.97	-309.33	***
16 - 28	-327.31	-183.89	-44.27	***	16 - 34	-393.79	-234.17	-112.33	***	16 - 50	-564.24	-472.02	-281.00	***
16 - 1	-327.05	-183.47	-43.83	***	16 - 33	-392.04	-230.42	-104.80	***	16 - 52	-539.18	-417.54	-273.94	***
16 - 5	-326.93	-183.33	-43.71	***	16 - 43	-378.07	-210.45	-94.83	***	16 - 49	-514.02	-374.53	-228.44	***
16 - 26	-321.20	-179.36	-37.94	***	16 - 18	-374.41	-233.43	-91.31	***	16 - 60	-499.30	-337.68	-218.04	***
16 - 8	-317.53	-175.96	-34.34	***	16 - 9	-373.02	-231.45	-91.76	***	16 - 39	-493.34	-336.74	-213.17	***
16 - 23	-309.82	-159.21	-17.39	***	16 - 77	-369.43	-223.87	-81.21	***	16 - 13	-487.14	-343.32	-203.90	***
16 - 17	-277.82	-150.20	3.42		16 - 47	-364.34	-224.72	-81.10	***	16 - 36	-484.94	-343.34	-201.71	***
16 - 46	-276.99	-133.37	6.23		16 - 31	-346.38	-206.76	-63.14	***	16 - 6	-473.03	-331.41	-189.00	***
16 - 22	-269.28	-127.61	14.00		16 - 28	-331.67	-190.01	-64.40	***	16 - 34	-460.12	-318.79	-177.02	***
16 - 63	-234.96	-93.34	48.35		16 - 1	-331.22	-189.03	-67.96	***	16 - 32	-456.57	-314.93	-173.33	***
16 - 97	-231.11	-89.41	32.13		16 - 5	-331.00	-189.46	-67.84	***	16 - 45	-442.60	-300.99	-159.36	***
16 - 63	-227.07	-83.43	36.17		16 - 29	-325.31	-181.71	-61.09	***	16 - 18	-434.98	-297.34	-151.75	***
16 - 32	-221.46	-79.44	61.70		16 - 8	-321.71	-180.09	-58.47	***	16 - 9	-437.35	-295.93	-154.31	***
16 - 37	-221.23	-79.61	62.91		16 - 23	-304.90	-163.34	-61.72	***	16 - 77	-419.76	-288.36	-146.73	***
16 - 24	-210.32	-83.70	72.71		16 - 17	-281.93	-140.35	1.29		16 - 47	-428.87	-287.23	-145.03	***
16 - 27	-202.92	-94.36	77.32		16 - 44	-281.12	-139.50	2.12		16 - 31	-412.91	-271.29	-139.97	***
16 - 14	-194.09	-93.47	89.15		16 - 22	-273.37	-131.75	9.67		16 - 28	-396.16	-254.55	-112.93	***
16 - 23	-187.36	-93.74	93.89		16 - 65	-239.09	-97.47	44.13		16 - 5	-393.45	-253.99	-112.37	***
16 - 19	-184.81	-93.19	98.43		16 - 57	-239.24	-93.66	48.90		16 - 26	-319.84	-248.74	-106.62	***
16 - 11	-169.08	-27.46	144.16		16 - 63	-231.20	-89.58	53.04		16 - 8	-316.24	-244.62	-103.00	***
16 - 12	-153.03	-14.41	130.21		16 - 32	-225.59	-81.97	57.65		16 - 13	-308.45	-227.87	-86.23	***
16 - 64	-138.19	3.43	145.05		16 - 37	-223.36	-81.74	57.88		16 - 17	-304.48	-224.66	-82.24	***
16 - 16	-137.49	4.13	145.73		16 - 24	-214.45	-72.85	66.78		16 - 46	-345.65	-204.03	-82.41	***
16 - 2	-114.26	27.33	166.94		16 - 27	-210.05	-68.43	73.14		16 - 22	-317.90	-196.23	-84.66	***
16 - 25	-72.96	68.66	210.28		16 - 1	-198.22	-56.02	85.02		16 - 62	-303.62	-182.00	20.38	***
16 - 10	-65.35	76.27	217.89		16 - 21	-191.49	-49.87	91.75		16 - 67	-299.77	-189.13	-16.93	***
16 - 61	-48.74	92.88	234.49		16 - 19	-188.94	-47.32	94.30		16 - 65	-299.72	-184.11	-12.49	***
16 - 40	-31.93	109.67	251.29		16 - 11	-175.41	-31.59	116.03		16 - 32	-290.12	-186.36	-0.58	***
16 - 15	-11.88	153.60	293.22	***	16 - 12	-197.16	-13.34	126.08		16 - 21	-285.67	-168.37	-0.05	***
16 - 26	-21.17	162.74	304.10	***	16 - 4	-145.73	-4.13	137.49		16 - 24	-276.98	-137.36	4.26	
16 - 30	-77.26	217.58	361.00	***	16 - 9	-142.31	-0.69	140.92		16 - 21	-274.34	-132.96	8.66	
16 - 7	229.92	371.54	513.16	***	16 - 25	-77.09	64.33	306.15		16 - 1	-262.73	-121.17	20.42	
16 - 54	934.29	-792.48	-451.06	***	16 - 10	-69.47	73.14	213.76		16 - 21	-255.02	-114.40	27.22	
16 - 3	-817.07	-705.42	-349.96	***	16 - 51	-52.87	68.75	230.37		16 - 19	-233.47	-111.83	29.77	
16 - 55	-831.33	-689.80	-347.98	***	16 - 20	-36.08	103.34	247.16		16 - 11	-237.14	-96.12	45.34	
16 - 54	-788.24	-645.64	-303.01	***	16 - 13	7.83	149.47	201.09	***	16 - 12	-221.09	-90.97	61.53	
16 - 52	-743.77	-602.15	-260.93		16 - 26	17.04	138.66	200.37	***	16 - 4	-210.28	-88.66	72.95	
16 - 51	-722.97	-587.75	-245.73		16 - 30	73.63	213.23	336.87	***	16 - 6	-206.84	-69.23	76.39	
16 - 63	-718.16	-570.34	-244.92	***	16 - 2	225.80	367.41	309.03	***	16 - 16	-205.13	-64.33	77.09	
16 - 53	-678.82	-537.20	-245.58	***	16 - 34	-658.19	-816.57	-674.93	***	16 - 34	-1007.13	-863.91	-723.89	***
16 - 58	-671.17	-529.35	-237.93	***	2 - 3	-870.91	-735.31	-587.09	***	16 - 3	-919.87	-778.75	-636.63	***
16 - 53	-629.18	-487.37	-343.95	***	2 - 33	-835.11	-783.49	-571.37	***	16 - 23	-904.05	-752.43	-420.31	***
16 - 48	-593.32	-451.71	-310.09	***	2 - 94	-812.15	-767.33	-528.71	***	16 - 94	-861.08	-719.47	-377.83	***
16 - 49	-581.33	-381.75	-240.13		2 - 32	-767.64	-704.06	-484.42	***	16 - 32	-816.04	-676.92	-333.36	***
16 - 56	-549.01	-357.39	-215.78	***	2 - 31	-752.80	-611.24	-465.02	***	16 - 31	-801.80	-662.18	-318.52	***
16 - 53	-543.98	-352.34	-210.72	***	2 - 50	-742.05	-600.43	-464.81	***	16 - 60	-790.94	-649.34	-307.76	***
16 - 49	-449.39	-306.30	-163.32	***	2 - 83	-702.71	-561.09	-419.48	***	16 - 43	-751.60	-610.04	-468.43	***
16 - 66	-454.08	-291.45	-150.84	***	2 - 59	-695.34	-553.44	-411.82	***	16 - 36	-744.00	-602.34	-460.76	***
16 - 50	-493.14	-291.32	-149.90	***	2 - 73	-653.08	-511.46	-369.84	***	16 - 93	-702.02	-560.49	-418.78	***
16 - 13	-421.91	-280.39	-138.57	***	2 - 49	-617.22	-475.33	-333.99	***	16 - 48	-696.19	-524.56	-392.72	***
16 - 34	-419.73	-279.11	-136.49	***	2 - 1	-547.00	-394.18	-261.57	***	16 - 6	-595.20	-454.58	-312.96	***
16 - 6	-407.81	-266.19	-124.37		2 - 50	-457.03	-315.41	-213.79	***	16 - 45	-511.83	-430.23	-288.51	***
16 - 38	-395.10	-251.48	-111.66		2 - 13	-445.80	-304.18	-216.57	***	16 - 33	-565.79	-425.17	-283.15	***
16 - 31	-391.34	-249.72	-108.10	***	2 - 36	-443.82	-301.00	-210.39	***	16 - 49	-542.22	-379.14	-236.03	***
16 - 43	-377.58	-233.76	-94.14	***	2 - 1	-413.23	-273.61	-132.00	***	16 - 36	-504.91	-363.79	-223.97	***
16 - 18	-375.76	-232.16	-90.32	***	2 - 45	-401.27	-259.63	-111.03	***	16 - 13	-494.72	-353.13	-211.31	***
16 - 9	-372.92	-230.71	-89.00	***	2 - 19	-397.63	-256.03	-114.41	***	16 - 54	-492.57	-350.93	-209.33	***
16 - 71	-366.76	-226.14	-81.52	***	2 - 9	-396.22	-254.00	-111.98	***	16 - 28	-489.64	-339.02	-197.40	***
16 - 47	-365.48	-222.03	-80.41	***	2 - 77	-368.65	-241.05	-103.41	***	16 - 58	-467.92	-326.31	-184.69	***
16 - 51	-347.68	-200.07	-84.43	***	2 - 47	-367.54	-245.92	-104.30	***	16 - 42	-441.27	-302.13	-180.34	***
16 - 28	-330.52	-181.36	-71.39	***	2 - 23	-354.83	-213.21	-101.59	***	16 - 1	-403.56	-264.74	-120.13	***
16 - 23	-328.35	-176.77	-64.85	***	2 - 27	-323.24	-210.62	-100.00	***	16 - 3	-403.22	-261.60	-119.98	***
16 - 65	-323.50	-168.69	-52.73		2 - 14	-321.41	-199.79	-61.83		16 - 29	-397.46	-255.83	-114.23	***
16 - 52	-324.99	-162.27	-58.55		2 - 53	-254.40	-112.78	28.84		16 - 8	-393.65	-272.23	-110.51	***
16 - 71	-324.66	-163.04	-56.54		2 - 12	-248.78	-107.16	34.45		16 - 22	-372.10	-233.44	-81.86	***
16 - 24	-313.76	-72.14	-69.48		2 - 37	-245.55	-106.93	34.59		16 - 17	-334.04	-212.47	70.83	***
16 - 23	-309.35	-67.73	73.89		2 - 24	-237.03	-96.03	45.39		16 - 45	-333.22	-211.64	70.03	***
16 - 14	-197.52	-53.90	85.72		2 - 27	-233.24	-91.62	50.00		16 - 23	-345.51	-203.89	62.87	***
16 - 21	-170.80	-49.18	92.44		2 - 61	-70.07	65.19	207.17		16 - 62	-311.22	-199.61	-27.99	***
16 - 19	-188.34	-46.62	95.06		2 - 30	-59.28	62.34	213.96		16 - 65	-307.57	-195.76	34.14	***
16 - 11	-172.52	-30.90	110.72		2 - 13	-53.34	50.00	207.59		16 - 63	-303.34	-191.72	36.10	***
16 - 12	-156.46	-14.85	126.77		2 - 29	-49.41	34.79	86.83		16 - 72	-297.73	-156.11	34.49	***
16 - 4	-145.05	-3.43	136.19		2 - 12	-100.34	-36.71	102.88		16 - 24	-286.59	-144.97	-3.33	***
16 - 16	-149.92	0.49	142.31		2 - 23	-100.29	81.13	102.95		16 - 11	-270.37	-138.74	12.81	

Comendador										
01 - 33 - 920.66 - 779.04	-437.42	***	20 - 10 - 179.00	-31.46	146.22		26 - 19 - 347.29	-205.91	-54.35	
01 - 38 - 997.76 - 738.08	-284.46	***	20 - 01 - 158.41	-14.79	124.83		26 - 11 - 331.87	-190.15	-46.63	
01 - 32 - 853.21 - 691.39	-349.87	***	20 - 13 - 97.09	-43.83	185.55		26 - 12 - 315.82	-174.20	-32.38	
01 - 31 - 816.41 - 674.79	-333.17	***	20 - 30 - 88.90	-31.12	194.74		26 - 4 - 304.46	-192.78	-21.17	
01 - 30 - 807.69 - 665.78	-324.36	***	20 - 30 - 51.90	104.71	251.33		26 - 6 - 300.97	-189.35	-17.73	
01 - 29 - 756.16 - 620.54	-485.09	***	20 - 7 - 120.26	201.83	43.49	***	26 - 16 - 300.27	-188.64	-17.04	
01 - 29 - 750.61 - 618.99	-477.37	***	13 - 54 - 1084.40	-943.84	-801.22	***	26 - 26 - 235.74	-94.13	47.49	
01 - 23 - 718.67 - 577.01	-435.39	***	13 - 5 - 997.20	-833.58	-713.96	***	26 - 10 - 228.14	-86.51	55.10	
01 - 14 - 692.77 - 541.13	-389.53	***	13 - 55 - 981.38	-839.76	-598.14	***	26 - 61 - 211.53	-89.91	71.71	
01 - 49 - 612.91 - 471.19	-339.37	***	13 - 54 - 938.42	-795.90	-555.14	***	26 - 20 - 194.74	-33.12	88.30	
01 - 28 - 588.43 - 446.84	-363.22	***	13 - 52 - 891.93	-732.32	-610.76	***	26 - 15 - 150.80	-56.19	132.45	
01 - 23 - 583.40 - 441.74	-360.16	***	13 - 51 - 879.78	-737.52	-595.00	***	26 - 30 - 153.02	36.80	198.22	
01 - 49 - 538.63 - 393.13	-232.66	***	13 - 40 - 858.33	-724.71	-585.09	***	26 - 7 - 47.14	208.70	330.38	
01 - 66 - 523.71 - 381.99	-240.79	***	13 - 03 - 634.99	-587.37	-545.73	***	30 - 54 - 1130.24 - 1008.61	-807.00	***	
01 - 30 - 522.56 - 380.96	-239.14	***	13 - 26 - 821.33	-879.71	-558.09	***	30 - 3 - 1062.98	-921.34	-779.74	
01 - 13 - 511.05 - 369.73	-228.12	***	13 - 03 - 779.33	-637.73	-495.11	***	30 - 53 - 1047.16	-903.54	-763.92	
01 - 36 - 509.17 - 367.31	-235.34	***	13 - 48 - 741.49	-681.37	-450.23	***	30 - 54 - 1004.26	-862.39	-721.97	
01 - 6 - 497.32 - 333.03	-214.01	***	13 - 05 - 673.33	-531.91	-390.29	***	30 - 31 - 931.78	-818.19	-676.41	
01 - 26 - 484.54 - 342.92	-201.30	***	13 - 38 - 649.18	-587.36	-545.94	***	30 - 50 - 944.92	-803.30	-661.56	
01 - 23 - 480.73 - 339.16	-197.33	***	13 - 33 - 684.33	-592.30	-500.88	***	30 - 60 - 934.11	-792.49	-620.87	
01 - 45 - 456.82 - 325.26	-183.36	***	13 - 49 - 595.26	-545.47	-513.58	***	30 - 53 - 894.77	-753.15	-611.53	
01 - 08 - 463.24 - 321.98	-179.96	***	13 - 08 - 744.24	-642.41	-501.00	***	30 - 56 - 897.11	-749.50	-633.86	
01 - 9 - 461.77 - 320.15	-174.53	***	13 - 50 - 583.20	-441.66	-303.97	***	30 - 55 - 845.13	-703.51	-561.89	
01 - 27 - 454.29 - 318.52	-170.96	***	13 - 13 - 573.08	-439.45	-288.84	***	30 - 48 - 809.27	-767.09	-526.03	
01 - 47 - 453.09 - 311.47	-169.83	***	13 - 56 - 566.50	-425.28	-285.66	***	30 - 49 - 739.31	-597.70	-476.08	
01 - 21 - 437.13 - 295.31	-153.89	***	13 - 6 - 337.97	-216.35	-274.74	***	30 - 50 - 714.96	-573.34	-431.72	
01 - 26 - 420.16 - 278.76	-137.16	***	13 - 30 - 543.26	-407.64	-262.03	***	30 - 51 - 709.90	-568.24	-426.65	
01 - 1 - 419.56 - 278.34	-136.73	***	13 - 33 - 541.51	-395.85	-239.27	***	30 - 49 - 665.34	-522.25	-379.16	
01 - 5 - 419.92 - 278.20	-136.56	***	13 - 43 - 527.31	-385.92	-246.50	***	30 - 46 - 690.02	-568.40	-366.79	
01 - 39 - 414.07 - 272.45	-130.83	***	13 - 18 - 523.92	-382.30	-240.69	***	30 - 50 - 649.08	-507.47	-365.85	
01 - 3 - 410.43 - 268.84	-127.22	***	13 - 9 - 522.49	-380.47	-239.23	***	30 - 43 - 617.86	-496.34	-324.62	
01 - 23 - 383.71 - 252.09	-110.47	***	13 - 71 - 514.92	-373.30	-231.68	***	30 - 34 - 635.68	-494.06	-322.44	
01 - 17 - 376.70 - 239.08	-87.45	***	13 - 47 - 513.81	-372.19	-230.37	***	30 - 6 - 623.76	-482.14	-340.55	
01 - 16 - 359.86 - 238.34	-86.82	***	13 - 51 - 497.83	-350.23	-216.61	***	30 - 50 - 611.04	-489.41	-327.81	
01 - 22 - 362.11 - 220.50	-76.88	***	13 - 28 - 481.10	-339.43	-197.37	***	30 - 33 - 607.29	-465.87	-324.05	
01 - 3 - 327.83 - 186.21	-44.59	***	13 - 1 - 489.09	-339.07	-197.43	***	30 - 43 - 593.32	-454.70	-310.05	
01 - 67 - 323.95 - 182.36	-40.74	***	13 - 5 - 489.35	-336.93	-197.31	***	30 - 18 - 559.10	-448.09	-306.47	
01 - 68 - 319.95 - 178.33	-36.71	***	13 - 23 - 474.89	-333.18	-191.36	***	30 - 9 - 588.77	-446.63	-305.03	
01 - 29 - 314.33 - 172.71	-31.19	***	13 - 1 - 471.18	-337.36	-197.94	***	30 - 77 - 580.70	-439.09	-297.41	
01 - 7 - 314.10 - 172.42	-30.86	***	13 - 23 - 454.43	-312.61	-171.19	***	30 - 47 - 579.59	-437.97	-296.35	
01 - 24 - 303.29 - 161.34	-19.96	***	13 - 17 - 431.42	-289.90	-148.18	***	30 - 51 - 563.63	-422.01	-280.46	
01 - 21 - 298.79 - 157.17	-15.55	***	13 - 46 - 470.59	-289.97	-147.35	***	30 - 22 - 546.89	-405.27	-263.01	
01 - 14 - 256.96 - 145.34	-3.73	***	13 - 22 - 422.84	-281.23	-159.60	***	30 - 1 - 545.47	-404.83	-263.23	
01 - 21 - 280.24 - 138.62	3.00	***	13 - 42 - 388.56	-246.94	-105.32	***	30 - 3 - 545.33	-404.71	-263.09	
01 - 18 - 277.04 - 138.06	9.35	***	13 - 29 - 334.71	-243.99	-101.47	***	30 - 29 - 540.58	-398.96	-257.34	
01 - 11 - 281.94 - 120.34	21.28	***	13 - 19 - 334.41	-196.79	-95.17	***	30 - 8 - 535.96	-395.34	-253.72	
01 - 12 - 283.91 - 104.29	37.53	***	13 - 11 - 332.88	-191.06	-93.44	***	30 - 21 - 520.21	-378.39	-236.96	
01 - 4 - 254.49 - 92.88	48.74	***	13 - 12 - 306.03	-169.01	-93.39	***	30 - 17 - 497.20	-355.59	-213.97	
01 - 14 - 251.04 - 89.44	52.19	***	13 - 4 - 291.78	-225.23	-83.98	***	30 - 46 - 496.31	-354.75	-213.13	
01 - 16 - 235.77 - 86.71	52.37	***	13 - 23 - 211.32	-217.95	-76.23	***	30 - 23 - 488.82	-347.00	-203.38	
01 - 2 - 207.17 - 65.55	76.07	***	13 - 14 - 347.69	-207.07	-64.43	***	30 - 42 - 454.34	-312.72	-171.01	
01 - 26 - 165.84 - 24.22	117.49	***	13 - 21 - 344.95	-199.34	-57.72	***	30 - 17 - 490.49	-308.87	-161.25	
01 - 10 - 156.23 - 16.51	123.01	***	13 - 19 - 334.41	-196.79	-55.17	***	30 - 41 - 445.45	-304.83	-161.21	
01 - 20 - 124.83 - 16.76	158.41	***	13 - 11 - 332.88	-191.06	-53.44	***	30 - 37 - 440.84	-299.22	-157.00	
01 - 15 - 80.83 - 60.12	202.34	***	13 - 10 - 373.84	-233.21	-91.29	***	30 - 37 - 440.61	-298.99	-157.37	
01 - 26 - 79.71 - 61.71	66.91	211.53	***	13 - 44 - 291.78	-190.17	-83.59	***	30 - 24 - 429.70	-288.04	-146.47
01 - 30 - 75.11 - 16.26	236.51	208.13	***	13 - 16 - 291.09	-149.47	-78.83	***	30 - 27 - 425.90	-283.68	-141.08
01 - 7 - 137.03 - 278.47	420.29	***	13 - 1 - 267.38	-126.77	-75.24	***	30 - 14 - 413.47	-271.85	-130.23	
20 - 36 - 1060.33 - 898.91	-737.13	***	13 - 23 - 228.36	-84.94	-56.68	***	30 - 21 - 405.74	-265.14	-123.51	
20 - 3 - 953.27 - 841.65	-670.03	***	13 - 10 - 218.93	-77.13	-64.79	***	30 - 19 - 404.19	-262.37	-120.95	
20 - 35 - 937.45 - 795.83	-634.21	***	13 - 61 - 202.14	-80.72	-60.89	***	30 - 11 - 388.46	-246.84	-101.25	
20 - 34 - 894.47 - 752.87	-611.23	***	13 - 28 - 197.59	-63.93	-97.64	***	30 - 12 - 392.41	-230.79	-89.17	
20 - 32 - 850.99 - 708.38	-560.76	***	13 - 30 - 132.43	-9.19	150.30	***	30 - 4 - 361.00	-219.38	-77.76	
20 - 31 - 853.29 - 693.58	-531.90	***	13 - 30 - 77.64	-63.76	207.40	***	30 - 6 - 357.57	-215.93	-74.33	
20 - 40 - 824.39 - 682.78	-541.66	***	13 - 7 - 76.32	-214.74	-59.36	***	30 - 16 - 356.87	-215.25	-73.03	
20 - 35 - 785.32 - 645.44	-501.82	***	20 - 54 - 1993.64	-852.03	-810.41	***	30 - 1 - 333.67	-193.06	-50.44	
20 - 13 - 777.40 - 635.74	-494.16	***	20 - 1 - 1004.39	-664.77	-723.13	***	30 - 25 - 292.34	-150.73	-9.10	
20 - 44 - 699.56 - 587.94	-446.32	***	20 - 55 - 998.77	-848.85	-707.33	***	30 - 10 - 284.73	-143.11	-1.49	
20 - 36 - 692.60 - 487.98	-446.34	***	20 - 54 - 947.61	-805.98	-664.37	***	30 - 61 - 268.12	-120.91	(1.11)	
20 - 38 - 695.25 - 643.63	-521.01	***	20 - 29 - 903.12	-761.70	-591.98	***	30 - 20 - 231.33	-109.71	31.90	
20 - 33 - 600.19 - 498.37	-316.39	***	20 - 31 - 986.32	-744.70	-605.08	***	30 - 13 - 207.40	-95.78	73.84	
20 - 45 - 355.02 - 412.34	-289.45	***	20 - 60 - 877.31	-733.37	-594.27	***	30 - 20 - 198.22	-96.50	82.02	
20 - 38 - 340.31 - 299.37	-236.13	***	20 - 35 - 593.49	-454.87	-309.84	***	30 - 7 - 10.54	152.14	293.78	
20 - 30 - 336.74 - 293.37	-187.75	***	20 - 13 - 483.38	-343.74	-249.44	***	20 - 13 - 997.29	-853.07	-714.06	
20 - 47 - 450.98 - 328.26	-184.64	***	20 - 57 - 579.08	-437.46	-293.84	***	20 - 48 - 951.43	-819.81	-678.20	
20 - 51 - 453.92 - 312.50	-170.68	***	20 - 5 - 567.16	-425.54	-283.92	***	20 - 69 - 891.48	-749.86	-608.24	
20 - 36 - 437.17 - 295.55	-153.92	***	20 - 58 - 554.43	-412.43	-281.21	***	20 - 68 - 857.12	-725.50	-593.88	
20 - 1 - 436.75 - 295.16	-153.52	***	20 - 37 - 550.49	-407.07	-267.45	***	20 - 53 - 862.06	-720.45	-578.85	
20 - 3 - 436.61 - 295.00	-153.78	***	20 - 45 - 596.73	-533.11	-253.49	***	20 - 49 - 817.50	-774.41	-531.53	
20 - 29 - 430.36 - 289.34	-147.83	***	20 - 18 - 593.11	-591.46	-249.87	***	20 - 66 - 892.18	-860.37	-518.95	
20 - 8 - 437.23 - 295.00	-148.00	***	20 - 9 - 551.67	-540.06	-248.44	***	20 - 50 - 801.23	-659.63	-318.01	
20 - 23 - 410.49 - 289.26	-147.25	***	20 - 77 - 534.11	-532.49	-246.37	***	20 - 13 - 799.02	-648.40	-396.76	
20 - 71 - 387.41 - 243.47	-104.23	***	20 - 47 - 523.00	-501.58	-239.76	***	20 - 56 - 846.33	-646.21	-364.60</td	



UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN



Comisiones, Subdirección, Celdas									
8 - 18	681.3	1178.0	1624.8	***	8 - 93	375.8	872.3	1399.2	***
8 - 20	727.9	1224.6	1723.3	***	8 - 31	340.5	887.2	1383.3	***
8 - 52	749.9	1246.6	1743.3	***	8 - 48	415.1	918.1	1408.3	***
8 - 54	762.3	1259.0	1757.3	***	8 - 59	418.4	915.1	1411.8	***
8 - 47	781.4	1271.1	1774.8	***	8 - 3	462.6	939.4	1456.1	***
8 - 94	783.9	1280.2	1776.9	***	8 - 18	491.7	968.4	1485.1	***
8 - 6	821.2	1319.9	1818.6	***	8 - 32	301.6	968.3	1495.8	***
8 - 10	827.9	1324.6	1821.5	***	8 - 20	349.2	1045.9	1542.5	***
8 - 15	852.8	1345.5	1846.2	***	8 - 77	587.8	1084.5	1518.2	***
8 - 21	871.2	1367.8	1864.6	***	8 - 62	589.2	1085.9	1512.5	***
8 - 30	873.1	1388.8	1886.1	***	8 - 63	615.8	1132.5	1529.1	***
8 - 5	873.9	1387.0	1887.4	***	8 - 32	637.7	1154.4	1601.1	***
8 - 9	904.1	1404.8	1901.5	***	8 - 44	670.2	1166.9	1653.0	***
8 - 46	916.0	1412.7	1906.4	***	8 - 47	689.2	1185.9	1682.8	***
8 - 18	953.1	1439.8	1936.3	***	8 - 61	591.4	1188.1	1684.8	***
8 - 38	970.9	1467.6	1984.3	***	8 - 6	711.0	1227.7	1724.4	***
8 - 12	971.6	1464.3	1985.0	***	8 - 10	735.7	1232.3	1729.1	***
8 - 13	1014.7	1311.5	2002.4	***	8 - 15	760.7	1257.4	1754.1	***
8 - 51	1025.6	15512.4	2019.1	***	8 - 27	779.0	1275.7	1772.4	***
8 - 9	1034.2	1350.9	2047.6	***	8 - 30	781.0	1277.7	1774.8	***
8 - 4	1057.9	1554.6	2051.3	***	8 - 5	781.8	1278.5	1775.2	***
8 - 21	1139.7	1556.0	2135.1	***	8 - 94	816.0	1312.7	1829.4	***
8 - 30	1226.6	1723.3	2250.0	***	8 - 49	823.9	1320.6	1817.3	***
8 - 25	1450.6	1347.1	2444.6	***	8 - 18	870.9	1357.0	1854.9	***
■ - 36	1531.1	816.6	3198.7	***	8 - 58	878.8	1375.3	1872.2	***
8 - 36	1043.0	-344.3	-31.6	***	8 - 13	922.6	1419.3	1916.0	***
8 - 54	739.1	-262.1	224.3	***	8 - 87	933.3	1430.2	1926.9	***
8 - 32	378.1	-74.2	417.3	***	8 - 2	960.0	1458.7	1955.5	***
8 - 40	319.7	-43.0	473.2	***	8 - 4	965.8	1462.1	1959.2	***
8 - 8	427.5	56.2	545.9	***	8 - 21	1066.6	1566.3	2051.0	***
8 - 39	456.1	76.7	567.4	***	8 - 30	1114.4	1651.1	2127.8	***
8 - 24	221.5	212.6	212.1	***	8 - 23	1328.4	1855.2	2355.3	***
8 - 43	182.8	313.9	810.6	***	8 - 39	1381.7	1887.0	2390.3	***
8 - 33	117.0	384.9	856.7	***	8 - 56	1111.7	618.8	-122.2	***
8 - 21	80.4	571.1	1073.6	***	8 - 54	-826.8	339.1	153.5	***
8 - 22	84.0	582.7	1079.4	***	8 - 55	-546.7	150.0	346.7	***
8 - 51	173.4	610.1	1166.8	***	8 - 60	-590.3	91.5	401.1	***
8 - 26	272.3	765.6	1285.7	***	8 - 69	-567.4	70.7	426.1	***
8 - 2	291.2	785.9	1292.6	***	8 - 8	-498.2	-1.3	492.2	***
8 - 7	305.1	802.8	1299.3	***	8 - 24	-292.0	204.7	731.4	***
8 - 12	331.0	818.5	1325.3	***	8 - 45	-291.3	243.2	739.9	***
8 - 11	346.9	842.7	1340.4	***	8 - 55	-187.6	114.2	816.1	***
8 - 23	356.7	863.4	1360.1	***	8 - 57	9.7	304.4	1003.2	***
8 - 1	407.7	904.6	1401.1	***	8 - 22	15.4	312.1	1008.8	***
8 - 16	412.8	905.3	1406.2	***	8 - 31	102.8	595.9	1026.2	***
8 - 19	415.8	912.9	1409.3	***	8 - 26	261.6	698.3	1050.0	***
8 - 66	416.2	913.2	1410.0	***	8 - 1	278.3	725.2	1221.9	***
8 - 28	423.4	925.1	1421.8	***	8 - 7	235.5	732.2	1224.0	***
8 - 14	430.2	927.3	1423.9	***	8 - 12	261.2	737.9	1254.6	***
8 - 17	435.0	931.7	1428.4	***	8 - 11	276.3	723.2	1259.7	***
8 - 35	441.1	937.4	1434.3	***	8 - 23	294.0	702.7	1289.4	***
8 - 21	443.0	941.7	1438.4	***	8 - 1	337.1	813.8	1330.9	***
8 - 51	459.7	936.6	1435.1	***	8 - 16	342.2	838.3	1335.6	***
8 - 42	484.3	981.0	1477.3	***	8 - 19	345.2	841.9	1338.6	***
8 - 39	497.0	984.3	1481.6	***	8 - 64	345.8	842.8	1339.3	***
8 - 3	531.8	1028.3	1525.2	***	8 - 29	357.7	854.5	1351.7	***
8 - 44	560.0	1057.5	1554.3	***	8 - 14	359.8	856.3	1353.2	***
8 - 32	370.8	1067.3	1566.2	***	8 - 17	364.1	861.1	1357.1	***
8 - 20	611.3	1115.0	1611.8	***	8 - 2	370.4	867.1	1361.8	***
8 - 77	633.0	1155.3	1630.3	***	8 - 52	374.3	871.0	1367.7	***
8 - 82	651.4	1155.1	1631.8	***	8 - 31	385.0	887.8	1378.4	***
8 - 80	704.9	1201.7	1698.4	***	8 - 48	413.6	910.3	1407.0	***
8 - 12	726.9	1223.6	1720.3	***	8 - 3	461.2	957.9	1494.6	***
8 - 54	730.4	1236.1	1732.8	***	8 - 46	466.3	987.0	1483.7	***
8 - 31	760.6	1252.7	1734.0	***	8 - 32	506.1	998.8	1493.5	***
8 - 6	803.2	1290.5	1739.5	***	8 - 20	547.7	1044.4	1541.1	***
8 - 19	804.9	1301.5	1759.3	***	8 - 77	583.0	1081.0	1579.7	***
8 - 11	820.8	1316.5	1823.2	***	8 - 62	587.7	1084.4	1581.1	***
8 - 27	844.2	1344.9	1841.6	***	8 - 5	667.3	1084.4	1581.7	***
8 - 50	850.1	1346.3	1843.6	***	8 - 63	684.3	1131.0	1627.7	***
8 - 9	851.0	1347.7	1844.4	***	8 - 52	652.2	1152.9	1649.7	***
8 - 24	883.1	1374.8	1878.3	***	8 - 64	668.7	1165.4	1662.1	***
8 - 49	895.3	1389.3	1882.5	***	8 - 47	687.7	1184.6	1681.2	***
8 - 18	943.3	1436.8	1913.5	***	8 - 61	809.9	1185.6	1683.3	***
8 - 58	947.7	1444.5	1914.4	***	8 - 9	725.7	1220.2	1722.9	***
8 - 33	944.5	1445.3	1914.2	***	8 - 40	734.3	1310.1	1727.7	***
8 - 13	961.8	1487.3	1918.3	***	8 - 27	770.5	1274.3	1771.0	***
8 - 25	1002.7	1494.9	1916.6	***	8 - 50	775.5	1276.2	1772.9	***
8 - 9	1031.2	1527.0	2024.6	***	8 - 5	780.3	1277.0	1773.7	***
8 - 4	1034.5	1551.6	2028.3	***	8 - 34	784.1	1311.2	1802.9	***
8 - 21	1136.7	1693.3	2130.2	***	8 - 49	822.4	1319.1	1813.8	***
8 - 30	1205.0	1700.7	2197.6	***	8 - 18	849.4	1346.2	1865.9	***
8 - 25	1427.6	1934.3	2421.6	***	8 - 20	1132.7	1629.7	2124.5	***
8 - 24	290.3	206.2	702.9	***	8 - 23	1173.2	1774.7	2350.4	***
8 - 45	252.0	244.7	741.4	***	8 - 35	278.0	1374.7	1871.4	***
8 - 33	188.1	515.7	817.8	***	8 - 15	721.1	1417.8	1914.5	***
8 - 57	111.2	527.9	1004.6	***	8 - 67	932.0	1428.7	1925.4	***
8 - 22	18.8	515.3	1010.3	***	8 - 9	946.6	1457.3	1934.0	***
8 - 51	104.2	600.4	1047.4	***	8 - 4	964.3	1461.0	1937.7	***
8 - 26	203.1	669.8	1118.3	***	8 - 21	1066.1	1462.8	2029.5	***
8 - 2	215.6	736.7	1233.4	***	8 - 30	1132.7	1629.7	2124.5	***
8 - 7	237.0	711.7	1210.4	***	8 - 20	795.0	1258.1	1894.4	***
8 - 12	262.7	739.8	1236.1	***	8 - 69	712.1	773.4	221.3	***
8 - 11	277.1	774.5	1271.2	***	8 - 4	702.9	206.2	290.5	***
8 - 23	297.3	794.2	1290.9	***	8 - 24	701.4	204.7	292.0	***
8 - 1	338.6	835.3	1330.0	***	8 - 45	745.2	1042.2	1635.3	***
8 - 18	345.7	840.4	1337.1	***	8 - 15	757.3	1051.0	1639.4	***
8 - 19	346.7	843.0	1340.1	***	8 - 26	761.2	1043.6	1639.3	***
8 - 66	347.4	844.1	1340.8	***	8 - 2	763.8	1050.2	1640.2	***
8 - 28	359.2	835.6	1323.6	***	8 - 7	768.5	1052.4	1642.6	***
8 - 14	361.3	838.0	1334.7	***	8 - 12	764.5	1053.2	1643.9	***
8 - 17	365.8	862.5	1359.2	***	8 - 18	761.9	1065.0	1650.0	***
8 - 43	371.9	868.6	1363.3	***	8 - 23	761.9	1068.0	1654.7	***
8 - 53	385.3	1095.8	1685.8	***	8 - 39	1298.3	1093.0	1693.0	***
8 - 46	394.6	1095.7	1685.7	***	8 - 48	1302.0	1094.7	1694.6	***
8 - 26	406.2	1095.6	1685.6	***	8 - 28	1302.9	1095.7	1695.7	***
8 - 19	416.7	1095.5	1685.5	***	8 - 16	1303.6	1096.4	1696.4	***
8 - 65	424.8	1095.4	1685.4	***	8 - 1	132.3	1092.1	1692.1	***
8 - 35	434.2	1095.3	1685.3	***	8 - 10	132.3	1097.7	1697.7	***
8 - 54	445.2	1095.2	1685.2	***	8 - 21	132.3	1098.7	1698.7	***
8 - 24	454.9	1095.1	1685.1	***	8 - 15	132.3	1099.7	1699.7	***
8 - 64	464.6	1095.0	1685.0	***	8 - 26	132.3	1101.2	1701.2	***
8 - 13	474.3	1094.9	1684.9	***	8 - 19	132.3	1102.2	1702.2	***
8 - 53	484.0	1094.8	1684.8	***	8 - 1	132.3	1103.2	1703	

Comprobación Detallada Censo		Comprobación	
51 - 26 - 1117.8	384.1 883.9	22 - 8 - 1010.3	-913.3 -163 ***
51 - 2 - 939.9	411.0 912.9	22 - 29 - 1008.8	-912.1 -154 ***
51 - 7 - 85.9	418.0 915.8	22 - 24 - 804.0	-907.3 169.4
51 - 12 - 38.1	441.7 943.6	22 - 43 - 765.5	-904.8 227.9
51 - 11 - 45.1	458.8 960.6	22 - 33 - 899.7	-97.7 -304.0
51 - 23 - 254.4	479.3 960.4	22 - 37 - 502.3	-3.6 491.1
51 - 4 - 15.7	519.6 1021.4 ***	22 - 31 - 409.3	87.4 584.1
51 - 16 - 22.8	524.7 1035.3 ***	22 - 26 - 310.3	186.3 683.0
51 - 19 - 23.8	527.7 1039.3 ***	22 - 1 - 283.4	215.7 709.9
51 - 66 - 26.5	531.4 1039.2 ***	22 - 7 - 276.0	320.1 716.8
51 - 23 - 28.3	540.3 1042.1 ***	22 - 12 - 220.8	249.3 742.6
51 - 14 - 46.4	542.3 1044.1 ***	22 - 11 - 233.8	260.9 757.1
51 - 17 - 45.0	546.8 1048.7 ***	22 - 23 - 216.0	280.7 777.4
51 - 32 - 31.1	552.9 1054.8 ***	22 - 1 - 173.0	321.7 818.4
51 - 93 - 55.0	556.8 1058.7 ***	22 - 16 - 163.9	326.8 823.5
51 - 31 - 69.7	571.5 1074.3 ***	22 - 19 - 166.9	329.4 828.5
51 - 48 - 94.2	596.1 1098.9 ***	22 - 68 - 166.2	350.3 827.2
51 - 69 - 97.5	599.4 1101.2 ***	22 - 28 - 154.3	362.4 839.1
51 - 3 - 141.8	643.6 1145.3 ***	22 - 14 - 152.3	364.4 841.8
51 - 44 - 170.9	672.7 1174.6 ***	22 - 17 - 147.7	369.0 849.7
51 - 32 - 180.8	682.0 1184.5 ***	22 - 63 - 141.6	355.1 851.8
51 - 20 - 226.3	730.2 1212.0 ***	22 - 93 - 137.7	359.0 855.7
51 - 77 - 266.9	748.6 1270.5 ***	22 - 31 - 123.0	373.7 870.4
51 - 45 - 264.3	770.2 1272.1 ***	22 - 48 - 98.4	388.3 859.0
51 - 47 - 374.9	810.8 1318.0 ***	22 - 38 - 95.2	401.6 898.3
51 - 55 - 336.9	836.7 1340.9 ***	22 - 5 - 90.9	416.8 942.3
51 - 64 - 349.3	851.2 1353.1 ***	22 - 46 - 21.8	478.9 971.6
51 - 47 - 356.4	879.2 1372.1 ***	22 - 32 - 11.8	484.8 981.3
51 - 61 - 370.3	871.4 1374.3 ***	22 - 20 - 33.6	523.3 1020.0 ***
51 - 6 - 416.2	912.0 1413.9 ***	22 - 77 - 71.2	570.9 1067.0 ***
51 - 10 - 414.9	916.8 1418.6 ***	22 - 62 - 73.7	572.4 1099.1 ***
51 - 13 - 435.8	941.7 1443.3 ***	22 - 10 - 122.2	618.3 1113.7 ***
51 - 27 - 458.1	960.0 1461.9 ***	22 - 32 - 144.2	640.9 1136.7 ***
51 - 50 - 460.1	942.0 1463.8 ***	22 - 64 - 156.7	653.4 1130.1 ***
51 - 5 - 461.0	962.8 1464.7 ***	22 - 47 - 173.7	672.4 1169.1 ***
51 - 9 - 495.1	967.0 1498.6 ***	22 - 61 - 177.9	674.6 1178.3 ***
51 - 40 - 503.0	1004.9 1506.7 ***	22 - 6 - 217.3	714.2 1240.1 ***
51 - 18 - 530.1	1051.9 1553.8 ***	22 - 10 - 222.3	718.9 1215.6 ***
51 - 26 - 537.9	1059.8 1561.6 ***	22 - 13 - 247.1	743.8 1240.3 ***
51 - 33 - 538.6	1060.5 1562.3 ***	22 - 27 - 265.3	762.1 1258.5 ***
51 - 13 - 601.8	1103.4 1605.5 ***	22 - 50 - 287.6	786.1 1260.9 ***
51 - 67 - 612.7	1114.5 1615.4 ***	22 - 5 - 268.3	785.0 1261.7 ***
51 - 8 - 646.2	1143.0 1644.9 ***	22 - 36 - 102.4	799.1 1293.8 ***
51 - 4 - 644.9	1146.8 1646.6 ***	22 - 49 - 310.3	807.1 1303.8 ***
51 - 21 - 746.7	1244.6 1730.4 ***	22 - 18 - 357.4	854.1 1350.8 ***
51 - 30 - 813.6	1315.4 1817.3 ***	22 - 50 - 365.3	861.9 1358.6 ***
51 - 25 - 1617.6	1339.9 2041.3 ***	22 - 33 - 389.4	866.6 1369.3 ***
51 - 39 - 1890.2	1393.3 2056.8 ***	22 - 13 - 409.7	909.3 1402.3 ***
51 - 36 - 1622.1	1123.6 2087.6 ***	22 - 67 - 420.0	916.7 1413.4 ***
51 - 34 - 1736.2	839.3 342.8 ***	22 - 9 - 448.3	945.3 1481.3 ***
51 - 35 - 1133.2	655.5 135.9 ***	22 - 4 - 453.7	948.9 1485.6 ***
51 - 69 - 1095.8	600.1 103.4 ***	22 - 21 - 334.0	1050.7 1367.1 ***
51 - 99 - 1073.8	377.1 80.4 ***	22 - 30 - 620.9	1117.6 1614.3 ***
51 - 8 - 1004.6	307.9 11.3 ***	22 - 23 - 846.9	1361.6 1838.3 ***
51 - 29 - 1001.2	306.4 9.7 ***	22 - 39 - 193.2	1426.3 -989.2 ***
51 - 24 - 398.4	301.7 195.0 ***	22 - 26 - 715.1	1518.4 -1218.4 ***
51 - 45 - 750.9	285.2 333.5 ***	22 - 34 - 124.2	931.3 -633.4 ***
51 - 51 - 594.1	192.2 305.6 ***	22 - 11 - 124.6	749.3 -323.5 ***
51 - 22 - 491.1	5.6 502.3 ***	22 - 3 - 118.9	991.3 -194.4 ***
51 - 31 - 403.7	93.0 389.7 ***	22 - 19 - 1106.8	-670.1 -171.4 ***
51 - 36 - 304.8	191.3 688.6 ***	22 - 28 - 1096.2	-369.3 -102.8 ***
51 - 2 - 277.5	218.8 719.5 ***	22 - 24 - 891.4	-394.7 -102.0 ***
51 - 7 - 271.0	225.7 722.4 ***	22 - 1 - 452.9	-392.3 -102.0 ***
51 - 22 - 285.2	221.9 742.0 ***	22 - 31 - 787.1	-283.2 216.6 ***
51 - 14 - 330.0	164.6 263.1 ***	22 - 57 - 589.7	-93.0 403.7 ***
51 - 23 - 210.4	286.1 783.0 ***	22 - 22 - 584.1	-87.4 409.3 ***
51 - 1 - 169.9	327.3 524.0 ***	22 - 26 - 397.8	96.9 395.6 ***
51 - 16 - 164.3	332.6 829.1 ***	22 - 2 - 370.9	125.3 622.3 ***
51 - 19 - 161.3	333.5 832.2 ***	22 - 7 - 364.0	131.7 629.4 ***
51 - 66 - 160.6	336.1 832.9 ***	22 - 12 - 318.2	158.5 633.2 ***
51 - 28 - 144.8	348.0 844.7 ***	22 - 1 - 232.2	173.3 670.3 ***
51 - 14 - 144.6	350.1 846.8 ***	22 - 25 - 301.4	195.3 690.0 ***
51 - 17 - 142.1	354.8 851.5 ***	22 - 1 - 202.4	234.3 731.0 ***
51 - 80 - 135.0	366.7 837.4 ***	22 - 16 - 257.3	259.4 739.1 ***
51 - 92 - 132.1	364.5 861.5 ***	22 - 19 - 254.3	242.4 739.1 ***
51 - 21 - 117.4	379.3 876.0 ***	22 - 66 - 255.6	245.1 739.6 ***
51 - 48 - 92.4	403.9 906.0 ***	22 - 28 - 241.7	259.0 751.7 ***
51 - 38 - 89.5	407.2 903.2 ***	22 - 14 - 239.7	257.1 753.8 ***
51 - 3 - 45.3	451.4 948.1 ***	22 - 17 - 235.1	261.4 758.3 ***
51 - 46 - 16.2	480.3 977.2 ***	22 - 35 - 229.0	267.7 764.4 ***
51 - 32 - 6.3	490.4 987.1 ***	22 - 33 - 223.1	271.7 765.3 ***
51 - 20 - 42.8	537.9 1034.7 ***	22 - 31 - 210.4	280.3 783.0 ***
51 - 71 - 79.8	574.5 1073.2 ***	22 - 48 - 165.8	310.9 807.4 ***
51 - 62 - 81.3	578.0 1074.7 ***	22 - 65 - 182.6	314.2 810.9 ***
51 - 63 - 127.9	624.6 1121.3 ***	22 - 3 - 138.3	338.4 832.1 ***
51 - 52 - 149.8	646.5 1141.2 ***	22 - 43 - 109.2	387.3 854.2 ***
51 - 64 - 162.1	659.0 1155.9 ***	22 - 32 - 99.3	397.4 879.1 ***
51 - 47 - 181.3	676.0 1174.7 ***	22 - 20 - 31.9	446.9 944.0 ***
51 - 61 - 192.5	680.2 1178.9 ***	22 - 77 - 13.2	483.3 980.3 ***
51 - 6 - 223.1	719.8 1181.3 ***	22 - 66 - 11.7	485.0 981.7 ***
51 - 10 - 227.8	724.5 1221.2 ***	22 - 63 - 34.6	531.8 1028.3 ***
51 - 15 - 232.7	749.4 1246.1 ***	22 - 33 - 56.8	553.5 1050.2 ***
51 - 21 - 271.1	767.8 1264.5 ***	22 - 64 - 69.3	566.0 1062.7 ***
51 - 10 - 272.1	769.8 1266.5 ***	22 - 47 - 88.3	585.0 1081.7 ***
51 - 5 - 271.9	770.0 1267.1 ***	22 - 61 - 90.3	587.1 1083.9 ***
51 - 34 - 308.0	804.7 1301.4 ***	22 - 6 - 130.1	626.8 1123.3 ***
51 - 49 - 318.0	812.7 1309.4 ***	22 - 10 - 134.8	631.5 1129.8 ***
51 - 18 - 361.0	859.7 1358.4 ***	22 - 15 - 159.7	656.4 1153.1 ***
51 - 38 - 370.8	867.0 1364.3 ***	22 - 27 - 178.1	676.3 1171.5 ***
51 - 33 - 371.3	868.2 1365.0 ***	22 - 30 - 180.0	676.7 1173.3 ***
51 - 13 - 444.7	911.4 1404.3 ***	22 - 5 - 180.9	672.6 1174.3 ***
51 - 67 - 421.6	922.5 1419.0 ***	22 - 94 - 215.9	711.7 1208.4 ***
51 - 9 - 454.1	930.8 1447.5 ***	22 - 49 - 223.9	719.7 1216.4 ***
51 - 4 - 451.8	934.5 1451.2 ***	22 - 18 - 270.0	765.7 1265.4 ***
51 - 21 - 339.7	1056.4 1555.1 ***	22 - 30 - 277.8	774.9 1271.1 ***
51 - 30 - 638.5	1122.2 1619.9 ***	22 - 33 - 278.5	773.2 1271.9 ***
51 - 25 - 830.3	1347.2 1845.9 ***	22 - 13 - 321.7	818.4 1313.1 ***
51 - 39 - 1895.8	1599.1 1924.4 ***	22 - 67 - 324.6	829.3 1328.0 ***
51 - 36 - 1627.7	1131.0 1654.3 ***	22 - 9 - 361.1	837.8 1354.3 ***
51 - 34 - 1341.9	843.1 164.6 ***	22 - 6 - 364.8	861.3 1358.2 ***
51 - 35 - 1158.0	862.1 103.4 ***	22 - 21 - 466.6	963.3 1400.1 ***
51 - 29 - 1102.4	863.7 107.0 ***	22 - 30 - 335.3	1030.2 1262.9 ***
51 - 33 - 1075.4	862.7 108.0 ***	22 - 23 - 737.3	1250.1 1730.9 ***

UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN
BIBLIOTECA GENERAL

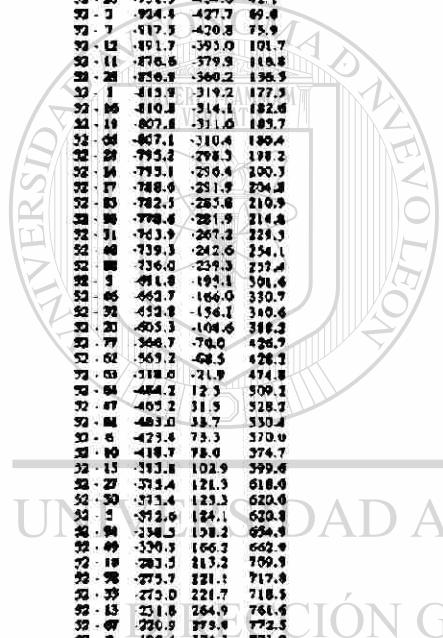
Comercio, Standard & Poor's										Comercio										Comercio										
1 - 47	204.4	763.3	1390.2	***	13 - 5	12.4	519.1	1015.8	***	13 - 51	-162.4	593.9	890.6							23 - 51	-63.2	433.3	930.2							
2 - 7	233.3	732.0	1226.6	***	13 - 6	34.3	553.3	1090.0	***	23 - 6	-38.1	438.3	933.0							23 - 10	-33.9	483.1	939.9							
2 - 4	239.0	735.8	1232.5	***	13 - 7	111.5	608.2	1104.5	***	23 - 13	-33.9	483.1	939.9							23 - 17	-13.2	481.3	978.1							
3 - 21	344.9	437.6	1334.3	***	13 - 8	119.4	615.1	1112.8	***	23 - 20	-13.2	483.3	980.1							23 - 1	-12.4	484.3	981.0							
2 - 30	407.7	904.4	1401.1	***	13 - 9	130.1	618.8	1113.1	***	23 - 24	21.8	318.5	1019.2	***							23 - 27	-13.2	481.3	978.1						
2 - 25	631.7	1128.4	1625.3	***	13 - 10	163.2	639.9	1156.6	***	23 - 29	21.8	318.5	1019.2	***							23 - 32	-13.2	483.3	980.1						
7 - 29	-2115.9	-1619.2	-1132.5	***	13 - 11	67.1	670.8	1167.3	***	23 - 34	29.7	326.4	1023.1	***							23 - 36	29.7	326.4	1023.1						
7 - 26	-1847.2	-1551.1	-854.4	***	13 - 12	202.6	699.3	1196.0	***	23 - 18	76.7	373.4	1070.1	***							23 - 39	81.3	382.4	1078.1						
7 - 34	-1562.1	-1065.3	-968.6	***	13 - 13	206.3	703.0	1199.3	***	23 - 21	308.2	304.9	1501.6	***							23 - 42	84.6	381.3	1078.1						
7 - 35	-1378.9	-882.3	-385.3	***	13 - 14	375.0	471.7	1368.4	***	23 - 23	399.0	1093.7	1392.5	***							23 - 45	129.4	529.1	1121.8						
7 - 60	-1322.5	825.3	329.1	***	13 - 15	399.0	1093.7	1392.5	***	23 - 39	-2156.7	-1660.0	-1146.3	***							23 - 48	139.3	536.4	1133.7						
1 - 69	-1229.3	802.4	306.1	***	13 - 16	406.0	1093.7	1392.5	***	23 - 40	-1898.7	-1391.9	-957.3	***							23 - 5	167.6	664.3	1181.3						
7 - 8	-1330.4	793.7	237.0	***	13 - 17	406.0	1093.7	1392.5	***	23 - 43	1419.7	923.0	424.3	***							23 - 6	171.3	568.3	1161.0						
7 - 29	-1228.9	732.1	237.3	***	13 - 18	406.0	1093.7	1392.5	***	23 - 45	1340.4	-843.7	-346.9	***							23 - 21	773.4	770.1	1246.8						
7 - 24	-1024.2	927.3	303.4	***	13 - 19	406.0	1093.7	1392.5	***	23 - 30	375.0	471.7	1368.4	***							23 - 30	140.2	346.9	1333.6						
7 - 43	-965.7	-689.0	7.0	***	13 - 20	406.0	1093.7	1392.5	***	23 - 32	371.2	714.5	1777.8	***							23 - 28	564.2	1061.0	1527.7						
7 - 53	-915.8	-618.0	43.9	***	13 - 21	406.0	1093.7	1392.5	***	23 - 29	-1209.7	-773.0	-276.3	***							23 - 39	-217.6	-1726.8	-1224.1						
7 - 57	-722.4	-225.7	211.0	***	13 - 22	406.0	1093.7	1392.5	***	23 - 24	-1061.0	-568.3	-71.6	***							23 - 36	-1949.4	-1431.7	-930.0	***					
7 - 22	-716.8	-220.1	276.6	***	13 - 23	406.0	1093.7	1392.5	***	23 - 26	-947.4	-428.0	-42.9	***							23 - 4	-1663.6	-1166.9	-670.2	***					
7 - 51	-629.4	-192.9	364.0	***	13 - 24	406.0	1093.7	1392.5	***	23 - 27	-853.3	-266.0	230.1	***							23 - 5	-1480.3	-983.4	-487.1	***					
7 - 26	-530.6	33.9	441.8	***	13 - 25	406.0	1093.7	1392.5	***	23 - 29	-757.7	-269.9	233.8	***							23 - 6	-1424.1	-927.4	-430.7	***					
7 - 3	503.7	7.0	489.7	***	13 - 26	406.0	1093.7	1392.5	***	23 - 30	-711.2	-714.5	1777.8	***							23 - 7	-1401.1	-904.4	-407.7	***					
7 - 13	-671.0	21.7	222.9	***	13 - 27	406.0	1093.7	1392.5	***	23 - 31	-716.3	-171.3	323.2	***							23 - 8	-1332.0	-833.3	-318.6	***					
7 - 11	-433.9	46.8	517.3	***	13 - 28	406.0	1093.7	1392.5	***	23 - 32	-717.7	-269.9	233.8	***							23 - 9	-1320.5	-833.3	-317.1	***					
7 - 23	-430.2	60.3	557.2	***	13 - 29	406.0	1093.7	1392.5	***	23 - 33	-717.4	-714.5	1777.8	***							23 - 10	-1123.9	-629.1	-133.3	***					
7 - 1	-393.1	101.6	599.3	***	13 - 30	406.0	1093.7	1392.5	***	23 - 34	-717.4	-714.5	1777.8	***							23 - 11	-1047.3	-590.5	-93.8	***					
7 - 16	-380.0	106.7	603.4	***	13 - 31	406.0	1093.7	1392.5	***	23 - 35	-717.4	-714.5	1777.8	***							23 - 12	-818.4	-321.7	175.0	***					
7 - 14	-387.0	109.7	608.6	***	13 - 32	406.0	1093.7	1392.5	***	23 - 36	-717.4	-714.5	1777.8	***							23 - 13	-731.0	-234.3	262.4	***					
7 - 65	-388.3	110.6	607.1	***	13 - 33	406.0	1093.7	1392.5	***	23 - 37	-717.4	-714.5	1777.8	***							23 - 14	-805.3	-108.6	788.2	***					
7 - 28	-374.5	122.2	613.9	***	13 - 34	406.0	1093.7	1392.5	***	23 - 38	-717.4	-714.5	1777.8	***							23 - 15	-598.3	-101.6	595.1	***					
7 - 16	-372.4	124.3	621.0	***	13 - 35	406.0	1093.7	1392.5	***	23 - 39	-717.4	-714.5	1777.8	***							23 - 16	-474.0	-22.7	519.4	***					
7 - 17	-367.3	126.9	615.6	***	13 - 36	406.0	1093.7	1392.5	***	23 - 40	-717.4	-714.5	1777.8	***							23 - 17	-469.4	-27.3	524.0	***					
7 - 23	-241.9	254.8	751.1	***	13 - 37	406.0	1093.7	1392.5	***	23 - 41	-602.6	94.1	390.2	***							23 - 18	-453.4	33.4	130.1	***					
7 - 32	-232.0	164.7	761.4	***	13 - 38	406.0	1093.7	1392.5	***	23 - 42	-596.7	93.0	396.7	***							23 - 19	-459.5	37.3	334.0	***					
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7 - 77	-143.9	350.8	847.3	***	13 - 40	406.0	1093.7	1392.5	***	23 - 44	-559.4	137.3	614.0	***							23 - 21	-465.3	-108.6	788.2	***					
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7 - 63	-87.9	388.8	871.5	***	13 - 42	406.0	1093.7	1392.5	***	23 - 46	-511.4	184.9	611.6	***							23 - 23	-512.6	-73.6	595.1	***					
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7 - 33	-143.8	642.5	1139.2	***	13 - 45	406.0	1093.7	1392.5	***	23 - 49	-492.9	979.0	979.6	***							23 - 26	-193.3	397.2	793.9	***					
7 - 34	-1587.3	-1081.0	-294.3	***	13 - 50	406.0	1093.7	1392.5	***	23 - 50	-492.9	979.0	979.6	***							23 - 27	-177.3	-346.2	403.3	***					
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16 - 79	-331.6	284.1	740.8	65	-51	-433.6
16 - 82	-251.2	243.3	742.3	66	-49	-429.6
16 - 83	-204.8	292.1	738.3	67	-38	-255.7
16 - 84	-182.6	314.1	810.8	68	-3	-584.1
16 - 85	-170.2	320.3	823.3	69	-40	-532.3
16 - 87	-151.1	343.6	842.3	70	-32	-542.5
16 - 89	-145.0	347.7	844.3	71	-30	-294.9
16 - 9	-105.3	387.4	864.1	72	-77	-358.3
16 - 10	-104.5	392.1	868.8	73	-62	-254.9
16 - 11	-79.7	417.0	913.7	74	-65	-208.3
16 - 27	-61.3	435.4	912.1	75	-32	-186.4
16 - 30	-59.4	437.3	934.9	76	-9	-173.9
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16 - 36	38.4	535.1	1011.8	81	-73	-85.4
16 - 33	39.1	535.8	1013.3	82	-58	-61.8
16 - 19	81.2	579.0	1073.7	83	-50	-63.1
16 - 67	93.1	589.9	1086.6	84	-5	-92.3
16 - 9	121.7	618.4	1113.1	85	-94	-281.1
16 - 4	123.4	622.1	1118.8	86	-45	-202.3
16 - 21	227.2	723.9	1220.5	87	-18	-26.9
16 - 30	294.1	790.8	1287.3	88	-58	-34.7
16 - 23	316.1	1014.3	1111.3	89	-33	-33.4
16 - 39	2225.6	1783.3	1832.1	90	-19	-78.3
16 - 36	1927.5	1465.8	964.4	91	-67	-69.4
16 - 34	1471.7	1175.0	991.3	92	-9	-118.0
16 - 33	-1484.6	991.0	-993.2	93	-4	-121.7
16 - 60	-1412.2	935.5	-1383.4	94	-21	-227.5
16 - 69	-1409.3	912.5	-1153.8	95	-36	-290.4
16 - 8	-1340.1	941.9	-1345.7	96	-29	-914.4
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16 - 34	-1133.9	917.2	-1405.5	98	-56	-1970.1
16 - 43	-1093.4	987.7	-1020.9	99	-54	-1684.1
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16 - 22	-824.3	329.3	166.9	102	-60	-1421.6
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16 - 2	-614.1	-117.4	-379.3	165	-24	-1144.3
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16 - 28	-484.9	11.8	-508.3	173	-12	-593.3
16 - 14	-482.8	13.9	-510.6	174	-11	-580.3
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16 - 83	-472.2	24.5	-521.2	176	-1	-519.4
16 - 95	-463.3	28.4	-525.1	177	-16	-174.3
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16 - 12	-414.1	347.7	-386.3	180	-49	-1352.6
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16 - 39	-321.4	243.1	-386.3	188	-47	-1352.6
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16 - 12	-281.4	-34.7	-412.0	191	-57	-1044.1
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16 - 14	-182.8	13.9	-510.6	198	-11	-580.3
16 - 17	-178.2	13.5	-513.2	199	-23	-569.5
16 - 83	-172.2	24.5	-521.2	200	-1	-519.4
16 - 95	-163.3	28.4	-525.1	201	-16	-174.3
16 - 51	-141.6	347.7	-379.3	202	-77	-1352.6
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16 - 16	-13.8	-344.2	-446.6	214	-9	-1352.6
16 - 29	-9.3	-344.2	-446.6	215	-1	-1352.6
16 - 24	-7.8	-344.2	-446.6	216	-16	-1352.6
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16 - 29	-0.6	-344.2	-446.6	227	-31	-

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Comisiones bibliográficas		Comisiones	
53 - 7	-551.7	-154.9	346.8
53 - 12	-605.9	-109.2	387.3
53 - 13	-390.8	-94.1	402.6
53 - 23	-771.1	-74.4	422.3
53 - 1	-530.1	-33.4	463.4
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53 - 57	-861.3	-364.6	-132.1
53 - 23	-575.0	-78.1	-113.4
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
53 - 2	-642.5	-145.8	-350.9
53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
53 - 2	-642.5	-145.8	-350.9
53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
53 - 2	-642.5	-145.8	-350.9
53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
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53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
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53 - 16	-528.9	-32.1	-464.6
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53 - 7	-435.6	-138.8	-357.9
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53 - 11	-564.7	-67.0	-398.7
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53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
53 - 2	-642.5	-145.8	-350.9
53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
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53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 7	-435.6	-138.8	-357.9
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53 - 19	-523.8	-31.1	-467.6
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53 - 28	-513.3	-16.0	-480.1
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53 - 51	-761.3	-271.6	-221.1
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53 - 11	-604.8	-113.1	-383.6
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53 - 23	-379.0	-359.0	-127.7
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53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
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53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
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53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3
53 - 16	-528.9	-32.1	-464.6
53 - 19	-523.8	-31.1	-467.6
53 - 05	-523.1	-28.4	-485.3
53 - 28	-513.3	-16.0	-480.1
53 - 12	-604.8	-11.3	-483.6
53 - 11	-564.7	-0.0	-498.7
53 - 23	-379.0	-359.0	-127.7
53 - 51	-761.3	-271.6	-221.1
53 - 26	-669.4	-172.7	-324.0
53 - 2	-642.5	-145.8	-350.9
53 - 7	-435.6	-138.8	-357.9
53 - 11	-604.8	-113.1	-383.6
53 - 11	-564.7	-67.0	-398.7
53 - 23	-379.0	-359.0	-127.7
53 - 1	-354.0	-37.3	-435.3

Comprobación de la Cuenta		Comprobación	
3 - 21	103.2	604.9	1101.6 ***
3 - 30	133.1	671.8	1168.3 ***
3 - 23	399.1	855.8	1392.3 ***
46 - 39	-2370.7	-1874.0	-1377.3 ***
46 - 36	-2102.6	-1603.9	-1109.2 ***
46 - 54	-1816.7	-1320.0	-873.3 ***
46 - 59	-1613.7	-1137.0	-649.3 ***
46 - 60	-1577.3	-1060.4	-563.9 ***
46 - 67	-1534.3	-1057.4	-560.9 ***
46 - 8	-1485.1	-984.4	-491.7 ***
46 - 29	-1483.7	-987.0	-490.3 ***
46 - 34	-1273.9	-782.2	-385.3 ***
46 - 45	-1240.4	-743.7	-349.0 ***
46 - 53	-1174.0	-672.7	-370.9 ***
46 - 57	-977.2	-480.3	-16.2
46 - 22	-971.8	-474.9	21.8
40 - 31	-884.2	-367.3	109.2
46 - 26	-783.3	-288.6	208.1
46 - 2	-758.2	-280.7	233.0
46 - 7	-591.5	-256.8	241.0
46 - 12	-723.7	-229.0	261.7
46 - 11	-710.7	-214.0	282.8
46 - 23	-690.9	-194.2	302.5
46 - 1	-642.9	-159.2	343.3
46 - 10	-641.0	-148.1	348.6
46 - 19	-641.0	-145.1	351.6
46 - 26	-641.1	-141.4	352.3
46 - 29	-621.3	-138.5	344.2
46 - 14	-627.3	-130.4	366.3
46 - 75	-622.6	-135.9	370.8
46 - 83	-616.5	-119.4	376.9
46 - 93	-612.6	-115.9	380.8
46 - 70	-597.9	-101.1	395.5
46 - 46	-373.3	-76.6	420.1
46 - 38	-370.1	-73.3	423.6
46 - 5	-325.8	-71.1	467.6
46 - 32	-486.0	9.9	506.6
46 - 20	-439.3	57.4	534.1
46 - 77	-400.7	98.0	592.7
46 - 12	-399.2	97.1	594.2
46 - 62	-352.3	140.6	640.8
46 - 21	-310.7	166.0	662.7
46 - 64	-318.2	178.3	675.2
46 - 47	-297.1	197.1	694.2
46 - 61	-297.0	193.7	694.6
46 - 6	-237.4	239.3	736.0
46 - 30	-227.1	244.0	740.7
46 - 15	-227.1	268.9	765.6
46 - 27	-209.4	267.3	784.0
46 - 50	-207.2	269.2	786.0
46 - 1	-208.6	290.1	786.8
46 - 58	-172.3	324.2	820.9
46 - 49	-164.0	332.1	828.9
46 - 18	-117.5	379.3	873.8
46 - 36	-105.7	347.0	882.7
46 - 33	-105.0	347.7	884.4
46 - 13	-63.8	420.1	921.6
46 - 48	-34.9	441.3	934.3
46 - 9	-26.4	470.1	967.0
46 - 4	-22.7	474.0	970.7
46 - 21	-79.1	375.3	1012.6 ***
46 - 30	-145.0	467.2	1139.4 ***
46 - 29	-370.0	564.1	1363.4 ***
31 - 31	-2190.0	-1878.9	-1387.2 ***
32 - 56	-2112.3	-1615.8	-1119.1 ***
32 - 34	-1826.0	-1329.9	-853.2 ***
32 - 15	-1043.0	-1146.5	-850.2 ***
32 - 10	-1587.2	-1090.3	-593.7 ***
32 - 09	-1364.2	-1057.5	-570.8 ***
32 - 8	-1493.0	-998.3	-501.6 ***
32 - 20	-1493.3	-976.8	-500.1 ***
32 - 24	-1288.8	-792.1	-293.9 ***
32 - 45	-1250.3	-733.6	-255.9 ***
32 - 53	-1184.3	-582.6	-180.8 ***
32 - 37	-987.4	-490.4	6.3
32 - 28	-981.3	-384.2	11.9
32 - 31	-994.1	-397.4	99.3
32 - 20	-795.2	-293.8	198.2
32 - 2	-764.3	-271.6	225.1
32 - 7	-761.4	-264.7	232.0
32 - 12	-733.6	-238.9	257.8
32 - 11	-720.5	-223.8	272.9
32 - 25	-700.4	-204.1	292.6
32 - 1	-639.1	-163.1	333.6
32 - 16	-434.7	-138.0	338.7
32 - 19	-631.7	-134.8	341.8
32 - 60	-631.3	-134.3	342.5
32 - 28	-439.4	-142.4	354.3
32 - 16	-637.0	-140.3	356.4
32 - 17	-632.5	-135.6	360.9
32 - 43	-626.4	-129.7	361.0
32 - 93	-622.5	-125.8	370.9
32 - 31	-607.3	-111.1	385.6
32 - 48	-383.2	-85.5	410.2
32 - 88	-379.6	-83.2	413.3
32 - 64	-313.7	-39.0	437.7
32 - 40	-304.6	-8.9	436.8
32 - 20	-449.2	-47.6	344.3
32 - 77	-410.6	-86.1	382.9
32 - 65	-405.7	-87.6	384.3
32 - 43	-362.5	-334.2	630.9
32 - 52	-349.6	-186.1	632.8
32 - 61	-328.1	-165.6	645.3
32 - 47	-309.1	-117.6	684.3
32 - 61	-306.9	-109.8	686.3
32 - 6	-267.3	-235.3	706.1
32 - 10	-262.4	-234.1	730.8
32 - 15	-337.7	-239.0	753.6
32 - 27	-219.3	277.4	774.1
32 - 50	-217.3	279.3	776.1
32 - 3	-215.3	280.2	776.9
32 - 94	-193.4	314.3	811.1
32 - 49	-174.4	322.3	819.8
32 - 18	-127.4	369.3	866.0
32 - 39	-219.6	372.7	873.9
32 - 33	-118.9	337.8	874.6
32 - 13	-73.7	421.0	917.7
32 - 67	-104.3	413.9	928.0
32 - 8	-38.0	409.4	937.1
32 - 4	-31.6	404.1	940.8
32 - 21	-99.3	260.9	1002.3 ***
32 - 38	-160.1	363.8	1053.3 ***
32 - 15	-242.6	-193.1	1434.7 ***
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32 - 34	-1874.2	-1377.3	-880.3 ***
32 - 38	-159.4	-194.4	-697.7 ***
32 - 98	-1834.7	-1138.0	-641.3 ***
32 - 68	-151.8	-1115.0	-618.3 ***
32 - 8	-154.2	-104.9	549.3 ***
32 - 29	-154.1	-104.4	547.7 ***
32 - 34	-1356.4	-839.7	-343.0 ***
32 - 45	-1297.9	-801.2	-304.5 ***
32 - 63	-1322.5	-790.2	-227.8 ***
32 - 57	-1034.7	-531.9	-412.2 ***
32 - 23	-1029.0	-532.3	-33.0 ***
32 - 51	-981.6	-444.9	51.8
32 - 25	-842.8	-346.1	150.6
32 - 2	-813.9	-319.2	177.3
32 - 7	-806.9	-312.2	184.3
32 - 12	-783.2	-286.5	219.2
32 - 11	-768.1	-271.4	213.3
32 - 23	-748.4	-231.7	243.0
32 - 1	-707.3	-210.6	266.1
32 - 16	-702.2	-205.1	291.2
32 - 19	-699.2	-202.5	294.2
32 - 26	-698.3	-201.8	294.9
32 - 20	-695.7	-190.0	306.7
32 - 16	-684.6	-187.9	308.8
32 - 17	-680.0	-183.3	313.4
32 - 35	-674.0	-177.3	319.4
32 - 15	-670.1	-173.6	323.3
32 - 31	-655.4	-158.7	338.1
32 - 44	-650.8	-134.1	342.0
32 - 58	-627.3	-130.9	349.9
32 - 3	-583.2	-93.6	410.2
32 - 46	-554.1	-57.4	419.3
32 - 32	-544.3	-47.6	449.2
32 - 77	-499.1	-33.6	533.0
32 - 62	-496.7	-49.0	536.7
32 - 6	-410.1	-84.6	583.3
32 - 12	-388.2	-108.6	605.3
32 - 61	-305.7	-121.0	617.2
32 - 47	-356.7	-149.1	616.8
32 - 61	-354.3	-142.2	617.8
32 - 6	-314.9	-181.9	618.6
32 - 10	-310.1	-186.6	618.3
32 - 15	-287.2	-211.5	608.2
32 - 27	-266.8	-229.8	736.6
32 - 36	-264.9	-231.8	721.5
32 - 3	-264.1	-232.6	729.4
32 - 24	-229.9	-206.8	703.3
32 - 49	-222.0	-214.7	711.4
32 - 13	-174.9	-321.8	818.5
32 - 36	-167.1	-329.6	826.3
32 - 31	-166.4	-310.3	827.0
32 - 13	-123.3	-313.4	870.2
32 - 9	-122.4	-314.3	881.1
32 - 9	-83.8	-412.9	909.6
32 - 4	-80.1	-416.6	913.3
32 - 24	-229.9	-206.8	1023.0
32 - 21	-174.7	-214.7	1023.7
32 - 36	-207.1	-283.6	1046.3
32 - 35	-206.4	-293.3	1077.0
32 - 13	-161.3	-333.4	1150.1
32 - 47	-132.4	-344.3	1161.0
32 - 6	-139.1	-372.8	1169.3
32 - 6	-134.9	-141.8	1188.9
32 - 10	-1350.2	-140.5	1243.3
32 - 17	-521.3	-171.3	1268.2
32 - 21	-306.4	-189.8	1269.9
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32 - 5	-304.1	-152.6	1289.3
32 - 36	-219.0	-226.8	1293.3
32 - 49	-251.0	-234.7	1291.6
32 - 18	-215.0	-281.7	1298.4
32 - 36	-207.1	-283.6	1306.3
32 - 35	-206.4	-293.3	1317.0
32 - 13	-172.1	-324.6	1327.0
32 - 36	-169.8	-1201.7	1304.3
32 - 8	-152.9	-1132.3	1303.8
32 - 29	-102.7	-1131.0	1344.3
32 - 24	-143.0	-929.1	1429.4
32 - 43	-1384.3	-887.8	1481.1
32 - 23	-131.8	-816.8	1514.1
32 - 37	-1121.3	-624.6	1527.1
32 - 28	-1115.7	-618.9	1527.2
32 - 31	-1028.3	-531.3	1543.8
32 - 36	-929.4	-432.7	164.0
32 - 2	-921.9	-405.8	90.9
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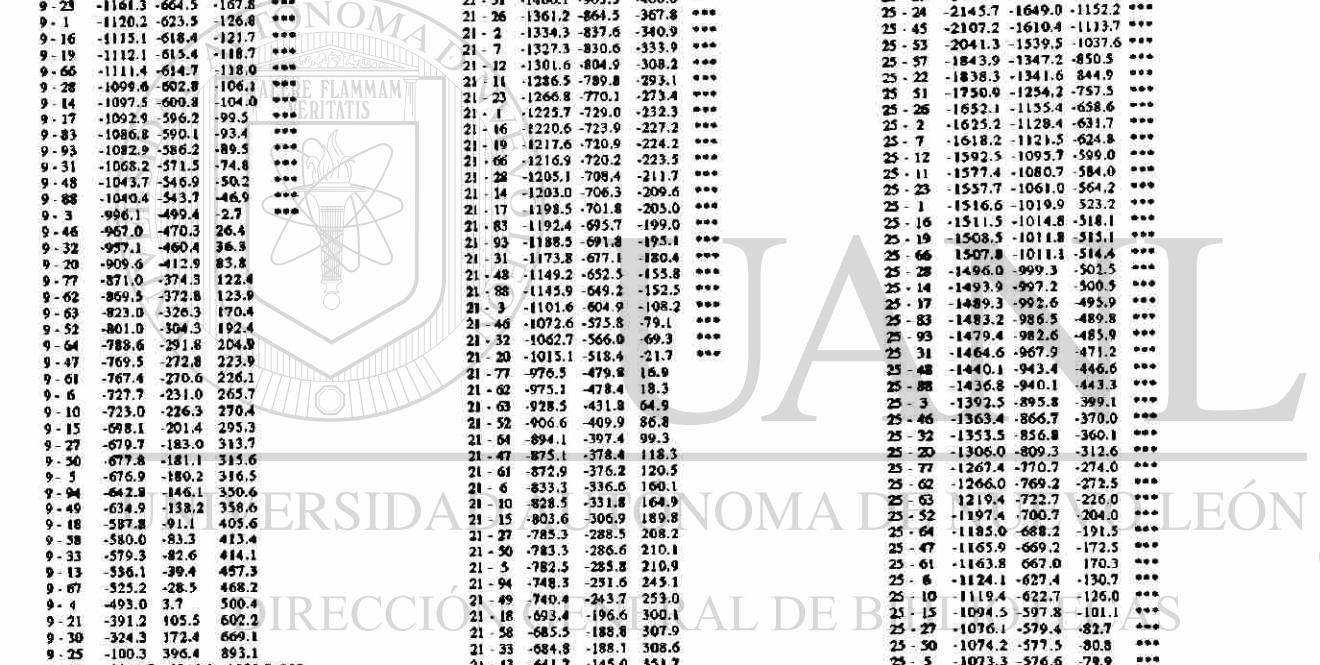


UNIVERSIDAD AUTÓNOMA DE NAYARIT
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10 - 17 - 499.1	-398.4	101.9	27 - 53 - 903.1	-409.1	47.6	***	5 - 12 - 1039.4	-538.2	-41.5
10 - 83 - 485.3	-388.8	108.0	27 - 1 - 934.6	-432.3	59.4	***	5 - 23 - 1011.2	-518.5	-21.8
10 - 93 - 486.1	-384.4	111.9	27 - 19 - 931.0	-434.3	62.4	***	5 - 1 - 974.1	-477.4	19.3
10 - 31 - 566.9	-370.1	126.5	27 - 66 - 930.7	-437.8	63.7	***	5 - 16 - 969.0	-473.3	24.4
10 - 48 - 442.5	-34.8	151.1	27 - 28 - 918.5	-421.8	74.9	***	5 - 19 - 966.0	-441.3	27.4
10 - 66 - 383.9	-342.3	154.4	27 - 14 - 946.4	-419.7	77.0	***	5 - 26 - 953.3	-458.8	15.9
10 - 3 - 374.2	-293.0	198.7	27 - 17 - 911.9	-415.2	81.4	***	5 - 14 - 951.4	-454.7	42.0
10 - 46 - 783.8	-268.9	227.0	27 - 46 - 780.5	-282.9	207.5	***	5 - 17 - 948.4	-459.4	46.6
10 - 32 - 733.8	-239.0	257.7	27 - 37 - 776.1	-279.4	217.3	***	5 - 63 - 940.8	-444.1	51.7
10 - 20 - 708.2	-211.8	285.2	27 - 39 - 739.8	-291.8	264.9	***	5 - 53 - 936.9	-440.2	56.6
10 - 73 - 466.6	-172.8	323.8	27 - 77 - 685.9	-193.2	301.3	***	5 - 31 - 921.2	-415.4	71.3
10 - 62 - 446.2	-171.5	323.3	27 - 62 - 685.5	-191.4	304.8	***	5 - 48 - 997.6	-400.9	93.8
10 - 10 - 521.6	-24.9	471.8	27 - 63 - 641.9	-145.2	151.3	***	5 - 68 - 994.3	-397.6	49.1
10 - 25 - 478.3	-18.6	515.1	27 - 22 - 620.0	-123.3	373.4	***	5 - 3 - 950.0	-353.3	143.4
10 - 30 - 496.4	-30.3	517.0	27 - 64 - 607.5	-110.2	383.9	***	5 - 46 - 910.9	-354.9	172.3
10 - 5 - 475.6	-21.2	517.9	27 - 47 - 598.3	-91.8	404.9	***	5 - 22 - 811.1	-314.3	182.4
10 - 9 - 441.4	-33.3	537.0	27 - 51 - 588.3	-89.6	401.1	***	5 - 20 - 761.9	-266.6	229.7
10 - 49 - 433.5	-62.2	539.9	27 - 18 - 404.8	-90.0	598.7	***	5 - 77 - 724.9	-221.2	264.5
10 - 18 - 396.4	-120.3	407.0	27 - 10 - 541.9	-45.2	451.5	***	5 - 62 - 731.3	-225.6	270.0
10 - 58 - 378.6	-114.8	414.8	27 - 13 - 503.2	-30.5	474.4	***	5 - 32 - 634.9	-133.2	316.5
10 - 33 - 377.9	-118.8	415.3	27 - 39 - 498.7	-1.9	496.4	***	5 - 44 - 942.5	-143.8	350.9
10 - 13 - 314.8	-162.0	452.7	27 - 5 - 495.9	-6.8	497.3	***	5 - 47 - 923.4	-120.3	370.0
10 - 65 - 321.9	-172.8	466.6	27 - 34 - 461.7	-35.0	331.7	***	5 - 61 - 921.3	-124.6	372.1
10 - 9 - 295.3	-201.4	499.1	27 - 49 - 433.8	-42.9	339.6	***	5 - 6 - 981.6	-84.9	411.8
10 - 4 - 291.0	-201.1	701.8	27 - 13 - 404.8	-90.0	598.7	***	5 - 10 - 376.5	-80.2	410.3
10 - 21 - 199.8	-206.9	803.6	27 - 38 - 391.9	-97.8	394.5	***	5 - 19 - 355.0	-95.3	441.4
10 - 38 -									

Comisiones, Relaciones, Cofres									
49 - 59 - 2702.9 - 2306.1 - 1709.4	***	10 - 13 - 445.0 - 31.7 - 548.4		33 - 50 - 393.2 - 98.5 - 398.1					
49 - 56 - 2434.8 - 1936.1 - 1441.4	***	10 - 17 - 434.1 - 62.6 - 539.3		33 - 3 - 394.4 - 97.7 - 399.1					
49 - 54 - 2148.9 - 1632.2 - 1135.5	***	10 - 9 - 403.4 - 91.1 - 397.8		33 - 34 - 390.2 - 63.5 - 433.1					
49 - 35 - 1965.9 - 1469.1 - 972.4	***	10 - 14 - 401.9 - 94.8 - 391.3		33 - 2 - 392.3 - 55.5 - 441.1					
49 - 63 - 1909.4 - 1412.7 - 918.0	***	10 - 21 - 300.1 - 196.6 - 393.4		33 - 18 - 300.2 - 8.3 - 488.2					
49 - 69 - 1886.3 - 1397.8 - 893.1	***	10 - 30 - 333.1 - 242.3 - 760.2		33 - 16 - 401.4 - 6.7 - 496.0					
49 - 4 - 1817.3 - 1320.6 - 823.9	***	10 - 25 - 5.2 - 487.3 - 934.2		33 - 13 - 453.6 - 43.1 - 339.9					
49 - 39 - 1813.8 - 1319.1 - 822.4	***	10 - 29 - 2151.7 - 2241.0 - 1744.3	***	33 - 67 - 442.7 - 54.9 - 330.8					
49 - 24 - 1611.1 - 1114.4 - 617.7	***	10 - 30 - 348.9 - 1992.9 - 1496.2	***	33 - 9 - 414.1 - 82.6 - 379.3					
49 - 43 - 1372.6 - 1073.9 - 379.2	***	10 - 26 - 2201.5 - 1707.1 - 1210.4	***	33 - 4 - 410.4 - 66.3 - 383.0					
49 - 53 - 1306.7 - 1004.9 - 503.8	***	10 - 30 - 2020.7 - 1324.0 - 1027.3	***	33 - 21 - 308.6 - 186.1 - 684.8					
49 - 57 - 1304.4 - 812.7 - 316.0	***	10 - 60 - 1984.3 - 1467.6 - 970.9	***	33 - 30 - 241.7 - 259.0 - 751.7					
49 - 22 - 1301.8 - 807.1 - 310.3	***	10 - 10 - 1941.4 - 1444.6 - 947.9	***	33 - 23 - 17.7 - 479.0 - 973.7					
49 - 51 - 1216.4 - 719.7 - 222.9	***	10 - 4 - 1672.1 - 1373.3 - 878.8	***	10 - 39 - 2801.5 - 2304.9 - 1808.2	***				
49 - 38 - 1117.9 - 903.0 - 124.1	***	10 - 20 - 1870.7 - 1374.0 - 677.3	***	10 - 36 - 2333.5 - 2016.8 - 1540.1	***				
49 - 2 - 1090.6 - 593.1 - 97.2	***	10 - 24 - 1606.0 - 1165.3 - 972.6	***	10 - 34 - 2247.6 - 1750.9 - 1254.3	***				
49 - 1 - 1083.6 - 586.8 - 96.3	***	10 - 15 - 1627.5 - 1139.8 - 634.1	***	10 - 33 - 2064.6 - 1567.9 - 1071.2	***				
49 - 12 - 1057.9 - 561.2 - 54.5	***	10 - 23 - 1361.6 - 1055.8 - 357.9	***	10 - 20 - 2002.2 - 1511.5 - 1014.2	***				
49 - 11 - 1041.8 - 545.1 - 49.4	***	10 - 37 - 1364.3 - 867.6 - 370.8	***	10 - 19 - 1983.2 - 1488.3 - 991.3	***				
49 - 29 - 1023.1 - 516.4 - 29.7	***	10 - 21 - 1338.6 - 841.9 - 345.2	***	10 - 8 - 1916.0 - 1419.3 - 922.6	***				
49 - 1 - 982.0 - 483.1 - 11.4	***	10 - 31 - 1271.2 - 774.5 - 277.8	***	10 - 28 - 1914.5 - 1417.8 - 921.1	***				
49 - 16 - 976.9 - 450.5 - 16.3	***	10 - 36 - 1172.4 - 675.7 - 179.0	***	10 - 25 - 1707.5 - 1213.1 - 715.4	***				
49 - 19 - 973.9 - 477.2 - 19.5	***	10 - 2 - 1145.5 - 648.6 - 152.1	***	10 - 43 - 1671.3 - 1174.0 - 877.9	***				
49 - 66 - 973.2 - 476.5 - 20.2	***	10 - 7 - 1138.5 - 641.8 - 145.1	***	10 - 33 - 1693.3 - 1103.0 - 601.8	***				
49 - 38 - 96.4 - 464.7 - 32.0	***	10 - 12 - 1112.0 - 616.3 - 119.4	***	10 - 37 - 1496.3 - 911.4 - 415.7	***				
49 - 19 - 937.3 - 462.6 - 34.1	***	10 - 11 - 1097.7 - 601.0 - 104.3	***	10 - 22 - 1492.3 - 905.6 - 469.1	***				
49 - 17 - 934.8 - 458.0 - 36.6	***	10 - 23 - 1078.0 - 581.3 - 84.6	***	10 - 1 - 1315.5 - 818.4 - 221.7	***				
49 - 62 - 946.7 - 455.0 - 44.7	***	10 - 1 - 1039.9 - 540.2 - 42.5	***	10 - 26 - 1214.2 - 719.5 - 222.4	***				
49 - 52 - 944.8 - 448.1 - 48.6	***	10 - 36 - 1031.8 - 535.8 - 384.9	***	10 - 2 - 1183.3 - 607.6 - 195.9	***				
49 - 31 - 936.1 - 433.4 - 61.3	***	10 - 19 - 1026.8 - 523.1 - 32.4	***	10 - 7 - 1118.4 - 605.7 - 188.9	***				
49 - 49 - 907.5 - 408.8 - 87.9	***	10 - 66 - 1026.1 - 517.4 - 34.7	***	10 - 12 - 1136.3 - 629.9 - 163.2	***				
49 - 68 - 902.3 - 405.5 - 91.3	***	10 - 28 - 1016.3 - 519.6 - 22.9	***	10 - 11 - 1141.3 - 644.6 - 148.1	***				
49 - 3 - 858.0 - 361.2 - 135.6	***	10 - 14 - 1014.2 - 517.5 - 20.8	***	10 - 23 - 1121.0 - 632.1 - 128.4	***				
49 - 46 - 838.0 - 332.2 - 164.6	***	10 - 17 - 1009.6 - 518.9 - 162.3	***	10 - 1 - 1060.3 - 584.1 - 87.4	***				
49 - 32 - 819.0 - 322.3 - 174.4	***	10 - 63 - 999.7 - 503.0 - 6.3	***	10 - 16 - 1075.3 - 579.0 - 82.2	***				
49 - 20 - 771.4 - 274.7 - 222.0	***	10 - 31 - 945.0 - 488.3 - 8.4	***	10 - 19 - 1021.6 - 575.9 - 79.2	***				
49 - 77 - 732.8 - 235.1 - 260.6	***	10 - 49 - 980.4 - 463.7 - 33.0	***	10 - 66 - 1072.6 - 571.2 - 78.5	***				
49 - 62 - 731.4 - 234.7 - 262.0	***	10 - 47 - 957.1 - 460.4 - 36.3	***	10 - 28 - 1060.1 - 561.3 - 64.6	***				
49 - 68 - 684.8 - 183.1 - 304.8	***	10 - 1 - 917.8 - 416.1 - 80.6	***	10 - 16 - 1058.0 - 561.3 - 64.6	***				
49 - 52 - 662.9 - 165.2 - 330.5	***	10 - 49 - 883.7 - 387.0 - 109.7	***	10 - 17 - 1053.5 - 556.8 - 90.1	***				
49 - 64 - 630.8 - 153.7 - 343.5	***	10 - 31 - 875.3 - 377.2 - 119.6	***	10 - 63 - 1047.4 - 559.7 - 54.9	***				
49 - 47 - 631.4 - 152.7 - 362.0	***	10 - 20 - 824.6 - 329.6 - 167.1	***	10 - 31 - 1043.3 - 546.8 - 50.1	***				
49 - 61 - 629.2 - 152.5 - 362.4	***	10 - 7 - 787.7 - 291.0 - 205.7	***	10 - 19 - 1022.6 - 575.9 - 79.2	***				
49 - 6 - 584.0 - 92.9 - 403.8	***	10 - 62 - 786.5 - 289.6 - 207.1	***	10 - 48 - 1004.2 - 507.5 - 10.1	***				
49 - 10 - 584.8 - 88.1 - 408.6	***	10 - 60 - 799.2 - 243.0 - 233.7	***	10 - 38 - 1000.9 - 504.2 - 7.5	***				
49 - 12 - 519.9 - 85.2 - 333.5	***	10 - 22 - 717.8 - 211.1 - 275.7	***	10 - 3 - 956.7 - 460.8 - 36.7	***				
49 - 27 - 514.0 - 44.9 - 431.8	***	10 - 64 - 705.3 - 204.0 - 288.1	***	10 - 46 - 927.6 - 430.9 - 83.8	***				
49 - 50 - 539.4 - 42.9 - 435.8	***	10 - 61 - 646.3 - 189.5 - 307.2	***	10 - 20 - 870.2 - 373.4 - 123.9	***				
49 - 5 - 538.8 - 42.1 - 434.8	***	10 - 41 - 684.1 - 187.4 - 309.5	***	10 - 77 - 831.0 - 334.8 - 161.9	***				
49 - 46 - 504.8 - 39.9 - 438.8	***	10 - 4 - 644.5 - 187.8 - 349.6	***	10 - 63 - 830.1 - 333.4 - 163.3	***				
49 - 18 - 449.2 - 47.0 - 343.7	***	10 - 30 - 639.7 - 143.0 - 355.7	***	10 - 18 - 781.3 - 256.8 - 209.9	***				
49 - 36 - 447.8 - 43.2 - 343.7	***	10 - 15 - 614.2 - 110.1 - 378.6	***	10 - 92 - 751.6 - 354.9 - 231.8	***				
49 - 13 - 441.8 - 39.9 - 351.8	***	10 - 27 - 596.4 - 149.7 - 397.0	***	10 - 44 - 759.1 - 252.4 - 244.0	***				
49 - 15 - 441.1 - 35.5 - 332.3	***	10 - 30 - 594.5 - 178.8 - 398.9	***	10 - 47 - 739.1 - 233.4 - 241.3	***				
49 - 67 - 387.1 - 109.9 - 606.3	***	10 - 9 - 593.7 - 177.0 - 399.8	***	10 - 44 - 727.9 - 211.2 - 245.9	***				
49 - 9 - 338.4 - 135.2 - 634.9	***	10 - 34 - 559.3 - 162.8 - 433.9	***	10 - 6 - 681.3 - 19.6 - 301.1	***				
49 - 4 - 334.8 - 141.3 - 636.8	***	10 - 49 - 551.8 - 164.9 - 441.8	***	10 - 10 - 681.6 - 186.9 - 309.8	***				
49 - 13 - 335.9 - 247.7 - 749.6	***	10 - 19 - 504.3 - 7.8 - 488.3	***	10 - 19 - 658.7 - 162.0 - 234.8	***				
49 - 30 - 186.3 - 310.5 - 807.2	***	10 - 35 - 496.0 - 0.7 - 497.4	***	10 - 27 - 640.3 - 163.6 - 353.1	***				
49 - 25 - 37.9 - 334.6 - 1031.3	***	10 - 12 - 452.9 - 43.8 - 340.5	***	10 - 30 - 658.1 - 161.8 - 355.1	***				
49 - 56 - 2181.8 - 1983.1 - 1448.6	***	10 - 69 - 443.0 - 34.7 - 350.0	***	10 - 3 - 617.5 - 160.3 - 355.9	***				
49 - 34 - 2193.4 - 1869.1 - 1207.3	***	10 - 4 - 409.7 - 87.0 - 583.7	***	10 - 98 - 603.4 - 109.7 - 320.1	***				
49 - 55 - 2012.9 - 1516.2 - 1010.6	***	10 - 21 - 307.9 - 188.8 - 685.5	***	10 - 48 - 593.4 - 98.7 - 358.0	***				
49 - 40 - 1955.3 - 1459.3 - 963.1	***	10 - 30 - 341.0 - 255.7 - 752.4	***	10 - 14 - 548.4 - 31.7 - 415.0	***				
49 - 69 - 1933.3 - 1436.8 - 940.1	***	10 - 25 - 17.0 - 479.7 - 97.6	***	10 - 26 - 540.3 - 43.8 - 432.9	***				
49 - 8 - 1564.3 - 1367.6 - 870.9	***	10 - 35 - 2758.4 - 226.17 - 1765.0	***	10 - 33 - 539.9 - 43.1 - 433.6	***				
49 - 39 - 1562.9 - 1366.2 - 866.4	***	10 - 56 - 3490.3 - 193.6 - 1496.6	***	10 - 67 - 485.8 - 10.9 - 307.6	***				
49 - 24 - 1568.1 - 1181.4 - 664.7	***	10 - 34 - 2204.5 - 1707.0 - 1211.1	***	10 - 3 - 409.7 - 87.0 - 583.7	***				
49 - 45 - 1619.6 - 1121.2 - 676.2	***	10 - 35 - 2021.4 - 1524.7 - 1028.0	***	10 - 21 - 351.7 - 145.0 - 641.7	***				
49 - 55 - 1513.8 - 1051.9 - 350.1	***	10 - 65 - 1965.0 - 1463.9 - 971.6	***	10 - 20 - 284.9 - 211.8 - 106.3	***				
49 - 37 - 1510.4 - 859.7 - 96.4	***	10 - 1 - 1971.1 - 1445.3 - 946.0	***	10 - 25 - 640.9 - 435.8 - 923.5	***				
49 - 22 - 1330.0 - 854.1 - 357.4	***	10 - 1 - 1812.9 - 1376.0 - 879.5	***	10 - 39 - 241.3 - 231.8 - 1819.1	***				
49 - 51 - 1262.4 - 766.7 - 270.0	***	10 - 25 - 1671.4 - 1374.7 - 873.0	***	10 - 34 - 1544.4 - 204.7.3 - 1551.6	***				
49 - 28 - 1164.3 - 667.8 - 171.1	***	10 - 24 - 1666.7 - 1170.0 - 873.3	***	10 - 34 - 2336.5 - 476.8 - 1265.1	***				
49 - 7 - 1137.6 - 640.9 - 164.2	***	10 - 43 - 1621.2 - 1131.3 - 648.4	***	10 - 35 - 2071.1 - 1978.8 - 1082.1	***				
49 - 7 - 1130.7 - 634.9 - 137.3	***	10 - 7 - 1139.3 - 604.3 - 558.6	***	10 - 80 - 2019.1 - 1522.4 - 1023.6	***				
49 - 13 - 1104.9 - 408.2 - 111.3	***	10 - 57 - 1363.0 - 868.2 - 371.5	***	10 - 98 - 1994.1 - 1694.4 - 1002.7	***				
49 - 11 - 1089.9 - 593.2 - 96.4	***	10 - 33 - 1359.3 - 862.6 - 345.9	***	10 - 8 - 1926.9 - 1430.2 - 933.3	***				
49 - 20 - 1079.1 - 573.4 - 76.7	***	10 - 51 - 127.9 - 77.3 - 274.5	***	10 - 29 - 1923.1 - 1428.7 - 932.9	***				
49 - 1 - 1039.1 - 532.4 - 35.7	***	10 - 3 - 1173.1 - 676.4 - 179.2	***	10 - 34 - 1720.7 - 1224.0 - 727.3	***				
49 - 16 - 1024.0 - 527.3 - 30.6	***	10 - 35 - 1037.5 - 553.8 - 35.1	***	10 - 43 - 1682.3 - 1185.5 - 98.8	***				
49 - 19 - 1021.0 - 524.3 - 27.6	***	10 - 19 - 1029.5 - 523.2 - 35.1	***	10 - 31 - 1616.3 - 1114.3 - 612.7	***				
49 - 66 - 1020.3 - 523.6 - 26.9	***	10 - 3 - 1028.8 - 523.1 - 33.4	***	10 - 37 - 1419.0 - 922.3 - 425.6	***				
49 - 28 - 1008.4 - 511.7 - 13.0	***	10 - 28 - 1017.0 - 520.3 - 23.6	***	10 - 31 - 1413.					



Comparisons_Subsidiary_Calls:

07 - 47	-741.0	-244.3	252.4	4 - 32	-960.8	-444.1	32.5	30 - 93	-1255.3	-758.6	-261.9	***		
07 - 61	738.8	-242.1	254.6	4 - 20	-913.3	-416.6	80.1	30 - 31	-1240.6	-743.9	-247.2	***		
07 - 6	-699.2	-202.5	294.2	4 - 77	-874.7	-379.0	118.7	30 - 48	-1216.0	-719.3	-222.6	***		
07 - 10	-594.5	-197.8	298.9	4 - 62	-873.3	-376.6	120.2	30 - 88	-1212.7	-716.0	-219.3	***		
07 - 15	-569.6	-172.9	323.9	4 - 63	-826.7	-330.9	106.7	30 - 3	1168.5	-671.8	-175.1	***		
07 - 27	-651.2	-154.5	342.2	4 - 52	-804.7	-308.0	188.7	30 - 46	-1139.4	-642.7	-146.0	***		
07 - 50	-649.2	-152.5	344.2	4 - 64	-792.3	-295.6	201.2	30 - 32	-1129.5	-632.8	-136.1	***		
07 - 5	-548.4	-151.7	345.0	4 - 47	-773.2	-276.5	220.2	30 - 20	-1082.0	-585.3	-88.6	***		
07 - 94	-614.3	-117.6	379.2	4 - 61	-771.1	-274.4	222.4	30 - 77	-1043.4	-546.7	-50.0	***		
07 - 49	-606.3	-109.6	387.1	4 - 6	-731.4	-234.7	262.0	30 - 62	-1041.9	-545.2	-48.5	***		
07 - 18	-559.3	-62.6	434.1	4 - 10	-726.7	-230.0	266.7	30 - 63	-995.4	-498.7	-1.9	***		
07 - 58	-551.4	-54.7	442.0	4 - 15	-701.8	-205.1	291.6	30 - 52	-973.4	-476.7	20.0			
07 - 33	-550.8	-54.0	442.7	4 - 27	-683.4	-186.7	310.0	30 - 64	-960.9	-464.2	32.5			
07 - 13	-507.6	-10.9	485.8	4 - 50	-681.5	-184.8	311.9	30 - 47	-941.9	-445.2	31.5			
07 - 9	-488.2	28.5	525.2	4 - 5	-680.6	-183.9	312.8	30 - 61	-939.7	-443.0	53.7			
07 - 4	-464.5	32.2	528.9	4 - 49	-646.5	-149.8	346.9	30 - 6	-900.1	-403.4	93.3			
07 - 21	-362.6	134.1	630.8	4 - 49	-638.6	-141.3	334.8	30 - 10	-895.4	-398.7	98.0			
07 - 30	-295.8	200.9	697.6	4 - 18	-591.5	-94.8	401.9	30 - 15	-870.5	-373.8	122.9			
07 - 25	-71.8	424.9	921.0	4 - 58	-583.7	-87.0	409.7	30 - 27	-852.1	-355.4	141.3			
07 - 39	-2841.0	-2344.3	-1847.6	***	4 - 33	-583.0	-86.3	410.4	30 - 50	-850.2	-353.4	143.3		
07 - 56	-2572.9	-2076.2	-1579.5	***	4 - 13	-539.9	-43.1	433.6	30 - 3	-849.3	-352.6	144.1		
07 - 54	-2287.1	-1790.3	-1293.6	***	4 - 67	-528.9	-32.2	464.3	30 - 9	-815.2	-318.5	178.2		
07 - 55	-2104.0	-1607.3	-1110.6	***	4 - 9	-500.4	-3.7	493.0	30 - 49	-807.2	-310.5	186.2		
07 - 60	-2047.5	-1559.9	-1054.2	***	4 - 21	-394.9	101.9	598.5	30 - 18	-760.2	-263.5	233.2		
07 - 69	-2024.6	-1527.9	-1031.2	***	4 - 30	-328.0	168.7	665.4	30 - 56	-752.4	-255.7	241.0		
07 - 8	-1935.2	-1458.7	-962.0	***	4 - 25	-104.0	392.7	889.4	30 - 33	-751.7	-255.0	241.7		
07 - 29	-1954.0	-1457.3	-960.6	***	21 - 59	-2946.5	-2449.8	-1953.1	***	30 - 13	-708.7	-211.8	284.9	
07 - 24	-1749.3	-1252.5	-735.8	***	21 - 56	-2678.5	-2181.7	-1683.0	***	30 - 67	-697.6	-200.9	293.8	
07 - 45	-1710.7	-1214.0	-717.3	***	21 - 54	-2392.6	-1895.9	-1399.2	***	30 - 9	-669.1	-172.4	324.3	
07 - 53	-1644.9	-1143.0	-641.2	***	21 - 55	-2209.5	-1712.8	-1216.1	***	30 - 4	-665.4	-168.7	328.0	
07 - 57	-1447.5	-930.8	-454.1	***	21 - 60	-2153.1	-1656.4	-1159.7	***	30 - 21	-563.6	-66.8	429.9	
07 - 22	-1441.9	-945.2	-448.5	***	21 - 69	-2130.2	-1633.5	-1136.7	***	30 - 25	-272.7	224.0	720.7	
07 - 51	-1354.5	-857.8	-361.1	***	21 - 8	-2061.0	-1564.3	-1067.6	***	25 - 59	-3237.4	-2740.7	-2244.0	
07 - 26	-1255.7	-758.9	-362.2	***	21 - 29	-2059.5	-1562.8	-1066.1	***	25 - 56	-2969.3	-2472.6	-1975.9	
07 - 2	-1228.8	-732.0	-235.3	***	21 - 24	-1854.8	-1358.1	-861.4	***	25 - 34	-2683.5	-2186.3	-1690.0	
07 - 7	-1221.8	-725.1	-228.4	***	21 - 45	-1816.3	-1319.6	-822.9	***	25 - 55	-2500.4	-2003.7	-1507.0	
07 - 12	-1196.0	-693.3	-202.6	***	21 - 53	-1750.4	-1248.6	-746.7	***	25 - 60	-2444.0	-1947.3	-1450.6	
07 - 11	-1181.0	-684.3	-187.6	***	21 - 57	-1553.1	-1056.4	-559.7	***	25 - 69	-2421.0	-1924.3	-1427.6	
07 - 23	-1161.3	-664.5	-167.8	***	21 - 22	-1547.5	-1050.7	-554.0	***	25 - 8	-2351.9	-1855.1	-1358.4	
07 - 1	-1120.2	-623.5	-126.8	***	21 - 51	-1460.1	-963.3	-466.6	***	25 - 29	-2350.4	-1853.7	-1357.0	
07 - 16	-1115.1	-618.4	-121.7	***	21 - 26	-1361.2	-864.5	-367.8	***	25 - 24	-2145.7	-1649.0	-1152.2	
07 - 19	-1112.1	-615.4	-118.7	***	21 - 2	-1334.3	-837.9	-340.9	***	25 - 45	-2107.2	-1610.4	-1133.7	
07 - 66	-1114.4	-614.7	-118.0	***	21 - 7	-1327.3	-830.6	-333.9	***	25 - 53	-2041.3	-1539.5	-1037.6	
07 - 28	-1099.6	-602.8	-106.1	***	21 - 12	-1301.6	-804.9	-308.2	***	25 - 37	-1843.9	-1347.2	-850.5	
07 - 14	-1097.5	-600.8	-104.0	***	21 - 11	-1285.5	-789.8	-293.1	***	25 - 22	-1838.3	-1341.6	-844.9	
07 - 17	-1052.9	-596.2	-99.3	***	21 - 23	-1266.8	-770.1	-273.4	***	25 - 51	-1750.9	-1254.2	-757.5	
07 - 83	-1086.8	-590.1	-93.4	***	21 - 1	-1225.7	-729.0	-232.3	***	25 - 26	-1652.1	-1155.4	-658.6	
07 - 93	-1082.9	-586.2	-89.5	***	21 - 16	-1220.6	-723.9	-237.2	***	25 - 2	-1625.2	-1128.4	-631.7	
07 - 31	-1066.8	-571.5	-74.6	***	21 - 19	-1217.6	-720.9	-224.2	***	25 - 7	-1618.2	-1121.5	-624.8	
07 - 48	-1043.7	-546.9	-50.2	***	21 - 6	-1216.9	-720.2	-223.5	***	25 - 12	-1592.5	-1095.7	-599.0	
07 - 88	-1040.4	-543.7	-46.9	***	21 - 28	-1205.1	-708.4	-211.7	***	25 - 11	-1577.4	-1080.7	-584.0	
07 - 3	-996.1	-494.4	-2.7	***	21 - 3	-1101.6	-604.9	-108.2	***	25 - 23	-1537.7	-1061.0	-564.2	
07 - 46	-957.0	-470.3	26.4		21 - 46	-1072.6	-575.8	-79.1	***	25 - 1	-1516.6	-1019.9	-523.2	
07 - 32	-957.1	-460.4	36.3		21 - 32	-1062.7	-566.0	-69.3	***	25 - 16	-1511.5	-1014.8	-518.1	
07 - 20	-909.6	-412.9	83.8		21 - 20	-1015.1	-518.4	-21.7	***	25 - 19	-1508.5	-1011.8	-513.1	
07 - 77	-871.0	-374.3	122.4		21 - 77	-976.5	-479.8	16.9	***	25 - 66	-1507.8	-1011.1	-514.4	
07 - 62	-869.5	-372.8	123.9		21 - 62	-975.1	-478.4	18.3	***	25 - 28	-1496.0	-999.3	-502.5	
07 - 63	-823.0	-326.3	170.4		21 - 63	-928.5	-431.8	64.9	***	25 - 14	-1493.9	-997.2	-500.3	
07 - 52	-801.0	-304.3	192.4		21 - 52	-906.6	-409.9	86.8	***	25 - 17	-1489.3	-992.6	-495.9	
07 - 64	-788.6	-291.8	204.9		21 - 64	-894.1	-397.4	99.3	***	25 - 83	-1483.2	-986.5	-489.8	
07 - 47	-769.5	-272.8	223.9		21 - 47	-875.1	-378.4	118.3	***	25 - 93	-1479.4	-982.6	-485.9	
07 - 61	-767.4	-270.6	226.1		21 - 61	-872.9	-376.2	120.5	***	25 - 31	-1464.6	-967.9	-471.2	
07 - 6	-727.7	-221.0	265.7		21 - 5	-782.5	-285.8	208.2	***	25 - 48	-1440.1	-943.4	-446.6	
07 - 10	-723.0	-201.4	270.4		21 - 10	-828.5	-311.8	164.9	***	25 - 88	-1436.8	-940.1	-443.3	
07 - 15	-698.1	-181.1	295.3		21 - 27	-785.3	-285.5	208.2	***	25 - 3	-1392.5	-895.8	-399.1	
07 - 27	-679.7	-183.0	313.7		21 - 50	-783.3	-286.6	210.1	***	25 - 46	-1363.4	-866.7	-370.0	
07 - 50	-677.8	-181.1	315.6		21 - 5	-782.5	-285.8	210.9	***	25 - 32	-1353.5	-856.8	-360.1	
07 - 5	-676.9	-180.2	316.5		21 - 20	-783.3	-286.6	210.1	***	25 - 77	-1267.1	-710.7	-274.0	
07 - 94	-642.8	-146.1	350.6		21 - 5	-782.5	-285.8	210.9	***	25 - 02	-1266.0	-769.2	-273.5	
07 - 49	-634.9	-138.2	358.6		21 - 10	-803.6	-306.9	189.8	***	25 - 63	-1219.4	-722.7	-226.0	
07 - 18	-587.8	-91.1	405.6		21 - 15	-803.6	-306.9	189.8	***	25 - 52	-1197.4	-707.0	-204.0	
07 - 58	-580.0	-83.3	413.4		21 - 33	-884.8	-301.1	307.6	***	25 - 15	-1094.5	-597.4	-101.1	
07 - 33	-579.2	-83.6	414.1		21 - 13	-641.7	-145.0	551.7	***	25 - 5	-1073.3	-576.6	-79.9	
07 - 13	-536.1	-39.4	457.3		21 - 67	-630.8	-134.1	362.6	***	25 - 94	-1039.2	-542.5	-45.8	
07 - 67	-525.2	-28.5	468.2		21 - 9	-602.2	-105.5	391.2	***	25 - 49	-1031.3	-534.6	-37.9	
07 - 4	-493.0	3.7	500.4		21 - 4	-598.5	-101.8	394.9	***	25 - 18	-984.2	-487.5	9.2	
07 - 21	-391.2	105.5	602.2		21 - 30	-429.9	66.8	563.6	***	25 - 58	-976.4	-479.7	17.0	
07 - 30	-324.3	172.4	669.1		21 - 25	-205.8	290.9	787.6	***	25 - 33	-975.7	-479.0	17.7	
07 - 25	-100.3	396.4	893.1		20 - 59	-3013.4	-2516.7	-2020.0	***	25 - 13	-932.5	-435.8	60.9	
07 - 59	-2844.7	-2348.0	-1851.3	***	20 - 56	-2745.3	-2248.6	-1751.9	***	25 - 67	-921.6	-424.9	71.8	
07 - 56	-2576.6	-2079.9	-1583.2	***	20 - 45	-2459.4	-1962.7	-1466.0	***	25 - 9	-893.1	-396.4	100.3	
07 - 54	-2290.8	-1794.1	-1297.4	***	20 - 55	-2276.4	-1779.7	-1283.0	***					

EPILOGUE

Each term paper, article, thesis, or dissertation is a statement by the writer. For younger individuals, such statements may be offered in hopes of professional advancement, financial gain, or personal aggrandizement.

For this student, at more than three score and eight years, none of these apply. This work has been undertaken partly out of a long-term curiosity, in part to be an example to my children, and in part to be able to make a statement closing certain doors as others are opened.

I might have made this statement years ago, but though it seemed close to fruition for a time, battles remained to be fought, and rough and rugged roads remained to be traveled.
However, let it be realized that although I did not turn away from the battles,
avoid the obligations, nor shirk at the roads to be traveled,
the hope of being able to make this final statement in this type of work
was never lost.

Perhaps only those who have also traveled the killing fields of mankind's inhumanity to mankind
and the earth can understand this kind of reasoning
behind so many years of study in so many places
to reach this milestone.

Now, at long long last, the milestone is reached and it can be said.
I look to work for that day when all humanity will join me in saying,...
as I have tried to express with academic training, studies, research, and this writing...
...as I have wanted to be able to say—this way—during so many battles and for so many years:

The Sword has now become my plowshare
and The Spear—my pruning hook.

I work toward that day when all will stand together as equals in estimation, trust, and love,
to understand, forgive, conserve, and build for each other and the earth,
when nation shall no more rise up against nation,

When the lion shall lie down with the lamb,
and all humanity shall join me in saying,
as now I can say,... after so long a time,

I study war no more!

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The roads ahead are ones on which to learn, to work, and to contribute...
to spend the remaining days of my life in the fields of flowers, education, and research,...
laboring in these fields to preserve and proliferate
on behalf of generations to come.

...and for myself
to at least stand in spirit with Johannes Kepler and work as he did
—hopefully—

only to know,... to humbly comprehend
just a little

of The Mind of God.

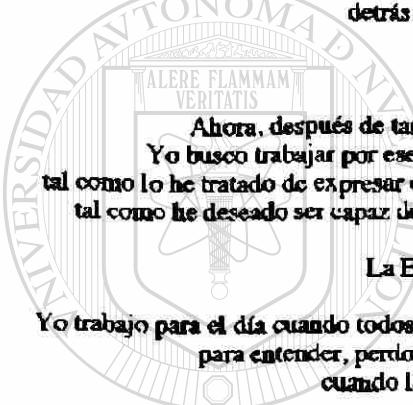
EPILOGO

Cada reporte escolar, artículo, tesis o disertación constituyen una declaración por parte de quien lo escribe. Para individuos más jóvenes, tales declaraciones pueden ser ofrecidas con deseos de superación profesional, beneficio económico o por agradecimiento personal. Para este estudiante a mas de sesenta y ocho años, ninguno de estos ejemplos es aplicable. Este trabajo se ha emprendido en parte por una curiosidad de muchos años, en parte para ser un ejemplo para mis hijos y en parte para ser capaz de hacer una declaración evitando ciertas pueras al mismo tiempo que otras se abren.

Yo pude haber hecho esta declaración hace años, pero, aun cuando en algún tiempo su fruición parecía bastante cerca, aun permanecían batallas por defender y escabrosos caminos por transitar.

Sin embargo, que quede entendido que a pesar de que yo no hui de las batallas, tampoco evité las obligaciones, ni acorte los caminos por viajar, la esperanza de ser capaz de hacer esta declaración final en este tipo de trabajo nunca fue perdida.

Quizá sólo aquellos quienes también han presenciado los escenarios de las masacres de la inhumanidad del género humano contra la humanidad y el planeta tierra puedan entender esta clase de razonamiento detrás de tantos años de estudio en tantos lugares para alcanzar este hito.



Ahora, después de tanto tanto tiempo, el hito se ha alcanzado y se puede decir.

Yo busco trabajar por ese día cuando la toda la humanidad se una contigo para decir... tal como lo he tratado de expresar con entrenamiento académico, estudios, investigaciones y éste escrito... tal como he deseado ser capaz de decir —de esta forma— durante muchas batallas y por muchos años:

La Espada ahora se ha convertido en mi arado
y La Lanza en mi cuchilla de podar.

Yo trabajo para el día cuando todos juntos se pongan de pie como iguales en estimación, confianza y amor,
para entender, perdonar, conservar y construir para el próximo y para la tierra,
cuando las naciones no se alce contra otras naciones,
cuando el león descansé junto al cordero,...
y toda la humanidad se una contigo al decir,
como lo puedo decir ahora,... después de tanto tiempo,

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Los caminos verdaderos son aquellos para aprender, trabajar y contribuir,...
para emplear el resto de mis días de vida en los campos de flores, educación e investigación...
laborando en esos campos para preservar y proliferar
en favor de las generaciones venideras.

...y por mí mismo
para al menos permanecer en espíritu con Johannes Kepler y trabajar como él lo hizo
—esperanzadoramente—

solo para conocer,... para comprender humildemente
solo un poco

de La Mente de Dios.

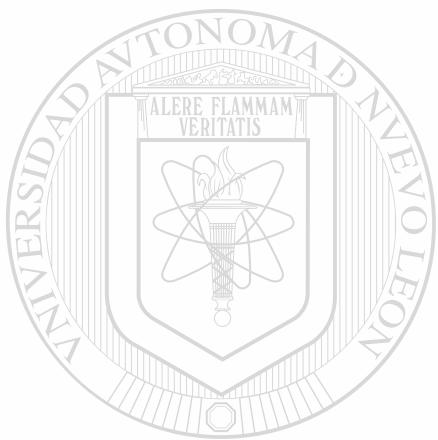


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