

his sorrows, the tenderest sympathies of his nature, which would most naturally shrink from observation, were all to be regulated by law. He was not allowed even to be happy in his own way. The government of the Incas was the mildest,—but the most searching of despotisms.

CHAPTER IV.

EDUCATION. — QUIPUS. — ASTRONOMY. — AGRICULTURE. —
AQUEDUCTS.—GUANO.—IMPORTANT ESCULENTS.

“SCIENCE was not intended for the people; but for those of generous blood. Persons of low degree are only puffed up by it, and rendered vain and arrogant. Neither should such meddle with the affairs of government; for this would bring high offices into disrepute, and cause detriment to the state.”¹ Such was the favorite maxim, often repeated, of Tupac Inca Yupanqui, one of the most renowned of the Peruvian sovereigns. It may seem strange that such a maxim should ever have been proclaimed in the New World, where popular institutions have been established on a more extensive scale than was ever before witnessed; where government rests wholly on the people; and education—at least, in the great northern division of the continent—is mainly directed to qualify the people for the duties of government. Yet this maxim was strictly conformable to the genius of the Peruvian monarchy, and may serve as a key to its habitual policy; since, while it watched with unwearied solicitude over its subjects, provided for their physical necessities, was mindful of their morals, and showed, throughout, the affectionate concern of a parent for his children, it yet regarded them only as

¹ “No es licito, que enseñen à los hijos de los Plebeios, las Ciencias, que pertenescen à los Generosos, y no mas; porque como Gente baja, no se eleven, y ensobervezcan, y menoscaben, y apoquen la Republica: bastales, que aprendan los Oficios de sus Padres; que el Mandar y Governar no es de Plebeios, que es hacer agravio al Oficio, y à la Republica, encomendarsela à Gente comun.” Garcilasso, Com. Real., Parte 1, lib. 8, cap. 8.

children, who were never to emerge from the state of pupilage, to act or to think for themselves, but whose whole duty was comprehended in the obligation of implicit obedience.

Such was the humiliating condition of the people under the Incas, while the numerous families of the blood royal enjoyed the benefit of all the light of education which the civilization of the country could afford; and, long after the Conquest, the spots continued to be pointed out where the seminaries had existed for their instruction. These were placed under the care of the *amautas*, or "wise men," who engrossed the scanty stock of science—if science it could be called—possessed by the Peruvians, and who were the sole teachers of youth. It was natural that the monarch should take a lively interest in the instruction of the young nobility, his own kindred. Several of the Peruvian princes are said to have built their palaces in the neighborhood of the schools, in order that they might the more easily visit them and listen to the lectures of the *amautas*, which they occasionally reinforced by a homily of their own.² In these schools, the royal pupils were instructed in all the different kinds of knowledge in which their teachers were versed, with especial reference to the stations they were to occupy in after-life. They studied the laws, and the principles of administering the government, in which many of them were to take part. They were initiated in the peculiar rites of their religion, most necessary to those who were to assume the sacerdotal functions. They learned also to emulate the achievements of their royal ancestors by listening to the chronicles compiled by the *amautas*. They were taught to speak their own dialect with purity and elegance; and they became acquainted with the mysterious science of

² *Ibid.*, Parte 1, lib. 7, cap. 10.

The descendant of the Incas notices the remains, visible in his day, of two of the palaces of his royal ancestors, which had been built in the vicinity of the schools, for more easy access to them.

the quipus, which supplied the Peruvians with the means of communicating their ideas to one another, and of transmitting them to future generations.³

The quipu was a cord about two feet long, composed of different colored threads tightly twisted together, from which a quantity of smaller threads were suspended in the manner of a fringe. The threads were of different colors and were tied into knots. The word *quipu*, indeed, signifies a knot. The colors denoted sensible objects; as, for instance, *white* represented *silver*, and *yellow*, *gold*. They sometimes also stood for abstract ideas. Thus, *white* signified *peace*, and *red*, *war*. But the quipus were chiefly used for arithmetical purposes. The knots served instead of ciphers, and could be combined in such a manner as to represent numbers to any amount they required. By means of these they went through their calculations with great rapidity, and the Spaniards who first visited the country bear testimony to their accuracy.⁴

Officers were established in each of the districts, who under the title of *quipucamayus*, or "keepers of the quipus," were required to furnish the government with information on various important matters. One had charge of the revenues, reported the quantity of raw material distributed among the laborers, the quality and quantity of the fabrics made from it, and the amount of stores, of various kinds, paid into the royal magazines. Another exhibited the register of births and deaths, the marriages, the number of those qualified to bear arms, and the like details in reference to the population of the kingdom. These returns were annually forwarded to the capital, where they were submitted to the inspection of officers acquainted with the art of deciphering these mystic records. The government was thus provided with a valuable mass

³ *Ibid.*, Parte 1, lib. 4, cap. 19.

⁴ *Conq. i Pob. del Piru*, MS.—Sarmiento, *Relacion*, MS., cap. 9.—Acosta, lib. 6, cap. 8.—Garcilasso, Parte 1, lib. 6, cap. 8.

of statistical information, and the skeins of many-colored threads, collected and carefully preserved, constituted what might be called the national archives.⁵

But, although the quipus sufficed for all the purposes of arithmetical computation demanded by the Peruvians, they were incompetent to represent the manifold ideas and images which are expressed by writing. Even here, however, the invention was not without its use. For, independently of the direct representation of simple objects, and even of abstract ideas, to a very limited extent, as above noticed, it afforded great help to the memory by way of association. The peculiar knot or color, in this way, suggested what it could not venture to represent; in the same manner—to borrow the homely illustration of an old writer—as the number of the Commandment calls to mind the Commandment itself. The quipus, thus used, might be regarded as the Peruvian system of mnemonics.

Annalists were appointed in each of the principal communities, whose business it was to record the most important events which occurred in them. Other functionaries of a higher character, usually the amautas, were intrusted with the history of the empire, and were selected to chronicle the great deeds of the reigning Inca, or of his

⁵ Ondegardo expresses his astonishment at the variety of objects embraced by these simple records, "hardly credible by one who had not seen them." "En aquella ciudad se hallaron muchos viejos oficiales antiguos del Inga, así de la religion, como del Gobierno, y otra cosa que no pudiera creer sino la viera, que por hilos y nudos se hallan figuradas las leyes, y estatutos así de lo uno como de lo otro, y las sucesiones de los Reyes y tiempo que governaron: y hallose lo que todo esto tenían a su cargo que no fue poco, y aun tube alguna claridad de los estatutos que en tiempo de cada uno se havian puesto." (Rel. Prim., MS.) (See also Sarmiento, Relacion, MS., cap. 9.—Acosta, lib. 6, cap. 8.—Garcilasso, Parte 1, lib. 6, cap. 8, 9.) A vestige of the quipus is still to be found in some parts of Peru, where the shepherds keep the tallies of the numerous flocks by means of this ancient arithmetic.

ancestors.⁶ The narrative, thus concocted, could be communicated only by oral tradition; but the quipus served the chronicler to arrange the incidents with method, and to refresh his memory. The story, once treasured up in the mind, was indelibly impressed there by frequent repetition. It was repeated by the amauta to his pupils, and in this way history, conveyed partly by oral tradition, and partly by arbitrary signs, was handed down from generation to generation, with sufficient discrepancy of details, but with a general conformity of outline to the truth.

The Peruvian quipus were, doubtless, a wretched substitute for that beautiful contrivance, the alphabet, which, employing a few simple characters as the representatives of sounds, instead of ideas, is able to convey the most delicate shades of thought that ever passed through the mind of man. The Peruvian invention, indeed, was far below that of the hieroglyphics, even below the rude picture-writing of the Aztecs; for the latter art, however incompetent to convey abstract ideas, could depict sensible objects with tolerable accuracy. It is evidence of the total ignorance in which the two nations remained of each other, that the Peruvians should have borrowed nothing of the hieroglyphical system of the Mexicans, and this, notwithstanding that the existence of the maguey plant, *agave*, in South America might have furnished them with the very material used by the Aztecs for the construction of their maps.⁷

It is impossible to contemplate without interest the struggles made by different nations, as they emerge from barbar-

⁶ *Ibid.*, ubi supra.

⁷ *Ibid.*, ubi supra.—Dec. de la Aud. Real., MS.—Sarmiento, Relacion, MS., cap. 9.

Yet the quipus must be allowed to bear some resemblance to the belts of wampum—made of colored beads strung together—in familiar use among the North American tribes, for commemorating treaties, and for other purposes.

ism, to supply themselves with some visible symbols of thought,—that mysterious agency by which the mind of the individual may be put in communication with the minds of a whole community. The want of such a symbol is itself the greatest impediment to the progress of civilization. For what is it but to imprison the thought, which has the elements of immortality, within the bosom of its author, or of the small circle who come in contact with him, instead of sending it abroad to give light to thousands, and to generations yet unborn! Not only is such a symbol an essential element of civilization, but it may be assumed as the very criterion of civilization; for the intellectual advancement of a people will keep pace pretty nearly with its faculties for intellectual communication.

Yet we must be careful not to underrate the real value of the Peruvian system; nor to suppose that the quipus were as awkward an instrument, in the hand of a practised native, as they would be in ours. We know the effect of habit in all mechanical operations, and the Spaniards bear constant testimony to the adroitness and accuracy of the Peruvians in this. Their skill is not more surprising than the facility with which habit enables us to master the contents of a printed page, comprehending thousands of separate characters, by a single glance, as it were, though each character must require a distinct recognition by the eye, and that, too, without breaking the chain of thought in the reader's mind. We must not hold the invention of the quipus too lightly, when we reflect that they supplied the means of calculation demanded for the affairs of a great nation, and that, however insufficient, they afforded no little help to what aspired to the credit of literary composition.

The office of recording the national annals was not wholly confined to the amautas. It was assumed in part by the *haravees*, or poets, who selected the most brilliant incidents for their songs or ballads, which were chanted at

the royal festivals and at the table of the Inca.⁸ In this manner, a body of traditional minstrelsy grew up, like the British and Spanish ballad poetry, by means of which the name of many a rude chieftain, that might have perished for want of a chronicler, has been borne down the tide of rustic melody to later generations.

Yet history may be thought not to gain much by this alliance with poetry; for the domain of the poet extends over an ideal realm peopled with the shadowy forms of fancy, that bear little resemblance to the rude realities of life. The Peruvian annals may be deemed to show somewhat of the effects of this union, since there is a tinge of the marvellous spread over them down to the very latest period, which, like a mist before the reader's eye, makes it difficult to distinguish between fact and fiction.

The poet found a convenient instrument for his purposes in the beautiful Quichua dialect. We have already seen the extraordinary measures taken by the Incas for propagating their language throughout their empire. Thus naturalized in the remotest provinces, it became enriched by a variety of exotic words and idioms, which, under the influence of the Court and of poetic culture, if I may so express myself, was gradually blended, like some finished mosaic made up of coarse and disjointed materials, into one harmonious whole. The Quichua became the most comprehensive and various, as well as the most elegant, of the South American dialects.⁹

⁸ Dec. de la Aud. Real., MS.—Garcilasso, Com. Real., Parte 1, lib. 2, cap. 27.

The word *haravec* signified "inventor" or "finder;" and in his title, as well as in his functions, the minstrel-poet may remind us of the Norman *trouvére*. Garcilasso has translated one of the little lyrical pieces of his countrymen. It is light and lively; but one short specimen affords no basis for general criticism.

⁹ Ondegardo, Rel. Prim., MS.

Sarmiento justly laments that his countrymen should have suffered this dialect, which might have proved so serviceable in their inter-

Besides the compositions already noticed, the Peruvians, it is said, showed some talent for theatrical exhibitions; not those barren pantomimes which, addressed simply to the eye, have formed the amusement of more than one rude nation. The Peruvian pieces aspired to the rank of dramatic compositions, sustained by character and dialogue, founded sometimes on themes of tragic interest, and at others on such as, from their light and social character, belong to comedy.¹⁰ Of the execution of these pieces we have now no means of judging. It was probably rude enough, as befitted an unformed people. But, whatever may have been the execution, the mere conception of such an amusement is a proof of refinement that honorably distinguishes the Peruvian from the other American races, whose pastime was war, or the ferocious sports that reflect the image of it.

The intellectual character of the Peruvians, indeed, seems to have been marked rather by a tendency to refinement than by those hardier qualities which insure success in the severer walks of science. In these they were behind several of the semi-civilized nations of the New World. They had course with the motley tribes of the empire, to fall so much out of use as it has done. "Y con tanto digo que fué harto beneficio para los Españoles haver esta lengua pues podian con ella andar por todas partes en algunas de las quales ya se vá perdiendo." *Relacion*, MS., cap. 21.

According to Velasco, the Incas, on arriving with their conquering legions at Quito, were astonished to find a dialect of the Quichua spoken there, although it was unknown over much of the intermediate country; a singular fact, if true. (*Hist. de Quito*, tom. I. p. 185.) The author, a native of that country, had access to some rare sources of information; and his curious volumes show an intimate analogy between the science and social institutions of the people of Quito and Peru. Yet his book betrays an obvious anxiety to set the pretensions of his own country in the most imposing point of view, and he frequently hazards assertions with a confidence that is not well calculated to secure that of his readers.

¹⁰ Garcilasso, *Com. Real.*, ubi supra.

some acquaintance with geography, so far as related to their own empire, which was indeed extensive; and they constructed maps with lines raised on them to denote the boundaries and localities, on a similar principle with those formerly used by the blind. In astronomy, they appear to have made but moderate proficiency. They divided the year into twelve lunar months, each of which, having its own name, was distinguished by its appropriate festival.¹¹ They had, also, weeks; but of what length, whether of seven, nine, or ten days, is uncertain. As their lunar year would necessarily fall short of the true time, they rectified their calendar by solar observations made by means of a number of cylindrical columns raised on the high lands round Cuzco, which served them for taking azimuths; and, by measuring their shadows, they ascertained the exact times of the solstices. The period of the equinoxes they determined by the help of a solitary pillar, or gnomon, placed in the centre of a circle, which was described in the area of the great temple, and traversed by a diameter that was drawn from east to west. When the shadows were scarcely visible under the noontide rays of the sun, they said that "the god sat with all his light upon the column."¹² Quito, which lay immediately under the equator, where the vertical rays of the sun threw no shadow at noon, was held in especial veneration as the favored abode of the great deity. The period of the equinoxes was celebrated by public rejoicings. The pillar was crowned by the golden chair of the Sun, and, both

¹¹ Ondegardo, *Rel. Prim.*, MS.

Fernandez, who differs from most authorities in dating the commencement of the year from June, gives the names of the several months, with their appropriate occupations. *Hist. del Peru*, Parte 2, lib. 3, cap. 10.

¹² Garcilasso, *Com. Real.*, Parte 1, lib. 2. cap. 22-26.

The Spanish conquerors threw down these pillars, as savoring of idolatry in the Indians. Which of the two were best entitled to the name of barbarians?

then and at the solstices, the columns were hung with garlands, and offerings of flowers and fruits were made, while high festival was kept throughout the empire. By these periods the Peruvians regulated their religious rites and ceremonial, and prescribed the nature of their agricultural labors. The year itself took its departure from the date of the winter solstice.¹³

This meagre account embraces nearly all that has come down to us of Peruvian astronomy. It may seem strange that a nation, which had proceeded thus far in its observations, should have gone no further; and that, notwithstanding its general advance in civilization, it should in this science have fallen so far short, not only of the Mexicans, but of the Muyscas, inhabiting the same elevated regions of the great southern plateau with themselves. These latter regulated their calendar on the same general plan of cycles and periodical series as the Aztecs, approaching yet nearer to the system pursued by the people of Asia.¹⁴

It might have been expected that the Incas, the boasted children of the Sun, would have made a particular study

¹³ Betanzos, *Nar. de los Ingas*, MS., cap. 16.—Sarmiento, *Relacion*, MS., cap. 23.—Acosta, lib. 6, cap. 3.

The most celebrated gnomon in Europe, that raised on the dome of the metropolitan church of Florence, was erected by the famous Toscanelli,—for the purpose of determining the solstices, and regulating the festivals of the Church,—about the year 1468; perhaps at no very distant date from that of the similar astronomical contrivance of the American Indian. See Tiraboschi, *Historia della Letteratura Italiana*, tom. VI. lib. 2, cap. 2, sec. 38.

¹⁴ A tolerably meagre account—yet as full, probably, as authorities could warrant—of this interesting people has been given by Piedrahita, Bishop of Panamá, in the first two Books of his *Historia General de las Conquistas del Nuevo Regno de Granada*, (Madrid, 1688.)—M. de Humboldt was fortunate in obtaining a MS., composed by a Spanish ecclesiastic resident in Santa Fé de Bogota, in relation to the Muysca calendar, of which the Prussian philosopher has given a large and luminous analysis. *Vues des Cordillères*, p. 244.

of the phenomena of the heavens, and have constructed a calendar on principles as scientific as that of their semi-civilized neighbors. One historian, indeed, assures us that they threw their years into cycles of ten, a hundred, and a thousand years, and that by these cycles they regulated their chronology.¹⁵ But this assertion—not improbable in itself—rests on a writer but little gifted with the spirit of criticism, and is counterbalanced by the silence of every higher and earlier authority, as well as by the absence of any monument, like those found among other American nations, to attest the existence of such a calendar. The inferiority of the Peruvians may be, perhaps, in part explained by the fact of their priesthood being drawn exclusively from the body of the Incas, a privileged order of nobility, who had no need, by the assumption of superior learning, to fence themselves round from the approaches of the vulgar. The little true science possessed by the Aztec priest supplied him with a key to unlock the mysteries of the heavens, and the false system of astrology which he built upon it gave him credit as a being who had something of divinity in his own nature. But the Inca noble was divine by birth. The illusory study of astrology, so captivating to the unenlightened mind, engaged no share of his attention. The only persons in Peru, who claimed the power of reading the mysterious future, were the diviners, men who, combining with their pretensions some skill in the healing art, resembled the conjurors found among many of the Indian tribes. But the office was held in little repute, except among the lower classes, and was abandoned to those

¹⁵ Montesinos, *Mem. Antiguas*, MS., lib. 2, cap. 7.

“Renovó la computacion de los tiempos, que se iba perdiendo, y se contaron en su Reynado los años por 365 días y seis horas; á los años añadió decadas de diez años, á cada diez decadas una centuria de 100 años, y á cada diez centurias una capachoata ó Jutiphuacan, que son 1000 años, que quiere decir el grande año del Sol; así contaban los siglos y los sucesos memorables de sus Reyes.” *Ibid.*, loc. cit.