The corrosives destroy the tissues with which they come in contact by chemical action, and are characterized by causing intense pain with a burning. The simple irritants cause primarily irritation; secondarily, inflammation, which may prove fatal. The specific irritants act primarily as local irritants, but have a secondary specific action. These are the poisons with which the physician is most frequently called to deal in this country. In acute cases they cause lesions of the alimentary canal; but in cases of slow poisoning these are wanting. Of the neurotics, Dr. Pugnet says that they have not as yet occupied a prominent place in toxicology, but the day is not distant when the practitioner may be called upon to investigate cases of criminal poisoning by means of them.

The above classification is the most complete which the writer has seen. Others which have received wide approval are those of Orfila, Taylor, and Tardieu (the leading features of which are given in 2 Wharton and Stillé's "Med. Jur.," 4th ed.). What recommends it to the toxicologist is that the various poisons are classified according to their distinctive physiological action upon the living organism, and not upon their chemical organization and differences. Classifications by Christison and Foderé are also widely quoted.

Counsels and Cautions Relative to a Legal Inquiry.—The various works that discuss toxicology in its chemical and medical aspects contain numerous counsels and cautions to the practitioner as to the manner of carrying forward the scientific investigation necessary in cases of supposed poisoning. This paper will select and mention such as are particularly applicable where a suspicion of crime arises.

Remember that poisons may enter the system with fatal effect, not only by swallowing, but also by inhalation, by absorption through the skin, including the accessible mucous membranes, and by injection, subcutaneous or per anum. Swallowing is the mode best adapted for administering them with murderous intent, but in cases in which the symptoms are obscure and not explainable by a suspicion of a poison swallowed, the medical jurisprudent will do well to consider the possibility that one or the other modes may have been employed.

In particular persons, substances ordinarily poisonous may be rendered inert, or those not ordinarily unwholesome may be rendered poisonous, by some idiosyncrasy of the individual, by a habit of taking them, or by a condition of disease.

A poisonous compound may, by possibility, be formed within the body by two medicines innocently prescribed or taken, either of which alone would have been innocuous.

An organ may, by possibility, become impregnated with a poison after death, either accidentally, as where it has been laid in a soil in which are poisonous elements, or where such elements are introduced in the process of embalming; or feloniously, as where an attempt is made to introduce a poison in order to give ground for charging an innocent person with murder. The presence of substances introduced after death is scientifically distinguishable, no doubt, from those taken in life; but the two may be confounded if the distinction is forgotten.

The narrative of the symptoms attending the last illness is of less service than is usually supposed in determining the criminal character of the case. Modern experience is, that death cannot be safely attributed to poisoning from the symptoms alone; too many diseases resemble the action of poisons to allow of dispensing with an autopsy and a chemical examination, when poisoning is suspected. And still less light is thrown by the mere symptoms upon the question fundamental in the legal aspects of the subject—whether the poison was taken accidentally or ignorantly, or was taken with suicidal purpose, or was administered with felonious intent this question must be decided from the general attendant circumstances of the case.

The physician should never allow moral circumstances to prejudice his mind, neither should he neglect them. Indeed, he is the best judge concerning them. Let him ascertain whether an enmity exists between the sick person and any one who attends or visits him; whether any poisonous substances have lately been purchased; whether these are still in the house; whether the alarming circumstances came on immediately after taking a drink or any other substance of an innocent nature; and particularly, in case of a sick person, let him ascertain whether anything has been given without the orders of the physician or by a person ignorant of drugs; and then he should draw a comparison between the symptoms present and those that ordinarily accompany the supposed disease.

He should carefully examine and preserve samples of every article of a suspicious nature, such as vials, boxes or papers containing powders, remains of food or drink, linen, sponges, cooking utensils, etc., in use about the patient; and he may (if assured of the support of the persons interested to promote justice) safely exercise a good deal of assumed authority in taking such precautions as against anybody who may object or oppose. Often a careful search of the premises and of the dead body will bring to light some article which, coupled with peculiar circumstances, warrants suspicion.

To decide between the relative probability of suicide and murder is a difficult question. The following facts are considered to indicate suicide: that the deceased had recently met with great losses or disappointments, or was suffering under disgrace, or under some form of insanity or delirium; that the mode of poisoning was cunningly devised to avoid a suspicion of suicide while yet the deceased held a life insurance policy; that he left any recent writing expressing his last wishes. If death has not occurred, the circumstance that the patient does not complain, but declines medical aid and remedies, confirms a suspicion of suicide. On the other hand, such suspicion is partially excluded when the circumstances favor the presumption that the deceased was in the enjoyment of a prosperous and happy life; when the drug employed is rare and procurable only with great difficulty, or is one which needs the co-operation of a second person for its administration, or is known to be productive of long and severe suffering. Considerations like these, and the results of a skilful toxicological investigation, in which the means afforded by anatomical and microscopic science, chemistry, and spectral analysis are useful to be employed, are more important in determining that the death is attributable to poison, and that this may probably have been criminally administered, than are the mere symptoms.

The examiners should observe perfect cleanliness at every step of their work; the organs removed from the cadaver for chemical examination should not be placed, for example, upon boards or in receptacles which have been cleaned with disinfecting solutions which may have had poisonous constituents, but should be placed in glass or porcelain-lined dishes previously cleansed. The prudent and judicious advice given by Wharton and Stillé (2 "Med. Jur.," § 11) is that whenever, in a case involving a suspicion of murder, "a chemical analysis for poison is to be made of any of the organs, these organs should be placed by the physician himself in perfectly clean glass jars; glass preserve jars with a glass or porcelain-lined cover are suitable for the purpose, and can always be obtained in the country or city. Each organ should be placed in a jar by itself—for instance, the stomach in one jar, its contents in another, the intestines in another, contents of intestines in a fourth, the liver in a fifth, the kidneys in a sixth, the brain in a seventh, etc. The organs which should be saved for chemical analysis are, in order of their importance, as follows: stomach, contents of stomach, liver, intestines, contents of intestines, kidneys, brain, heart, spleen, and urine if there be any; in some cases, it is important to save portions of the muscular tissue, and in others a part of the lungs. In some cases it is wise for the physician making the examination to divide each of these substances into approximately two equal parts, each part to be kept in separate

jars, one to be given to one chemist for preliminary analysis, and the other to be retained by the physician himself, in case it may be necessary to have the analysis confirmed by another chemist, as is usually the case in trials for murder by poison. These jars containing the organs should be closed and sealed by the physician himself, the seal to be stamped with a private stamp. They should then be locked up until they are to be delivered to the chemist. It is better that the organs be placed under double lock, one key to be taken by one person and the other by another, so that neither one alone has access to the organs; this is, of course, not necessary if one person possesses the key and another has possession of the stamp with which the seals have been stamped. When the jars are to be sent to a chemist, they should be sent by messenger, preferably by two messengers, since, in the event of the investigation resulting in a trial for murder, the identity of the organs cannot be lost by the death of the messenger. The organs should never be sent by express since it is in that case impossible to preserve with absolute certainty the identity of the organs."

Sending the organs or their contents to the chemist is often not enough, especially when crime is suspected. Thus, the reason why no poisonous substance is found in the stomach may be that all which was not absorbed was vomited; therefore all vomited matter which can be procured, including clothing, or carpet, or surface of floor which has received it, should have chemical examination. The vessel in which vomited matter has been contained will often furnish valuable evidence, since heavy mineral poisons fall to the bottom, adhere to the sides, or leave a sediment. The offender may have had the intelligence and opportunity to empty the basin, etc., but not have thought, or not have been able, to attend to the dress or the floor.

Formerly it was the practice to confine the analysis to the stomach and its contents. Experience has, however, shown that most if not all the viscera, including the bladder and urine, are required before anything like a satisfactory conclusion can be drawn as to the existence of poison.

The stomach, with its contents, should always be received by the analyst in its entire state, and not, as was formerly usual, sent to him slit, and the contents mixed in a jar with other fluids and organs—a practice which is highly objectionable, as it may lead to the ends of justice being defeated by the complication involved. A slight incision may suffice to inform those who perform the autopsy of the state of the organ and the nature of its contents, when it should be tied and handed to the analyst. If, in case of accident or dispute, a necessity arises to preserve a portion of the stomach and other organs, together with any fluids or solids, in bottles or otherwise, for further reference and confirmation, this may be done, but they should all be properly labelled and dated and kept in a cool place.

Besides receiving the matter to be analyzed or examined, the analyst should be thoroughly informed upon the history of the case, and the symptoms and effects, as a knowledge of these will aid his examination, enable him to avoid useless searches, and prevent his overlooking suspicious facts. He should even be informed of the exact time of the death, which is important in reference to the length of time usually taken for a fatal operation of the poison suspected; of the attitude of the body, etc., especially if there were any dying struggle; as certain poisons cause characteristic writhings or convulsions.

The analyst should never leave the vessel containing the suspected fluid in an exposed situation. He should keep it under lock and key, and, if interrupted in the course of the experiments, should restore it to such a place that he can positively affirm that no one could have meddled with it.

The notes of an autopsy or chemical examination should be promptly reduced to an orderly report; and greater care than is usually taken is desirable to avoid the use of medical or chemical terms, such as are not easily understood by judges and jurors.

When the chemist has completed his analysis, if he finds that the poisoning has been committed with an inorganic poison, such as arsenic, antimony, etc., he should bring the metal into court and present it to the jury; and there should be a sufficient quantity of it in order to submit it to all the tests necessary for its identification. With the organic poisons, the legal chemist would find this almost an impossibility, as the organic poisons are much more active, and are fatal in smaller doses. Their presence can be proved by various tests which are reliable; but their very nature would tend to prevent their complete isolation in sufficient quantities for presentation to the jury. *Benjamin Vaughan Abbott.*

POISONOUS PLANTS.—It is generally agreed in toxicology that the term "poison" should not be applied to any substance which produces its injury through mechanical means. Following this terminology, we exclude from consideration in this article all such substances as cowhage, which produces intestinal injury chiefly by the piercing quality of its hairs, the sharp awns of the many grasses so fatal to grazing animals, the prickles and thorns of thistles, brambles, cactuses, and similar plants, which act mechanically, at least chiefly, notwithstanding that their presence often produces abscesses from which blood poisoning may result. From this article are excluded also all the ordinary disease germs. Although, strictly speaking, such diseases are the results of poisoning by these minute plants, growing within the system, their proper treatment pertains to bacteriology and pathology.

Since most of the more important poisonous plants are, by virtue of their activity, available for medicinal purposes, they are discussed elsewhere in that connection. Not only are their poisonous effects and the treatment there considered, but descriptions ample for their identification, in the condition of drugs, are provided. In many cases such drug descriptions have been supplemented by others, pertaining to the plants themselves, often with illustrations, in order to provide for their identification in cases of poisoning by the fresh material. The present article is intended to supplement the above by considering important poisonous plants not used as drugs. At the same time many of the latter will be referred to at the proper points in this system, and the other articles upon them will be duly cited.

General Recognition.—The question is frequently propounded, "Is there any general rule by which a poisonous plant can be recognized at sight?" To this question an emphatic negative must be returned. There are certain characteristics which frequently accompany poisonous properties, but this is not true in all cases; and, on the other hand, these characters may exist in the absence of such poisonous properties. Of such characters are the peculiar lurid purple color seen upon the stems of the castor oil, cicuta, conium, pokeberry, dogbane, and many other plants, though shown also by the harmless angelica. A narcotic odor is common to many of the most poisonous plants, but is wanting in many others. An acrid taste is probably the most common characteristic, and constitutes the best safeguard which we possess, since it is likely, especially in the fresh article, to furnish a warning before a dangerous quantity has been consumed. Thus the potato, though ordinarily quite bland, imparts, when poisonous, a peculiar bitter, nauseous, and slightly acrid taste. Even this taste-guide, however, fails in many notably poisonous substances. It may be added that milky-juiced plants are usually to be regarded with suspicion.

Principal Poisonous Families.

Of the two hundred and eighty or more families of plants, a number are recognized as being specially rich in poisonous species; but not all of the species of any family are poisonous, and important food plants are usually found closely related, in the same family, to violent

poisons. Thus the family *Solanaceæ* contains the deadly nightshade, stramonium, and henbane, yet yields the potato, the egg plant, and the tomato, and even the potato itself may at times be poisonous. In the *Euphorbiaceæ* we find the manchineel, croton, and euphorbium, together with the cassava; and we have indeed poisonous varieties of the latter. Many similar illustrations might be cited. It is, therefore, not deemed feasible to essay a classification based upon botanical or any other general relationship, although, as a matter of convenience, the characteristics of several highly poisonous families are given below. While only a practical botanist can be expected to utilize this method of recognition to the fullest extent, yet surgeons in the army and navy and other travellers may gain great assistance by recognizing suspected plants as pertaining to the following families:

Apocynaceæ (the Dogbane Family).—This large family, of more than a thousand species, chiefly tropical, is probably, all things considered, the most commonly and powerfully poisonous. Its members are mostly heart poisons, well illustrated by apocynum, strophanthus, and oleander. Its poisonous constituents are bitter and chiefly glucosidal, though many alkaloids are contained, and a number of them, or the extracts containing them, enter into the manufacture of arrow poisons, especially in the Old-World tropics. Poisoning accidents by members of this family are rather common in tropical regions, sometimes occurring through the use of the stems for spitting meat, stirring food, or in similar culinary operations. The botanical characters are as follows: Juice usually milky; leaves (in the poisonous species) opposite, simple, exstipulate. Flowers regular, perfect, 5-merous; calyx inferior, persistent, imbricated; corolla tubular, the limb usually rotate, convolute; stamens five, borne upon the corolla and alternating with its lobes, the anthers two-celled; pistil dicarpellary, the carpels distinct or united; the ovary 2-celled or with two parietal placentæ; styles united or divided up to the simple stigma; fruit usually of two follicles, occasionally drupaceous; seeds frequently plumose.

Araceæ (the Arum Family).—This monocotyledonous family is well illustrated by the calla and calamus. Its members are chiefly tropical, and produce thick, somewhat succulent stems, frequently climbing tree trunks, and usually large, somewhat succulent, cordate leaves similar to those of the calla. A great many species produce bulbous or tuberous stem bases, commonly regarded as roots. Some of these, as the taro (*Calocasia esculenta*), are important foods. Others would be so but for their poisonous constituents. In a few cases, where these poisonous properties are mild, they are destroyed by thorough cooking, while in others this method fails and attempts thus to use them may result disastrously. The injurious principles fall into three classes: First, as in the seeds of peltandra and skunk's cabbage, needle-shaped raphides of calcium oxalate, occurring in great abundance, and irritating mechanically; second, as in our common wild turnip, acrid juices which are partly destroyed by drying; third, powerful alkaloids, some of them, or the extracts containing them, used in the manufacture of arrow poisons. The flowers of the aroids occur densely massed upon a cylindrical (as in calla) or a globular (as in skunk's cabbage) spadix, enclosed or subtended by a spathe (the white portion of the calla), though this is sometimes obscure. The plants are diœcious, or the staminate flowers are on the upper, the pistillate on the lower portion of the spadix. Rarely the flowers are perfect. There is usually no perigone, though sometimes this exists in the form of a number of scales. The filaments are very short, their anthers two-celled, the cells separated by a broad connective and opening dorsally. The ovary is variable in structure, the stigma terminal, small, sessile, or on a very short style. Fruit usually a berry, occasionally inflated.

Cactaceæ (the Cactus Family).—Beyond remarking that many leafless and spiny or succulent plants which do not pertain to this family are frequently mistaken for cactuses, little need be said of its characters. The juice is bland and never milky, the flowers are showy, polypetulous and polyandrous, and the inferior fruit is a many-seeded berry. In desert regions, in the absence of food, and more especially of drink, the flesh and juice of cactuses are often utilized. In such cases it should be borne in mind that while the spiny species are usually innocent, those which are unarmed, or nearly so, like the night-blooming cereus and the anhaloniums, are often narcotic or cardiac poisons.

Campanulaceæ (the Harebell Family), including *Lobeliaceæ* (the Lobelia Family).—The two divisions of this family here named have been regarded by many botanists as distinct families. Certainly there is a marked distinction between their properties, the former yielding roots rich in inulin and sometimes edible, whereas the Lobeliaceæ contend with the Apocynaceæ for first rank among poisonous families. The nature of the constituents and the character of the poisoning are pretty uniform and have been sufficiently detailed under Lobelia. Since the poisonous species are very widely distributed throughout both temperate and tropical regions and are quite showy and attractive, their recognition is unusually important; fortunately it is also quite easy. The juice is acrid and almost always milky; leaves alternate, exstipulate, simple, and commonly abundant; flowers perfect, mostly showy, usually 5-merous; calyx tube adherent, the limb mostly regular and persistent; corolla tubular, epigynous, irregular and oblique or two-lipped, its tube fissured on the upper side; stamens five, inserted upon or with the base of the corolla and alternate with its lobes, the filaments coherent for the most of their length, as well as the anthers.

Cucurbitaceæ (the Cucumber Family).—Notwithstanding that this family is rich in edible fruits, like the pumpkins, melons, and cucumbers, yet it contains also a very large number of poisonous species. The poisonous properties pertain usually to the roots or the fruits. The former class is typified in bryonia, and has been sufficiently considered under that title. The latter is illustrated in our accounts of colocynth and elaterium, and need not be further considered. No difficulty need be experienced in the identification of the *Cucurbitaceæ*, which are tendril-bearing vines, usually herbaceous, and the flowers of which are invariably constructed like those of the plants named above, though they are occasionally small or even minute.

Euphorbiaceæ (the Spurge Family).—The general and poisonous properties of this family have been considered in Vol. IV. The plants are readily recognized by their milky juices, in connection with the unisexual flowers, which are themselves inconspicuous, though often surrounded by showy modified leaves resembling a flower circle. The perigone and andrœcium are so extremely variable as to be difficult of any brief characterization. The ovary and fruit are almost uniformly three-celled and the latter few-seeded.

Iridaceæ (the Iris Family).—This monocotyledonous family almost uniformly contains irritant poisonous oleo-resins, well illustrated by that of the official *Iris*. Owing to their acrid properties they are not very likely to cause poisoning, except through their medicinal employment. Nevertheless, owing to the fleshy and obviously nutritive character of their rhizomes or tubers, they are not infrequently resorted to as famine foods in some countries, and disastrous results have sometimes thus occurred. These plants are perennial herbs with narrow, distichous, often succulent leaves. The flowers are perfect, with an adherent six-parted convolute and marcescent perigone. The stamens are three and adherent to the outer perigone segments. The ovary and seed pod are commonly three-celled, with a three-parted style, and the ovules and anatropous albuminous seeds are numerous.

Leguminosæ (the Bean Family).—This family has already been briefly considered in Vol. V. as to the general nature and properties of its poisonous constituents. As poisons, its members present peculiar dangers, which, upon the whole, are not equalled by those of any other family. These dangers lie in the fact that, while the poisonous constituents are very widely and irregularly distributed, and extremely subtle and uncertain, the family is at the same time the most highly nutritious as to albuminoid constituents in the vegetable kingdom. Even such edible articles as peas and beans are not entirely free from poisonous properties, which become apparent when they are fed in large quantities as stock foods. Although the poisonous properties pertain to all three of the sub-families, they are most common and conspicuous in the Papilionaceæ. The members of this family are rather easily recognized by their almost uniform habit of producing a legume for a fruit, and by their highly developed exalbuminous seeds. In the Papilionaceæ the leaves are alternate, stipulate, and usually compound, the flowers papilionaceous and nearly always perfect, the calyx more or less gamosepalous, the five or ten stamens almost always more or less coherent. In the two other sub-families the flowers, though often irregular, are not papilionaceous, and the stamens are commonly wholly or nearly distinct.

Liliaceæ (the Lily Family).—This very large monocotyledonous group is now, with good reason, divided into the Smilaceæ, Melanthaceæ, and Convallariaceæ as distinct families. Nevertheless, since they agree, excepting the Smilaceæ, as to their poisonous properties, the entire group is here considered. The plants are mostly herbs, growing from bulbs or fleshy rhizomes. The juices are usually bland, though sometimes, as in the onions, acrid. Indeed, the poisonous species have mostly acrid juices. The leaves are parallel-veined and usually sheathing at the base. The flowers are regular and possess a six-parted perigone in two circles. The family is distinguished from the *Iridaceæ* by its six stamens, which are usually free, or nearly so, and distinct. The ovary is three-celled and usually superior, the styles distinct or united. The pod is three-celled, the seeds are numerous and highly albuminous. This family, like the *Iridaceæ*, is very liable to cause poisoning accidents, owing to the succulent and nutritious properties of its underground portions and even of its herbage. The nature of its poisonous constituents, both chemically and physiologically, is too varied for any general description.

Loganiaceæ (the Nux Vomica Family).—This is here referred to as being a small family, closely related to *Apocynaceæ* and almost equally poisonous. It is closely similar to that family in its structural characters, but lacks the milky juice and the annular stigma. Accidental poisoning is scarcely likely to occur from its members, except through their medicinal employment, and those subjects are fully treated elsewhere.

Oxalidaceæ (the Oxalis Family).—This small family, for a long time regarded as part of the *Geraniaceæ*, is readily recognized by the close similarity of all its members in foliage and flower structure to the genus Oxalis, represented by the wood sorrel, the sheep or lady's sorrels, common garden weeds, and by many species cultivated in the conservatory. The herbage of these plants contains oxalic acid and, like the meadow, field, or kitchen sorrel (*Rumex Acetosella* L.) has, when eaten in excess, caused serious or even fatal results, both to children and to adults.

Papaveraceæ (the Opium Family).—This small family is almost uniformly narcotic-poisonous, very many of its species being also irritant. Its constituents are pre-eminently alkaloidal, and these alkaloids are very numerous and varied in their mode of action. Owing to their commonly irritant properties these plants are not likely to cause poisoning, except through their medicinal use. They have commonly milky or colored juices, mostly compound or lobed leaves, perfect flowers (usually regular), their parts free and, except as to the carpels, distinct. The seeds are numerous and small.

Pinaceæ or *Coniferæ* (the Pine Family).—The large family of cone-bearing evergreens is too well known to require description. Its constituents and properties have been sufficiently indicated in our accounts of *Juniper*, *Savin*, *Turpentine*, etc. Similar constituents exist generally throughout the family. Poisoning is not likely to occur, owing to the acrid and excessively disagreeable character of the tissues.

Ranunculaceæ (the Buttercup Family).—This large family is distinguished by its alternate, exstipulate leaves, flowers which show neither adhesion nor cohesion in any of their parts, innate anthers, anatropous ovules, and the small embryo in fleshy albumen, taken in connection with the acrid juices. These acrid juices are commonly cutaneous and internal irritant poisons. Attempts to utilize them for blistering purposes have been made, but the blister is not readily controlled. A great number of the species contain, in addition, principles which, upon absorption, act as cardiac paralyzants, of which aconitine may be taken as the type.

Simarubaceæ (the Quassia Family).—The constituents and properties of these plants have been sufficiently discussed in connection with quassia and simaruba. Their consumption so as to cause poisoning is almost impossible, owing to their very bitter taste. A curious case of poisoning by Ailanthus is recorded below under "Poisonous Leaves."

Solanaceæ (the Potato Family).—A description of the characters of this highly narcotic family is not called for, since pretty much all of the species likely to cause poisoning have been already considered in connection with the drugs, Belladonna, Henbane, Stramonium, etc., or below in connection with Solanum.

Umbelliferæ (the Parsley Family.)—This very large family, although it yields many important edible products (carrot, parsnip, parsley, celery, angelica, etc.), contributes also such violent poisons as conium, cicuta, and œnanthe. Its species are very readily identified. They usually possess, especially as to the poisonous species, hollow stems, petioles which are dilated and sheathing at the base, leaves pinnately compound, usually decompound, as seen in celery and parsely, flowers in (usually compound) umbels, these flowers usually minute, with five superior calyx teeth, five epigynous petals and stamens and fruits having the general structure of the well-known conium, anise, coriander, fennel, etc.

Violaceæ (the Violet Family).—Although not at all likely to be consumed in poisonous quantities, except as overdoses of medicine, the violets should be remembered as containing one or more emetico-cathartic poisonous constituents, very similar to emetine, and long mistaken for it. The violets are so well known that no description of them appears called for.

Local Cutaneous Poisons.

Poisonous plants can be conveniently divided into those locally poisonous to the skin and those internally poisonous. The first-mentioned class will be first considered.

They represent all grades of irritation, from a mild and brief itching to a severe corrosion or a dangerous or even fatal inflammation. The milder of these groups can be accorded but the briefest mention. A large number of them produce no effect upon most persons, but have been at times recorded as irritating to certain individuals with a highly sensitive skin, or who are subjects of idiosyncrasy. Illustrations of this class are seen in the fresh herbage of *Veratrum*, in various species of *Cypripedium*, *Catalpa*, *Rhododendron*, and *Kalmia*, and in *Vanilla*. In a number of cases the nature of the poison has not been ascertained, and it is possible that it is due to the presence of animal or vegetable parasites, or other foreign bodies. Others, like the various nettles (*Urtica*, *Urticastrum* [*Laportea*] *Urera*, etc.) are regularly irritating, but the irritation is temporary, though often very painful, and unless complicated does not call for treatment. In the last-mentioned genus of tropical American shrubs the stinging hairs of the ordinary nettle are magnified into needle-like prickles, several inches in length, intensely poisonous, and causing severe inflammation when contact with them is extensive and violent. The nature of this poison and its treatment have not been investigated, though doubtless much the same as in the nettles. Very similar to the nettles are the stinging hairs upon the various