



THE BEGINNINGS
OF WRITING

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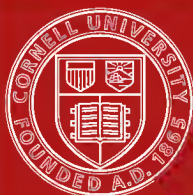
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An Ojibwa scribe.

The Anthropological Series

EDITED BY PROFESSOR FREDERICK STARR
OF THE UNIVERSITY OF CHICAGO

THE BEGINNINGS OF WRITING

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THE
BEGINNINGS OF WRITING

BY
WALTER JAMES HOFFMAN, M. D.
OF THE BUREAU OF AMERICAN ETHNOLOGY, SMITHSONIAN INSTITUTION

WITH AN INTRODUCTION BY
PROF. FREDERICK STARR



NEW YORK
D. APPLETON AND COMPANY

1895

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EDITOR'S INTRODUCTION.

No single achievement of man is more important than the art of writing. The problem presented was, How may the thought of to-day be carried over to to-morrow; how may knowledge of the deeds of the present be transmitted to coming generations in visible, comprehensible form? Primitive man began to solve the problem. At first he used tangible reminders, like quipus and wampum belts. Picture writing was developed with pictures, part pictures, and symbols to represent ideas. No matter how highly developed, the characters in pictography are always ideograms—representations of ideas. Later, the character, which had been a picture representing an idea, became a phonogram representing a sound. Phonograms may represent whole words, syllables, or the simplest sound

elements. Such as represent simple sound elements may be called letters, and a series of these representing all the simple sounds of any language is an alphabet. From reminders, through picture writing, to phonetic writing with an alphabet, such is the course of the development.

Dr. Hoffman, in *The Beginnings of Writing*, presents the first steps in this development, especially as they are shown among North American tribes. Our native peoples made much use of reminders; they drew truly expressive pictures; they developed complicated systems of pictography, adequate even to the writing of real books; some peoples of Mexico and Central America were passing from the use of ideograms to phonograms. This transition period is most interesting to the student.

Our author is peculiarly qualified for writing this book. He is one of the most enthusiastic and successful workers in American ethnology. Born in 1846, in Pennsylvania, he became a practising physician there in 1866. In 1870 he went to Europe as surgeon of the Prussian army in

the Franco-Prussian War. Returning to this country, he accompanied Lieutenant Wheeler's expedition into Nevada and Arizona in 1871. In 1872 he was surgeon at a Dakota post, where he was able to study Siouan life. Later, in connection with Professor Hayden's Survey and in the Bureau of Ethnology, he continued field work and study among our Indian tribes. With indefatigable zeal and energy he has made investigations into American linguistics, pictography, and religions, and has published a number of important contributions to our knowledge in these directions. Much of the materials used by Colonel Mallery in his reports on pictography were collected by Dr. Hoffman. From such a worker we are justified in expecting a valuable and interesting work.

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BEGINNINGS OF WRITING.

CHAPTER I.

PICTOGRAPHY.

It is more than probable that primitive man, in attempting to record and transmit graphically his thoughts, selected for pictorial delineation such objects within his environment as were most frequently encountered in his struggle for existence. The simple representation of animals or birds would thus be made to indicate success in hunting; or, depicted upon a conspicuous rock, notify others that game so indicated was to be found in that locality. In time, by extending his art, he introduced objects of actual or imaginary form; such as relate to the celestial bodies, mythic beings, atmospheric and terrestrial phenomena,

demons of disease, and the deities that produce the rain, snow, and the seasons.

Having attained this stage in the objective representation of ideas, some of the characters depicted were made so as to represent motion, condition, or special attributes, and the attempted reproduction of gesture signs still further aided in the suggestion of subjective ideas.

The next advancement appears in the form of rebus or image-writing (designated by Dr. Brinton as ikonomatic), in which several objects were combined, the initial or individual sound of each of which was made to suggest a complete word of itself, and perhaps in no wise having special relation to either of the component elements of which it consisted. After establishing a phonetic system, the characters by further conventionalising became phonograms or letters.

In the light of recent investigation it seems but a short stride in passing from the rudely drawn object to the finished alphabetic character, but the interval of time taken for the transformation is immense. At the dawn of

history Egypt was already possessed of a systematic hieroglyphic system, and it was only during the Shang dynasty that the Chinese still had recourse to objective delineation sufficient to show the origin of some of their more modern characters. Recent philologic research proves that the origin of various Oriental characters and alphabets must be sought in the primitive objective forms from which they were evolved.

It has been affirmed that the discovery and adaptation of alphabetic writing was the period of transition from barbarism to civilisation. This is specially true as pertains to a people by whom such advancement was made independently, and without undue influence from more cultured neighbours. As various nations and tribes pass through practically similar stages of intellectual development, however remote from and independent of one another, it is to be perceived that the several stages of the pictorial, syllabic, and alphabetic representations of thought and sound were not contemporaneous, but were developed in different portions of the world at various periods of time.

Even in America, which presents the most interesting field for the scientific investigation of pictography, and where different systems prevailed among various tribes, it is difficult to conceive what degree of advancement might or might not have been attained during the interval of time that has elapsed since the arrival of the first European conquerors up to the present day. The wholesale destruction, by fanatics, of Mexican records, is well known; and it is now extremely difficult to obtain assistance from the natives in attempting interpretations of the few remaining pictorial codices and other records, although specialists in Mexican literature are making gratifying progress in that direction, and from their researches it is ascertained that much of the history is becoming more and more intelligible. It is found, too, that ikonomatic writing prevailed to great extent, particularly as relates to personal and geographic names. Much of the literature pertains to chronology and cult practices, in both of which symbolism was extensively resorted to.

Among the Mayas of Yucatan, a people

whose literature shared a fate similar to that of their neighbours, evidence of phoneticism has been detected ; but as only four of their books are available in printed form, scholars have had but slight opportunity for careful research, and for determining to what extent this prevailed.

Picture writing, which survives among some of the Indian tribes north of Mexico, presents several typical forms of development. Several reasons may be assigned for this, foremost among which is varying artistic ability ; next, the subject of the record, whether relating to the chase or to social customs in which zoömorphic or other familiar forms predominate ; then, again, to medico-religious practices, as portrayed by members of cult societies ; lastly, fidelity of reproduction of the object intended, is frequently limited or modified by the nature of the materials used.

A comparison of pictographs apparently antedating historic times (or such as are now unintelligible to the modern Indians within whose territory they may occur) presents similar differences in graphic execution, and the class of

subjects portrayed, as do those of more recent date. The numbers and general resemblance of various characters in pictographs within certain areas are often sufficiently persistent to suggest the existence of a type of artistic execution, which type, in several instances, is found to survive even at the present day. By such means we are enabled to trace, with a certain degree of accuracy, the pictorial relationship between the old records and those of modern times; and consequently the linguistic family, of which the supposed authors of the former were tribal members. The geographical distribution of such types assists us, furthermore, in identifying to a certain extent the former distribution of linguistic stocks or families, over areas now unoccupied by tribes belonging to those families. Such remains are found generally upon rocks, the enduring qualities of the stone being better able to withstand the effects of time; although at present we find pictographs of ancient date which are recorded on materials of a nature readily liable to destruction or decay.

CHAPTER II.

PICTOGRAPHS ON STONE—GEOGRAPHICAL DISTRIBUTION.

UNITED STATES AND CANADA.

IN presenting a brief *résumé* of the better-known petroglyphs in America and in foreign localities, it has been deemed appropriate to include therewith painted records on stone, as such naturally come under the general designation of pictographs.

Throughout the area of country formerly occupied by the various tribes constituting the Algonkian linguistic family—extending from Hudson Bay to South Carolina, and from Nova Scotia to the Rocky Mountains—are numerous petroglyphs presenting similarities sufficient to suggest pictorial relationship. As these repetitions of design occur within the so-called Algonkin area, and are conspicuously absent in

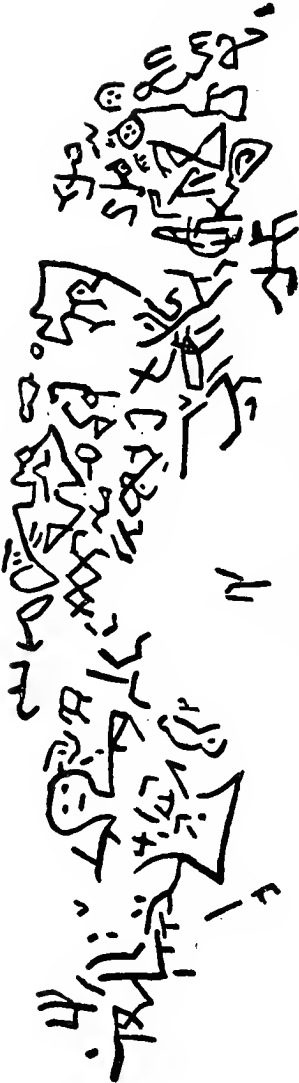


FIG. 1.—Inscription on Dighton Rock, Mass.

other areas, this type of artistic delineation may be designated the Algonquian type.

The northernmost examples occur in Nova Scotia ; and, apart from several unimportant localities southeastward, the next and perhaps best-known petroglyph, known as Dighton Rock, is that in the Taunton River, near the town of Dighton, Massachusetts. The large boulder upon which the petroglyphs were depicted is but a short distance from the shore, but, owing to gradual erosion

and the brushing off of mud and sand by visitors, the figures are becoming indistinct (Fig. 1).

This was at one time firmly believed to have been the work of the Northmen,* and a large number of illustrations have been published at various times; the most interesting collection, however, being that in Rafn's *Antiquitates Americanæ*, of which the oldest copy bears the date of 1680; this was made by Dr. Danforth. Cotton Mather furnished the next drawing, but there is scarcely any resemblance between the two. Dr. Greenwood's copy of 1730 is different from either of the preceding. In 1768 Mr. Stephen Sewell made a drawing of the record, which was followed twenty years later by another made by James Winthrop. Since then, at various intervals, drawings have been made and published, but an examination of the entire series clearly indicates that in some instances there was either careless drawing or

* The stone had been the property of the Royal Society of Northern Antiquaries, but was recently presented by that body to the authorities of Taunton, Mass.—Personal letters from Count de Sponneck, Danish minister at Washington, D. C.

the work of persons not possessed of artistic ability.

An interesting petroglyph, now rapidly going to destruction, is that locally known as the "Indian God Rock." The sculpturings are upon the face of an immense boulder on the bank of the Alleghany River, seven miles south of Franklin, Pa. Among the finest examples of deep sculpturing are those in the Susquehanna River, near Conowingo, Md. The figures, as well as all of the preceding, resemble the Algonkian type, and are unusually deep, being from three fourths to one and a fourth inch in depth, and present a polished, smooth surface, as if finished by rubbing with fine sand, after the sculptured portions had been completed. The boulders upon which the petroglyphs occur are in a shallow part of the river, and may have been on the route of an ancient aboriginal crossing.

Farther up the river, at Safe Harbor, Pa., is another series of petroglyphs of a more distinctly Algonkian type, resembling, in fact, characters found among the birch-bark records

of living Ojibwa Indians. The principal markings consist of footprints of the deer, turkey, bear, and outlines of men and birds, chief among which is the eagle, though drawn to represent the Algonkian deity the Thunder-bird. These boulders are located in a portion of the river which was until recently the head waters for the resort of shad ; and as the petroglyphs partake rather of a hunting record, it is probable that the Indians formerly congregated at this point to fish ; this belief is further strengthened by the fact that the river at this point would be most unsuitable for crossing.

Petroglyphs of similar type occur also throughout the Alleghany Mountains as far south as the Kanawha River, but beyond that point are found painted records of another type.

It is worthy of note, that in nearly every instance where Algonkian petroglyphs occur they are inscribed upon rocks and boulders low down on the shore of water courses, and even upon rocks situated in the water ; whereas the coloured pictographs of the southern Atlantic are generally upon high or conspicuous cliffs

or rocks, where in some instances they may be observed at a great distance. The local character of the country, in the latter area, may be the primary reason for the selection of such sites.

Other Algonkian petroglyphs occur quite abundantly throughout Ohio, and at intervals towards the west and northwest, as far as the Wind River Mountains of Wyoming; those in the latter region having been identified as the work of the Blackfeet Indians, although this tribe has been for a long time located in Montana.

From the Rio Grande River, in New Mexico, westward to the Pacific Ocean, and northward throughout the several States as far as Idaho, one finds great numbers of sculptured and painted records of the highest interest. Many of those in New Mexico and Arizona are apparently the work of the Shinumo Indians; but the greater number, covering the cliffs and walls of the tributary cañons of the Colorado River, appear much older, and are unrecognisable to the Indians of the present day.

In California, on the western slope of the Sierra Nevada, and at several localities in the Santa Ynez Mountains, near Santa Barbara, are various coloured pictographs of apparently different periods of time ; but among the latter are some that have been made since the arrival of Europeans, as is indicated by the portrayal of the figure of a horse carrying a bale of goods.

At the Tule Indian Reservation, among the western foothills of the Sierra Nevada, occurs what is without doubt the largest and most interesting painted record yet found (Fig. 2). The chief interest lies in the fact that quite a number of the outlines of human figures are depicted either in the act of making gesture signs, or in expressive postures, which give us an interpretation of the subject, as intended by the authors. This record will be more fully described and analysed in another chapter.

In Owen's Valley, on the eastern slope of the Sierra Nevada, scattered over a sandy, arid desert for a distance of thirty miles, are numerous petroglyphs upon immense basaltic boul-

ders. The characters consist chiefly of circles, concentric rings, dumb-bell-shaped figures, and circles with almost every variety of interior

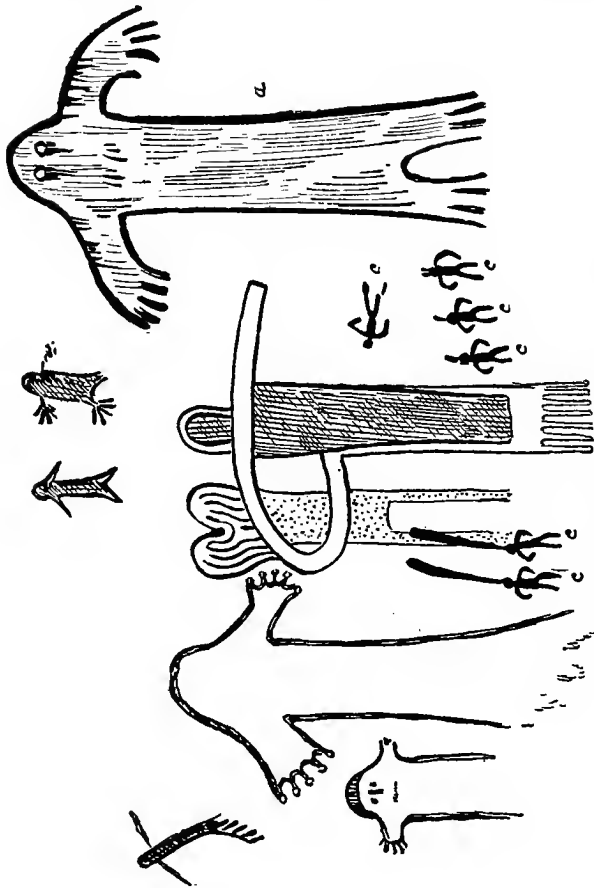


FIG. 2.—Pictograph at Tule Reservation, Cal.

decoration, resembling figures found in the country of the Shinumo (Moqui) and Tusayan Indians, where they are usually drawn to designate dancing masks. Animal forms and foot-prints also occur, similar in many respects to those found among the petroglyphs occurring in New Mexico, Nevada, and Idaho.

This group of petroglyphs is the most elaborately sculptured of any yet examined or reported within the United States. The figures, as a rule, appear as if cut out by means of a gouge, and have a depth of from half an inch to one and a half inch, with corresponding width, the surfaces smooth, appearing to have been rubbed with fine sand.

The Indians now occupying the adjacent less arid regions pretend to know nothing of the history or import of the petroglyphs, nor of the people who made them ; but as they are located within the area occupied by Shoshonian tribes (and because some tribes of this linguistic family continue the art of delineation of various figures in textile fabrics and on pottery, similar to some of those among the petroglyphs), the group

has, for convenience, been classed with the Shoshonian type.

On the coast of southeastern Alaska are a few pecked records on stone, which indicate the outline of animate forms, such as occur among the slate and wood carvings of the Tshilkat and Haida Indians. These petroglyphs are without doubt of recent workmanship, and are the only ones thus far reported from that region.

MEXICO AND CENTRAL AMERICA.

But few petroglyphs have been reported from Mexico and Central America. Coloured pictographs, upon the interior walls of temples, are mentioned as having been found in Yucatan, and these will be referred to in connection with the codices—the religious and chronologic records on maguey paper.

Dr. Bransford * furnishes some illustrations of sculpturings in Nicaragua, representing animal forms, while mention is made, also, of

* *Archæological Researches in Nicaragua*, Smithsonian Contributions to Knowledge, No. 383, Washington, 1883.

petroglyphs, on the Isthmus, which resemble those of British Guiana.*

SOUTH AMERICA.

The sculpturings described from British Guiana are generally found along water courses, and are supposed to have aided travellers in selecting proper channels. They consist chiefly of human heads and faces, some with lines radiating therefrom ; outlines of what appear to be monkeys, rings, and concentric circles. Many of the latter appear very similar to some found in the Shoshonian area of the United States, as well as to the petroglyphs of the Canary Islands.

Dr. Ladisláu Netto, of Rio de Janeiro, presents numerous illustrations of petroglyphs found in Brazil,† some bearing evidence of having been sculptured since the advent of Europeans. An attempted interpretation is given,

* Everhard F. im Thurn, *Among the Indians of Guiana*, London, 1883.

† *Investigações sobre a Archeologia Brasileira*. In *Archivos do Museu Nacional do Rio de Janeiro*, vi, 1885.

and comparisons made between some figures and conventionalised forms of the human face as found upon ancient pottery.

CANARY ISLANDS AND AFRICA.

A great number of petroglyphs found in the Canary Islands* are of peculiar interest because of their resemblance to many of those in Owen's Valley, California. The coincidence of the frequent reproduction of types is remarkable. The prevailing forms consist of every variety of combination of circles and concentric rings; interior divisions of circles by various arrangements of straight and zigzag lines; and various dumb-bell forms, etc.

In the desert portion of southern Algeria, at Tyout and Moghar, one finds a number of glyphs representing men and animals; † and in the southern portion of Africa, in the country of the Hottentots and Bushmen, are found a num-

* S. Berthelot, in *Bulletin de la Société de Géographie de Paris*, sixième ser., ix, 1875.

† *Revue Géographique Internationale*, Paris, 1884.

ber of coloured pictographs, representing hunting scenes.*

The monumental hieroglyphics of Egypt demand notice, not only because that system is one of the oldest, but because it is one of the most elaborate and advanced. The glyphs, made in *intaglio*, *relievo*, and *intaglio-relievo*, were divided into two classes, pure and linear; the former being a pure and distinct objective portrayal, the latter a reduction of the former, so that although there is some abbreviation and conventionalising, still not sufficient to lose entirely the character of its prototype. The hieroglyphs are arranged in vertical columns and horizontal lines—from left to right, right to left—beginning from that direction towards which the heads of the animals are pointed. Exceptions occur, however.

The earliest inscription extant was erected by Sent, “a king of the second dynasty, to the memory of Shera, who appears to have been

* Richard Andree in *Mittheilungen der Anthropologischen Gesellschaft in Wien*, xvii, 1887. Emil Holub, *Journal Anthropological Institute Great Britain and Ireland*, x, London, 1880.

his grandson. According to M. Mariette, King Sent must have lived about the year 4700 B. C." [Brugsch places the date about 4000 A. C.], and it is shown by Dr. Taylor* that even this record of sixty or seventy centuries ago presents conclusive evidence that "hieroglyphic writing was already an ancient graphic system, with long ages of previous development stretching out behind it, into a distant past of almost inconceivable remoteness."

The last monumental hieroglyphic date, according to Gliddon, was recorded A. D. 216.

Hieroglyphic writing occurs also upon papyrus and linen, but of this particular mention will be made elsewhere.

ASIA AND EUROPE.

Strahlenberg reported petroglyphs from the Yenisei River, Siberia,† and numerous references are made by various travellers and au-

* Isaac Taylor, *Hist. of Alphabets*, i, London, 1883, 56, 57.

† Philip John von Strahlenberg, *An Historico-Geographical Description of Russia, Siberia, and Great Tartary*, London, 1738, 2 vols. 4to.

thors to sculpturings occurring in Scandinavia, Scotland, and the north of England, Spain, and some of the mountain portions of central Europe.

The Hittite hieroglyphs found on stones at Hamath, at Aleppo, and on monuments in various parts of Asia Minor and Syria, present characters in which an affinity to the Cypriote syllabary is discovered. The Hittite glyphs consist of the portrayal of various animate and inanimate forms, and are arranged, like the early Greek, to read from right to left, left to right, and the words read vertically in syllables in the line. The lines are read from that side towards which the faces are directed.

The Hittite characters are explained, in part, by the Cypriote syllabic characters, and, according to Major Conder, there are even some similarities in the primitive forms of the Chinese.*

* Journal of Transactions of the Victoria Institute, xxiv.

CHAPTER III.

PICTOGRAPHS ON MATERIALS OTHER THAN STONE.

IVORY, BONE, AND SHELL.

THE Innuít, or Eskimo, of Alaska, prepare pieces of walrus ivory for drill bows, upon the smooth sides of which they incise various characters, representing habitations, men, animals, fish, and other forms, in order to present graphically hunting expeditions and various social and religious practices. These characters are generally small, but they evince a degree of artistic execution not surpassed by any of the tribes of Indians north of Mexico. The incisions are made by means of a sharp-pointed piece of iron or steel, the lines frequently being stained by having some dark substance rubbed into them, thus leaving them coloured so as to

resemble rude etchings—by which name they are here designated. Fig. 3 represents a portion of an Innuït drill bow, the explanation of the characters upon which will be given further on.

Pieces of bone are sometimes so utilised, but probably only when ivory is not to be had.



FIG. 3.—Etching on Innuït Drill Bow.

The most interesting fact in connection with these etchings is the frequent evidence of attempts made at the reproduction of gesture signs, clearly indicating ideas which it would be impossible to record otherwise. In this manner the interpretation of many of the etchings becomes intelligible, even without the assistance of the author's explanation.

The only noteworthy example of the use of bone by the prairie tribes of Indians is that in which pictographs are drawn upon the shoulder-blades of the buffalo and other large animals. This is done chiefly when Indians

are on the hunt, and wish to leave for others of their band some intimation of the course of travel. The illustration in Fig. 4 is a reproduction of a Hidatsa drawing made to intimate

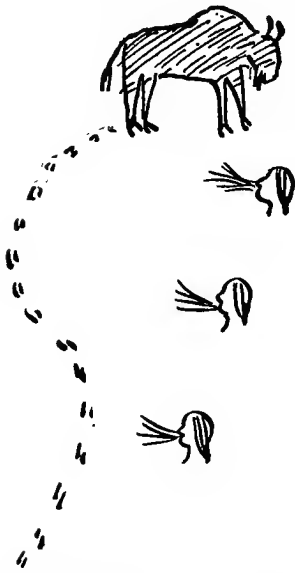


FIG. 4.—Hidatsa Pictograph on a Buffalo Shoulder-blade.

to others the object of a hunting trip and of its result. The explanation of the characters is given in connection with *speech*, under the caption of "Gesture Signs and Attitudes."

The use of shell, in the manufacture of wampum is well known. Wampum records are purely mnemonic, and were used at treaties and tribal councils. Shells were used also in the manufacture of gorgets, or breast ornaments; the most elaborate examples being found in the mounds of the lower Mississippi Val-

ley. Some of the carved shells from this region resemble Mexican workmanship. Another interesting example of shell work is the ornamented buckskin mantle supposed to have been the property of Powhatan. The designs upon the skin are composed of small shells, secured by means of fibre or sinew.

BIRCH-BARK RECORDS.

Exclusive of the Maya and Nahuatl codices, the most interesting pictographic records in America are those of the Ojibwa Indians. Some of these birch-bark scrolls are claimed to have been in their possession since their tribal disintegration at La Pointe, Minn., several centuries ago; certain it is that the language employed (in the interpretation of the mnemonic and other characters upon the records) is of an archaic form, and is not entirely intelligible either to the modern Indian or to the shamans professing acquaintance therewith.

The practice of recording mnemonic characters, and of making various records connected with cult ceremonies, war, love, and hunting,

has not been entirely discontinued. Of the several varieties of records made, nearly all are the work of members of cult societies. The largest specimens are made by securing together an indefinite number of pieces of bark. These specimens pertain to the Ojibwa cosmogony and genesis of mankind as well as to the several degrees of the so-called "Grand Medicine Society." The next in importance are the mnemonic songs used by the priests or shamans at ceremonials, incantations, the exorcism of demons, and at the initiation of new members into the above-named so-

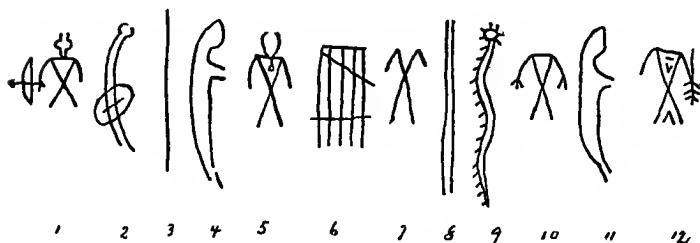


FIG. 5.—Mnemonic Song of an Ojibwa Medicine-man.

ciety. The other classes, as already intimated, relate to war, hunting, and love. Fig. 5 is a reproduction of the type of characters employed in mnemonic songs, and incised upon birch bark.

(See explanation and interpretation on later page.)

The mnemonic songs present the most interesting pictographs, and evince the highest degree of graphic skill attained by the Ojibwa. Almost every form of simple or complex ideograms is here portrayed, presenting types of simple objective delineation as well as abstract ideas and various attributes, thought to be almost beyond the range of portrayal, without the aid of a more advanced method of writing. The most curious fact, however, and one of the highest value in the study and interpretation of these pictographs, is the evidence of the use of what may (for want of a more appropriate designation) be termed determinatives. In the Egyptian and other Oriental systems both ideograms and phonograms were used simultaneously, and the need of determinatives became necessary in connection with certain classes of words. The Ojibwa, however, had at no time reached that advancement in the graphic art; and these characters, taking the part of determinatives, are found thus far to have been employed only in

designating objects pertaining to spiritual, supernatural, and medical attributes and powers. This was the beginning of a new departure in pictography, and it is but reasonable to presume that, had it not been arrested by contact with civilisation, it might soon have become more highly evolved, and finally reached the phonetic stage.

Of great interest also is the frequent occurrence of the portrayal of the human figure in the attitude of making gesture signs, in which respect there is also considerable resemblance to many of the characters of the Egyptians and to the ancient Chinese.

Birch bark is used for writing also in Cashmere, as has been abundantly observed by the Oriental traveller Mr. F. Jagor,* who has observed also in India and elsewhere the use of palm and other similar leaves. The usual method is to inscribe the characters with a finely pointed style of steel or other hard substance ;

* Remarks made to the present writer during a recent conversation with Mr. Jagor.

the writing is afterwards rubbed over with a composition of grease and powdered charcoal, similar to rubbing the ink upon an engraved plate. By this means the indentations become distinctly visible.

WOODEN TABLETS OF THE EASTER ISLANDS AND OF EGYPT.

The natives of the Easter Islands were possessed of a system of elaborate picture writing. Pieces of hard wood from four to six inches in length and half as broad were prepared by making parallel shallow grooves, in which the delicate outlines of human figures, animate forms, and plants were incised. The ridges between the grooves prevented the figures from becoming defaced by friction. The most interesting point in connection with these records is, that the initial character is at the lower left-hand corner, the succeeding ones running towards the right side, at the end of which the specimen must be turned upside down, and the reading continued until the end is reached, when the record is again held as at the beginning. This,

then, is in the style of the ancient Greek *boustrophedon*.

Wooden tablets were used by the ancient Egyptians, inscriptions being made by means of black and red colours ; but such remains are of rare occurrence on account of the destructibility of the material.

MAGUEY PAPER OF THE MAYA AND NAHUATL.

The pictorial records or codices of Yucatan and Mexico were drawn upon fibrous paper, made from the leaves of the maguey plant. As already stated, but four of the known Maya codices have been published. The Mexican material is more extensive, and the records are accessible to the student. The books of the Mayas were upon paper made of vegetable fibre and doubled into folds, the writing running from side to side as they were folded. These folds were enclosed in broad covers, which were sometimes decorated.

It is a recognised fact that the ancient Mexicans had advanced beyond the mere portrayal of objects, and that apart from making portions of

their records intelligible (by the attempted reproduction of gesture signs and pantomime), evidence of a system of writing is recognised which stands apparently between the ideographic and purely phonetic systems. This system is designated by Dr. Brinton as *ikonomatic*, or "image writing." In this the objects employed to represent a complex word or character, each furnishes its first syllable, or more, to suggest the sound required for the complex character, and may have no other relation to the general result.

Some of the codices present interesting pictorial histories of industries, social customs, pursuits, vocations, and military rank and achievements. Some of the exploits and achievements are indicated in a rude, heraldic manner, similar to that of the Indians, and to some of the European natives of early historic times.

In the interpretation of these figures, colours play an important part; and it is suggested by Dr. Brinton * that phonetic values may be assigned to them, and in this respect the *ikono-*

* *Essays of an Americanist*, Philadelphia, 1890, p. 223.

matic writing of the Mexicans is peculiar, although, while resembling the Egyptian in the fact of its being polychromatic, the Egyptian polychromes do not have a phonetic value, but are used as determinatives.

In many of the pictures the native artist attempted simply to reproduce, as nearly as possible, the colour of the object represented: thus, water was in blue; deep water sometimes both blue and green in combination, green indicating greater depth; mountains brown or green, and vegetation green. The pictographic characters are usually drawn in black outline, subsequent to which the other colours were applied.

PAPYRUS OF THE EGYPTIANS.

It has been suggested that in Egypt the use of linen for writing purposes antedated the use of papyrus. Cloth having once become an article of wearing apparel, it was soon also employed to wrap the dead, and upon such mummy coverings numerous ancient remains of hieroglyphic writing have been discovered.

The material which the ancient Egyptians

used to write upon was a delicate membrane, obtained by unrolling the fibrous stem of the papyrus (*Cyperus papyrus* Linn., an aquatic plant once very common, but now almost extinct in the Nile). This material, apparently very delicate and fragile, is most enduring, as the numerous specimens extant testify.

The part of the plant used consisted of the thin coats or films of the stalks, those nearest the centre being the most desirable and enduring. A layer of these was spread out carefully upon a hard, smooth surface, and another layer pasted across it in a transverse direction. After being pressed smooth and dried in the sun, the sheet was completed by polishing the surface with some hard and smooth substance.

The writing was done with a brush or pointed reed pen, while the inks were of such durability as to be legible even now after an interval of several thousand years.

When painted or written, as in minor structures (and not sculptured), the figures were usually in black or red, and other colours were applied as symbols to signify special ideas or

subjects, as various objects in Nature, and the colours of different peoples. Upon the papyri are found the gradual changes of the hieroglyphic picture writing into hieratic, and from hieratic into demotic. The characters became gradually reduced from pure figurative types into linear forms, which in turn became more and more abbreviated and conventionalised, so as to result in the above-named systems. Comparisons made in another chapter will more fully illustrate this advancement.

SKINS AND TEXTILE FABRICS.

The various tent-dwelling tribes scattered over the Great Plains were probably more addicted to, and more proficient in, the art of painting upon buffalo, antelope, and other skins than any other of our aborigines. This may be accounted for because of the abundance of the material, and the ease with which the skins were transported in the frequent journeys made by these Indians in pursuit of migratory game. Of recent years, however, muslin and pieces of canvas are used for the same purpose.

These painted records consist generally of personal exploits ; but there are others in which the most important event of each successive year is noted, such event being of sufficient importance to be considered tribal. These chronological records are designated "winter counts," as each event covers that period of time between the end of one summer and the beginning of the next.

There are at least six of these winter counts known to have been obtained from the Dakota Indians, and others are reported as having been seen in the possession of warriors deputed for the purpose. The oldest counts are upon buffalo skin ; the initial figure, representing the first winter, or year, being drawn in the middle, while each successive figure follows in close order, spirally, towards the border. The arrangement differs in different records, so that the spiral arrangement may be towards the left in some, and towards the right, in others. Recently, copies on muslin have also been obtained.

The winter counts are records of tribal inter-

est ; smaller records portray the exploits of individuals. The latter are frequently drawn upon the tent, so as to be readily seen by the passer-by.

The services of experts are frequently demanded, as not all warriors are artists. There are instances in which a warrior desired to depict the most important events of his life, but, being unable to draw a satisfactory figure of a horse, he would have an Indian expert draw all the horses necessary for the entire record, while he himself would add the figure of his own person and that of his antagonist in various attitudes necessary.

Many of the prairie tribes use, also, dyed porcupine quills and horsehair in ornamenting bark, buckskin, or buffalo skin.

The ancient Egyptians sometimes wrote on linen with a brush or reed pen, but the common material consisted of papyrus, as has already been described.

TATTOOING.

Tattooing appears to have been practised among nearly all the Indian tribes, though

chiefly in connection with mystic rites, and for the exorcism of demons believed to cause disease. The Ukiah, of California, had short transverse marks tattooed along the inner side of the forearm, by which the value of strings of shell money was estimated. Among a neighbouring tribe, the Maidu, women had tattooed upon the forehead a small round spot, by which, in case of war, they could be identified by their friends, and ransomed.

The most elaborate system of artistic tattooing, however, exclusive of the Japanese and Burmese, is found among the Haida Indians of Queen Charlotte's Island. Both men and women have various figures of totemic and mythic animals and birds tattooed upon the breast, back, forearm, and leg.

The tattooing is performed only at certain ceremonies and by persons skilled in the art. The operation is scarcely ever completed at one session because of its painfulness, and the inflammatory action following it (often resulting in ulceration). The tattooing is performed by using a small bundle of needles, spicules of

bone, or fish spines, by which the skin is pricked over the design previously drawn in powdered charcoal, gunpowder, and sometimes in vermilion.

The designs upon the breast or back are double—i. e., a single figure is duplicated in such manner as to face outward towards either side from the median line. In this wise the thunder-bird, or eagle, becomes a double-headed eagle, incidentally resembling that of Russia, Austria, and the Holy Roman Empire, which had its origin in the Orient, the prototype being a bas-relief of the Hittite sculpture.* Many of the tattooed figures are so highly conventionalised that their interpretation and origin must be sought in the mythology and cult practices. The same designs are frequently repeated also on the totem posts, slate ornaments, and small carvings in wood and metal.

The practice, both of tattooing and carving,

* The Empire of the Hittites. By William Wright, London, 1884, p. 68. "The symbol first appeared on a coin struck in 1217 A. D., by Malèk Salah Mahmoud. It first appeared on the arms of the German emperor in 1345." Ibid., p. 68, foot-note.

as well as the adoption of forms of certain mythic animals and fish, has been gradually assumed by the tribes along the mountains of British Columbia northward into Alaska. Many of the carved designs resemble, in a marked degree, certain forms found in the islands of the South Pacific and in Mexico.

Among the Kavuya Indians of California the tattoo design worn by a landowner formerly served as a property mark, by being cut or painted upon trees or posts selected to indicate the boundaries. Such marks were equivalent to the owner's name, and were known to the rest of the tribe.

In New Zealand the facial decorations of a dead man were reproduced upon the trees near his grave; while among the Yakuts and Bushmen the facial marks, or even totems, were furthermore employed as property marks, the Bushmen carving them upon growing squashes and melons.

QUIPUS, OR KNOTTED STRINGS AND CORDS.

The most rudimentary method of recalling to memory events, accounts, and numbers was the practice of tying knots in thongs and strings, or twisted fibre. This mnemonic system was common in different parts of the world, but attained various degrees of development. From the fact that knotted cords are pictorially represented in the hieroglyphic writing of the ancient Egyptians, it is safe to assume that that people were familiar with the practice, and probably had recourse to it in remote times.

The Peruvians appear to have possessed the most elaborate arrangement of tying and knotting coloured cords, by means of which accounts and records were kept, and statistical and other information preserved, for transmission from one place to another.

The Chinese, also, had use of knotted strings, the history of the origin of which is mythic.

More of this subject will be presented in connection with mnemonic signs.

NOTCHED STICKS.

To cut or notch a stick is without doubt the oldest form of mnemonic methods. An Indian notches his *coup* stick to note the number of scalps taken ; or he may gash a short stick, or cane, to keep tally of the days spent on a journey. The rural Pennsylvanian dairyman kept a stick for each family supplied with milk, whereon he indicated, by notches, the pints and quarts disposed of. The Clog Almanac and the Exchequer tallies of Great Britain are other instances of recourse to the mnemonic system.

CHAPTER IV.

INTERPRETATION OF PICTOGRAPHS.

IDEOGRAPHY.

UPON examining carefully the available material relating to the pictographs of the North American Indians, the Nahuatl, and the Maya we fail to discover any very pronounced parallels as compared with the known Oriental systems of picture writing. The foreign systems, especially the Egyptian, had become completely phonetic and to a certain extent alphabetic; the Chinese and others had reached the stage of syllabic systems; but among the American aborigines there obtains a system of pictorial ideography which is just in that stage of development where a study of the origin of pictographs is made possible.

Ideographic signs are retained even in our

own language, as in the digits I, II, III, etc., which Grotenfend regards as pictures of fingers, as implied by their very name. The zodiacal and astronomic signs are ideograms. The well-known symbol, ☿, is the Caduceus of Mercury entwined by two serpents; while the ♃, denoting Jupiter, is the arm grasping a thunderbolt. The zodiacal signs, pictorially represented, are said to be found on the zodiac of Dendera, *circa* 700 B. C. Peter of Dacia, about the year A. D. 1300, published an almanac, of which there is a copy in the Savilian Library at Oxford, and from which, it is believed, originated the "homo signorum" (man of signs), so common in later almanacs. In this old copy the influence of the planets is thus described:

"Jupiter atque Venus boni, Saturnusque malignus; Sol et Mercurius aun Luna sunt mediocri." *

It has already been stated that the art of representing things and ideas graphically varies

* Book of Days, London and Edinburgh, 1883, ii, p. 10.

greatly among different tribes. The Innuits of littoral Alaska are remarkably clever in giving lifelike attitudes and specific characteristics to animate forms. The Ojibwa, on the contrary, exhibit greater advancement in the incorporation of gestures and the suggestion of abstract ideas in connection with graphic devices. The Nahuatl, or Aztecs, exhibit upon the codices evidence of a higher order, and had attained a system of ikonomatic or "rebus" writing almost approaching a purely syllabic form; while the Maya of Yucatan had gone a step further, and reached that point—if we may rely upon recently reported discoveries—where the vowel point became separated from the syllable, and attached as a suffix or prefix to other forms.

In the following pages are presented various examples and types of pictographs, to illustrate the method pursued by the Indians.

Apart from the direct representation of objects, the methods of conveying ideas symbolically may be divided into four classes, viz., by metonymy, by synecdoche, by metaphor, and by enigma.

By Metonymy.

This method of pictography is employed by the Indians, and signifies the substitution of one thing for another, as the instrument for the work accomplished, or the effect produced. A common illustration is the portrayal of a blood-stained war club, or tomahawk, to signify that some of the enemy were killed. An interesting illustration is taken from a petroglyph, in New Mexico (see Fig. 6), representing two figures,

one of them being that of a horse placed almost upside down, while the other is the outline of a goat drawn as if going upward at an angle of at least forty-five degrees. These

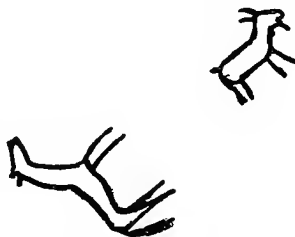


FIG. 6.—Warning. New Mexico.

figures are at the base of a steep, broken bluff, and near the bottom of a rocky and exceedingly steep trail.

The illustration is a notice of warning also, and intimates to the beholder that a goat may

be able to climb the cliff, but that a horse would fall.

The representation of the crescent to denote month (Ojibwa), or the transverse curve of the crescent to indicate the end of a lunation (Egyptian), are examples also of the same method.

The Dakota represent *battle* or *combat* by placing two arrows point to point with a short



FIG. 7.—Combat
(Dakota).

vertical bar between as the object against which the missiles are directed (Fig. 7). The idea of *writing*, to *write*, is well por-

trayed in the hieroglyphic records by presenting the figures of the materials employed, as in

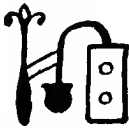


FIG. 8.—Writing
(Egyptian).

Fig. 8; the left-hand character representing the reed used in writing, the ink-well being visible in the middle of the group, while a line connects it with the scribe's palette, on which are

two depressions in which the red and black inks are poured for use.

By Synecdoche.

By this term is meant the substitution of the part of an object or idea, for the whole. This is very common in Indian picture writing, and some examples are here presented.

Among the Arikara Indians the representation of a horse-shoe signifies the unshod hoof (Fig. 9, *a*) of an Indian pony,

distinguished from the so-called American or Eastern horse wearing iron shoes, as indicated in Fig. 9, *b*, in which the short lines at either arm of the shoe indicate the heels of the shoe.



FIG. 9.—Horse
(Arikara).

In both ancient petroglyphs and modern pictographs various kinds of ordinary game are represented by footprints, and sometimes by portions of the body, to indicate special characteristics: thus the wild turkey is represented by the three-toed imprint of a turkey's foot; the deer, elk, and buffalo, by hoofprints of various sizes; and bear by the outline of a bear's paw, with but slight indications (if any)

of claws, to signify the black bear, and large claws, to designate the grizzly.

Frequently the head only is drawn to represent the species of game intended: this is specially practised when portraying deer, elk, or moose, as the difference in the horns can then be noted.

In many of the Ojibwa records the idea of locomotion (*to go, to run, to come*) is recorded by simply portraying the outline of the sole of the foot, or drawing the lower legs in the attitude of walking. This is common also in the Mexican codices, but the drawings are made with greater care, as in the portrayal of *to run*, in which the attitude of the lower extremities is correctly given, one leg being thrown back as in running; whereas in walking the two legs and feet are placed exactly as an inverted "Λ," indicating less speed or haste than in the former. The Egyptian and Hittite inscriptions likewise portray legs in the act of walking, to denote locomotion.

This method of representing ideas by the partial portrayal of the object intended is ex-

ceedingly prevalent among the prairie Indians, in the designation of personal names. In this the human head only is drawn, and above it, usually only part of the animal, bird, or inanimate object used to designate the name of the person indicated below. The two figures are usually connected by a line, one end of which emanates from the mouth, to further designate its reference to a personal name.

By Metaphor.

Gliddon,* in his classification of hieroglyphs of ancient Egypt, mentions two methods of portraying ideas: the first of these is by metaphor, the second by enigma. As illustrative of metaphor, the idea of mother is represented by the outline of a vulture, because this bird was said to nourish its young with its own blood; a king by a bee, because this insect is subject to monarchical government; a priest by a jackal, to indicate his watchfulness over sacred things.

* George R. Gliddon, *Ancient Egypt, etc.*, New York, 1843, p. 22.

By Enigma.

As an example of enigma we find an ibis, representing the god Thoth Hermes—owing to a supposed mystical connection between the bird and the deity ; a branch of lotus, or other parts of this flower, indicated the upper region, or Upper Egypt—while a tuft of papyrus, symbolised the lower region, or Lower Egypt ; a sphinx (always male in Egypt, with a lion's body and a man's head) represented royalty, or intellectual power combined with physical strength.*

ABSTRACT IDEAS.

Ideographs representing abstract ideas, pictorially expressed, are more frequent in the pictography of some tribes than the mere portraiture of objects pure and simple. Some examples are presented herewith.

Fig. 10 illustrates a Dakota † method of

* Metaphor and enigma are not especially important in North American pictography.

† Fourth Annual Report of the Bureau of Ethnology for 1882-'83, 1886, p. 219. Ibid., p. 219.

representing the sign for pipe, by having the left hand assume the attitude of holding one. This is of interest, for the reason that, instead of drawing the figure of a pipe as is usual, the gesture sign is made therefor.



FIG. 10.—Sign for pipe.

The idea of abundance, as applied to buffalo meat (formerly one of the chief articles of diet of the Dakota), is represented in Fig. 11: the circle signifies the pit, or “cache,” in which it was stored, the article therein being indicated by the buffalo head; a forked stick, used in supporting the drying pole, extending upward from the circle, is also drawn.



FIG. 11.—Meat stored in a pit.

A common form is the indication of two upright, forked sticks, upon which to rest the drying pole; suspended from the pole are several pieces of meat, and above it is the specific character, a buffalo head, designating the kind of meat referred to.

The idea of hunger and starvation is variously represented. Among the Ottawa a com-

mon character is the simple outline of a man, having drawn across the breast, or abdomen, a heavy line or bar, to indicate the seat of suffering. The Dakota represent the same idea by drawing a similar effigy ; but instead of a single bar, the entire body shows curved lines, joining at the upward turns upon the sternum, thus representing prominence of the ribs from emaciation.

Upon a pictograph in the Tule Valley, California, are a number of figures indicating hunger by making the gesture therefor. This is done by placing the hands as high as and outward from the hips ; then passing them inward and outward, as if sawing off the thigh at the hip joint. The gesture represents the "gnawing of hunger." The pictograph would be unintelligible, but for its position among many other characters, all of which have their own particular import.

While investigating the subject of picture writing among the Innuits of southern Alaska, some interesting facts were developed respecting the extent to which gesture signs were em-

ployed. In connection with the portrayal of the characters to signify hunger or starvation, the idea is conveyed by drawing two figures: the first being the simple outline of a man with arms extended outward to either side, to signify *nothing, no, none*; the second, also, the figure of a man, with the right arm curved, and the hand put to the mouth to indicate to eat; the whole signifying "nothing to eat."

Placing the tip of the hand to the mouth to indicate *eating, food*, etc., is represented also in the Egyptian hieroglyphs, corresponding in every respect to the hieroglyphs of the Inuit.

The Dakota employ a character (Fig. 12) in connection with figures denoting disease or pain, usually terminating fatally, which is similar to the pictorial figure of the Chinese



FIG. 12.—
Character
denoting
pain.

for "cramps in the stomach." The figure referred to represents the stomach and intestines, the spiral form of the latter being explained as signifying the "twisting sensation."

Prince Maximilian, in his *Travels*, gives an example of a character denoting trade or ex-

change, represented by a small St. Andrew's cross. This is in imitation of the gesture for the same idea, made by holding upward and forward the extended forefinger of the left hand, and with the extended index finger of the right hand striking the middle joints together, thus forming a cross, and signifying thereby the exchange of one thing for another.

CHAPTER V.

SYMBOLS.

By the term symbols, or symbolic signs, is meant the representation of ideas by aid of certain analogies which the mind sees between the symbol and the idea attached to it; as a disk representing a day, or a dove, purity. Among the Indians many characters are employed symbolically, in connection with historic records, mnemonic songs, and totemic beliefs.

The representation of a tomahawk, especially when painted red, usually denotes war, or a declaration of hostilities; a pipe, or crossed pipes, denotes peace, or treaty; in the same manner, the figures of two approaching palms, or hands clasped, signifies peace, or friendship.

Examples will be introduced in connection with other divisions of the present work, espe-

cially as relates to the evidence of symbolism among the Mexicans and Egyptians.

Among the several Indian tribes symbols have been invented to denote various intervals of time, as is illustrated below.

TIME SYMBOLS.

The Dakota Indians possess several pictorial records, known as calendars or winter counts, upon which are noted the chief event of each year. These calendars cover periods of over one hundred years each, and are interesting on account of the number and variety of pictographic designs to express various symbolic and abstract ideas. In other pictographic records of this tribe we find symbols to denote cycles of seventy years each—relating to mythologic history—represented by drawing a circle, to the outer side of which are attached the triangular representations of tepees or tents. The circle signifies ten, and multiplied by seven—the number of tents shown—makes the total of seventy years intended to be indicated.

Years are indicated by drawing an indefinite

number of small rings, and connecting them by short lines—i. e., “strings of years,” or periods of time, indicating the number of years shown by the number of rings. A variant of this occurs in an instance where there is a horizontal line, from which are suspended a number of short lines each terminating with a ring, like ball fringe. The conception in both instances is the same.

In Egyptian hieroglyphics the sign for year is a branch of palm, symbolic of a year, because, according to Horus-Apollo, the date palm, at each renovation of the moon, produces an additional branch, so that in twelve months there will be twelve leaves. The plausible reason, is that the lower leaves are cut close to the trunk once in each year.*

Seasons, or portions of a year, are pictorially portrayed by the Ojibwa, and apparently by the Maya. The Ojibwa represent spring by drawing trees with but the faintest indication of buds upon the branches; and winter is in-

* Gliddon, *Ancient Egypt*, p. 25.

indicated by drawing the curved line for sky with the short zigzag lines descending therefrom for snow, the whole signifying the



FIG. 13.—Snow.

“season of snow.” It will be noted that the descending lines are also intended to represent the snow-flakes being driven hither and

thither, as differing from the straight or waving lines as drawn in a similar manner for rain.

In one of the Dakota records is a character to denote winter, similar in conception but slightly different in execution. The sky is represented by transverse parallel lines, beneath which are short lines descending towards an imaginary line. This signifies snow falling, the particles of snow being indicated by the short strokes.

In some of the same records are presented characters, scarcely intelligible from their appearance, but intended to represent the leaves chasing each other along the ground, as in the autumn or in winter days. As the leaves lie thickest upon the ground in the autumn, it is probable that the pictographs signify that time

of the year when "the leaves are blown about."

In the Maya* list of month symbols is one for December (Fig. 14), which clearly indicates the curved line for sky, and the waving lines descending therefrom to indicate rain, as in the Ojibwa. This appears to indicate a rainy month, especially as the month signs preceding and succeeding it, have corresponding symbols, apparently drawn to indicate wind or atmospheric disturbance—the breath of the wind gods, as drawn by the Ojibwa.



FIG. 14. — December (Maya).

Month is indicated by the crescent; and in one instance the upward curve, denoting sky, is drawn; each end of the curve terminates in a curve or hook, beneath it a short vertical stroke, to signify *one*. The curve represents the course followed by the crescent, from east to west, the hook at the left representing the moon

* From the Maya Book of Chilán Balam of Chumayel, quoted by Dr. Brinton in "Essays of an Americanist, Philadelphia, 1890, p. 266.

as formed by the hand ; the curve, the course taken by the hand in making the gesture sign for month ; the short stroke, as stated, meaning *one month* (Fig 15).



FIG. 15.—One month.

In the Egyptian hieroglyphs we find month represented by the inverted moon—i. e., the crescent forming a curved arch from left to right, with a portion of a disc in the concave centre, from which is suspended a star. The curve, no doubt, is symbolical of lunar motion.

The White Mountain Apaches represented *one week* by drawing seven circles, each as far from his neighbour, as its own diameter, the circles being connected by short lines, like the Dakota year symbol. At the end of the row of circles was the representation of the sun, as a many-pointed star.

Day is represented by the figure of the sun, either as a simple circle, or a circle having an indefinite number of lines radiating therefrom, or a circle within which was drawn the human face.

According to Copway,* the Ojibwa formerly indicated the divisions of a day in this manner (Fig. 16). An upward curve from left to right indicated the course of the sun, and a short line attached at right angles thereto, at the eastern end, would indicate sunrise—morning; one at the middle to mark the zenith, represented mid-day; and one at the western end, sunset—evening. The figure was based upon, and was intended to represent, the gesture signs for the same idea.

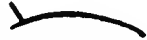


FIG. 16.—Morning.

Indians making gestures relating to different times of the day make them as if facing the south, possibly because the sun is always southward of the tribes under consideration, and because it is less inconvenient (in using the right hand and arm) to make the signs for sun, moon, and day, from left to right, than in the opposite direction.

In some of the Ojibwa mnemonic records we

* Copway, *The Traditional History and Characteristic Sketches of the Ojibway Nation*, London, 1850.

find characters, as represented in Fig. 17, in which the hand is passed a short distance from



FIG. 17.—Morning.

the eastern horizon towards the zenith, the gesture signifying rising sun, and, by metonymy, morning. The sign for east, as it relates to the Midē' Society, is also similarly portrayed.

Night is represented by the Arikara and Hidatsa Indians by drawing the background of a small pictographic record black. The Ojibwa represent the same idea by a crescent in black; or, if uncoloured, by placing a star beneath the curve, usually drawn to designate sky.



FIG. 18.—Night
(Egyptian).



FIG. 19.—Night
(Mexican).

The Egyptian symbol for night is much like the Ojibwa, in conception as well as execution, as shown in Fig. 18. The star is shown suspended beneath the character for sky.

The Mexicans* represented night by a drawing of the sky, to which was

* Kingsborough, vol. iii, in Codex Mendoza.

attached one or more circles or "eyes" denoting stars, as in Fig. 19.

TOTEMIC AND TRIBAL DESIGNATIONS.

Among the various Indian tribes are found divisions, constituting clans or gentes, the members of each of which believe themselves related by blood on account of descent from a common ancestor. Such a mythic progenitor is represented by his zoöomorphic form; and Indians in recording their own names upon hunting records, missives to other Indians, or, as designated upon grave-posts and totem-posts, make use of the totem name rather than the specific name by which they are usually designated. The carved totem-posts of the Haida and other Northwest coast Indians are good illustrations, and an examination of any of these posts will develop the fact that the carvings usually relate to some mythologic history, but that the figure surmounting the whole represents the totem of the owner of the post, or perhaps even of the maker.

The Innuit of southern Alaska erect grave-

boards to the memory of departed friends, upon which are portrayed the profession of the deceased as well as his most important possessions. The profession, or pursuit in life, designates him as being a member of one of the two



FIG. 20.—
Hunter's
grave-post.

clans, a hunter of aquatic or of land animals. Fig. 20 is a reduced copy of the characters drawn upon a board, by an Inuit. The upper character represents the deceased to have been a hunter, and is observed in his *baidarka*, or boat, with a companion. Beneath the body of the boat are two projections signifying the paddles. The crosslike figure is a rack for drying fish and skins. The pole projecting from the top has short lines attached to it, denoting streamers of calico or cloth.

The next figure is that of a fox, while the second from the bottom is a land otter. The lower figure represents the hunter's summer habitation. These temporary dwellings are erected at some distance from the set-

tlement, and furthermore denote the resort of a skin-hunter ; whereas the fishermen reside in dome-shaped structures nearer the shore. This differentiation in the shape of roofs of habitations pertains to their pictographic representation and not to their actual form.

In like manner the head-board, erected to the memory of a woman, has displayed upon it various articles used by her in life, as knives, scissors, sewing utensils, and a basket ; though in such instances there is no reference to any special division of the tribe.

Among the Ojibwa and Menomoni Indians the figure of the totem of a dead man is drawn upside down upon the grave - post. Under ordinary circumstances the totem may be distinguished from the form used on mnemonic records of cult ceremonies, by being designated without any extra indications, as lines, dots, etc. ; if of religious or shamanistic signification, the totem has drawn across it a straight line to signify magic or religious power, or short zig-zag lines attached to the body to denote the same power or attribute.

In a letter drawn upon birch bark (which was sent by an Ojibwa girl to a favoured lover,

at White Earth, Minnesota) appear the totems of each of the persons interested. A reduced copy is herewith presented in Fig. 21. The history and significance of the characters are as follows :

The writer of the missive is a girl of the Bear totem, as indicated by the representation of that symbol at the left hand upper corner. The symbol beneath is that of the "Mud Puppy" totem, of

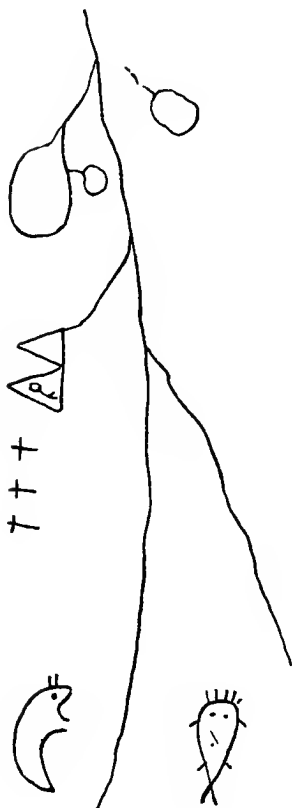


FIG. 21.—Ojibwa love letter.

which the recipient of the letter was a member. The line beginning at the lower middle of the

pictograph signifies one trail leading to another, which runs from the Bear totem's camp, to the right, to a point between two lakes, at which another trail branches off towards the top to two triangular bodies denoting tents. Three girls are encamped here, they having become members of the Catholic Church, as is indicated by the three crosses placed between the tents and the figure of the Bear. In the figure of the left-hand tent is a small square—an opening in the habitation—from which is seen protruding an arm, with the hand towards the ground, beckoning. The arm is that of the writer of the letter, who is making the gesture—to come; this is made by the Indians by holding the palm of the hand down and forward, and drawing the extended index finger towards the place occupied by the speaker, thus indicating the path upon the ground to be followed by the person called. This is contrary in execution to our gesture for the same idea, as we usually elevate the finger, and draw it backward towards the body, closing it in towards the palm at the same time.

The Arikara have long been recognised by the surrounding tribes as the corn-raising Indians, and are therefore designated by the Dakota by the outline of an ear of corn, as in Fig. 22.



FIG. 22.—Arikara.

The Assiniboines are also depicted by a figure which is intended to represent the mouth, tongue, and chin, as in Fig. 23, because of the voice, being termed “loud callers.”



FIG. 23.—Assiniboine.



FIG. 24.—Crows (killed).

The Crow Indians are indicated by the top-knot of hair brushed upward from the forehead, and by the forehead being painted red. The latter, shown in Fig. 24, is from one of the Dakota records, and signifies that four Crows were killed in a fight, death being intimated by there being no bodies attached. Among the Ojibwa the same idea is represented in exactly the reverse—i. e., by a headless body.

In the above, the darker line at the top of the head represents the red forehead, as war paint; and the character is thus distinguishable from one very similar (though without the dark foreheads) to denote four drowned Sioux, the transverse line signifying the surface of the water.

The Dakotas represent the Crow or Absaroka Indians by a tall topknot of hair brushed upward and backward from the forehead. It is well known that this is a practice generally followed by the Crows, and recognised in sign language by many other tribes as a sign distinct from that ordinarily used, by imitating, with the hands, the movement of wings as in flying.

The Sioux have, in some records, designated the Omaha tribe by painting the cheeks red, on account of facial decoration with that colour; and in other pictographs they represent a tuft of hair extending backward over the crown, from the forehead to the occiput, in imitation of the headdress of coloured elk hair.

Many tribes designate graphically other tribes by appending totemic characters. This is especially common in Mexican picture writing, in which the country, family, or some other designation is attached to the outline of the human figure.

In a battle between the Acolhuas and the Tepaneques, the latter are indicated by the figure of a stone (*tetl*), surmounted by a flag (*pantli*), representing the name iconomatically.

In Egyptian hieroglyphic writing, various nationalities are indicated by the colour of the skin; and at Karnak are engraved a number of human forms, with Mongolian or Turanian features, long queues, and turned-up shoes, as used among the Tartar peoples, indicating, according to some Egyptologists, the Hittites.

Under the designation of colours, reference was made to various styles of marking feathers, to denote different exploits. Further reference to such marks, as made by the Dakotas, are given herewith, in which colours do not bear any special significance, although black or red pigments are usually employed because of their

greater abundance in Nature, or because of their availability.

The designation, upon the eagle head plume, of a spot in red as large as a dime, signifies that the wearer was wounded by a bullet. Sometimes the spot is painted upon that part of the body where the wound was actually inflicted. If the wearer was wounded by an arrow, he splits the tip of the eagle plume. A V-shaped cut made into the side of the broad web of the feather, and the edge of the cut stained red, denote that the wearer killed an enemy, cut his throat, and scalped him. To signify only that the throat was cut, the feather is cut off diagonally, about two inches from the tip, and the edge painted red.

The confederated Arikara, Mandan, and Hidatsa, of North Dakota, employ several ingenious devices to denote several degrees of bravery. A mark like that in Fig. 25 signifies that the one upon whose person, blanket, or other property it may be depicted, has successfully defended himself against the enemy on



FIG. 25.—
Mark of
distinction.

the open prairie. Two or three such marks are sometimes combined by simply elongating one pair of lines and increasing the cross lines; thus the figure becomes more difficult of comprehension.

The designation of an inverted Ω or horseshoe denotes that the person wearing it upon his blanket or painted upon the thigh has captured an enemy's pony; if the ends of the inverted Ω has short cross lines, it signifies the animal to have been a white man's horse, as the short cross lines denote the heels of the iron horseshoe. These marks are frequently painted upon the boat paddle used by the squaw, showing evidence of pardonable pride in her husband's exploits.

When, on an expedition or war party, an enemy may be shot, the one firing the shot is not deemed as brave as the first four who run forward and strike the fallen body with a bow, or *coup* stick. The first to reach the enemy and touch him is entitled to wear a mark similar in shape to that represented in Fig. 26. This is worn upon the blanket, or, on festal oc-

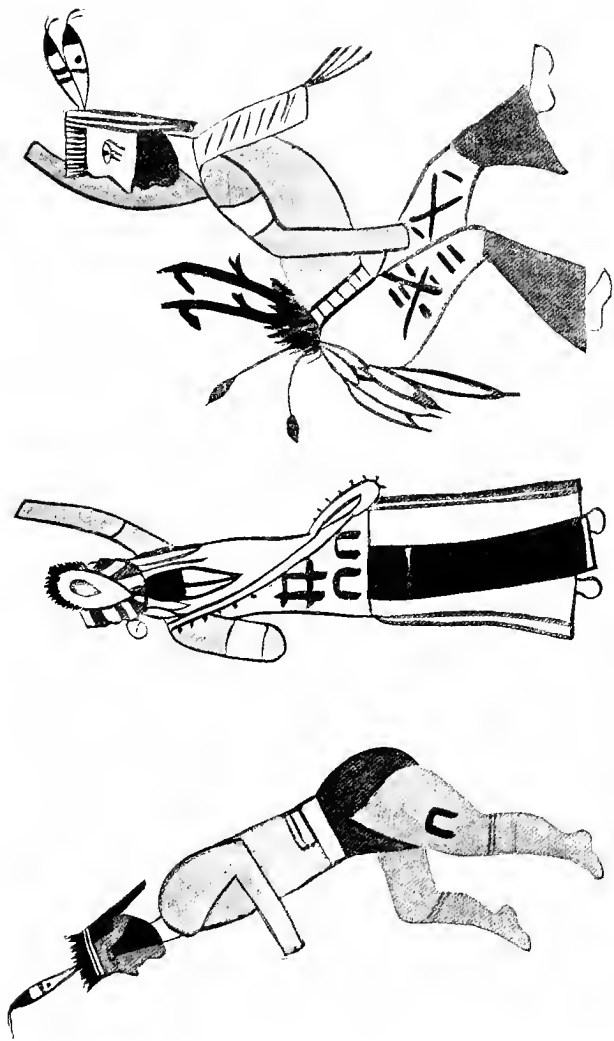


PLATE II.—Hidatsa dancers, bearing marks of valor.

casions, it may be painted upon the thigh—as may also those marks above described. The second person to reach and touch the enemy makes the above cross and one short bar between any two arms, as in Fig. 27; the third person adds a second bar to the preceding, and the fourth person a third bar. These marks are understood by all of the Indians named, as well as some neighbouring tribes, and no attempt at fraudulent decoration could be made without detention and ridicule, or possible punishment.



FIG. 26.—
Mark of
distinction.



FIG. 27.—
Mark of
distinction.

Among some of the prairie tribes it is customary to sometimes imprint upon a war pony the outline of a hand in red ochre. This is done by those who have been wounded in battle.

One who is expert in stealing horses from the enemy is entitled to tie to the tip of his eagle plume the rattle of a rattlesnake, thus symbolising stealth and bravery.

In Cheyenne pictographs, marks of valour, or rather vows, are sometimes represented, which

in gesture signs have become a tribal designation. Short transverse bars are drawn across the back of the forearm, denoting gashes made in fulfilment of a vow for success in war.

MYSTIC OR SACRED ATTRIBUTES.

As already intimated, the Ojibwa mnemonic records present ample evidence of the occasional use of certain marks, or lines, to serve in the capacity of determinatives—certainly not like those of the ancient Egyptian hieroglyphs, nor even as pronounced as those which appear to have been employed by the Mayas—sufficiently persistent and conspicuous to indicate that the Ojibwa were on the verge of a transition from pure ideography to a modified form of ikonomatic writing.

These marks or lines are added to the ordinary representation of any object, either animate or inanimate, to designate that such object is of a mystic or supernatural nature; that spiritual attributes are possessed by the human form so designated, or that an animal or bird is thus portrayed as mythic, or as a deity. The

use of such special designations occurs only in connection with the ritualistic records of the cult societies, and the mnemonic songs or records of the shamans or medicine men

To further illustrate the above suggestion some examples may be here reproduced.

Fig. 28 represents a leg and foot, the two cross lines being determinatives, and indicate that the person by whom the ideograph was made, or perhaps referred to, is possessed of magic power sufficient to transport himself or his influence for good or for evil through unlimited space. The leg drawn without the cross lines suggests nothing beyond the mere representation of that extremity; but, when inclined at a slight angle, either to the right or left, it may denote a pipe, and as such occurs frequently in the sacred records of the Ojibwa Indians.



FIG. 28.—
Magic power of transportation.

In Fig. 29 is shown a circle, above which is the outline of an arm and hand grasping it. Within are three zigzag lines, while below and to the right are a number of loops or semicir-

cles. The hand thus grasps a dish, the zigzag lines denoting magic or sacred influence, while the semicircles are intended to signify articles of food, the whole being symbolical of a feast, given by the recorder of the chant, at a meeting of a cult society, the mystic or sacred character of which is thus indicated.



FIG. 29.—
"Feast given by medicine man."

The disc without the zigzag lines, might be taken for quite a variety of ideas, as the Ojibwas represent in such manner a shaman's hand reaching into the soil, to extract therefrom medicinal roots and plants; a hand holding a drum, as at a ceremonial dance; a flat rattle, or a tambourine, as employed by the juggler and the *wâbeno* at ceremonies of exorcism or incantation; or even a medicine bag employed by the herbalist in the preparation of decoctions and infusions.



FIG. 30.—
Charmed arrow.

In Fig 30 is represented an arrow, with the web of the shaft greatly enlarged, thus designating it as a charmed arrow or one possessed of great power in the

hands of the shaman, who may represent himself as the owner.

The short lines, in addition to suggesting magic influence, represent the idea of augmentation—i. e., the great or magic arrow. When animal forms are intended to denote totems or clans, the simple outline of the animal to be designated is portrayed; but when a *manido* or spirit form of such animal is intended, a line or bar is drawn across the thorax, or short lines may be attached to the back, extending from the head down to the extremity of the tail.



FIG. 31.—Sacred otter.

Fig. 31 represents the otter as a spirit or *manido*, the determinative line in this instance being drawn diagonally across the body. The three waving lines issuing from the mouth represent voice, and signify that the otter *manido* responds to the invocation of the shaman.



FIG. 32.—Bear *manido*.

An interesting variant is presented in Fig. 32, in which the employment of both varieties

of "magic lines" signifies, not intensity nor augmentation of magic influence, but anger. The figure is that of the bear, the line crossing the body denoting the animal to be the bear manido, but the indication of bristles denotes anger, displayed at the dilatoriness of the braves who had supplicated this spirit for assistance in war.

There are many instances of various and differing representations of the human body, or parts thereof, to which similar short lines are attached, to indicate magic or supernatural power. In some instances the arm, or other portion of the body, is furthermore decorated by zigzag lines extending from one end to the other, as in Fig. 33, which represents a shaman's arm raised towards the sky in supplication to the Great Spirit.



FIG. 33.—
Arm raised
in invoca-
tion.

Another character frequently employed as a determinative (and as such designating special attributes or functions in the knowledge of medical magic, and more particularly in the reputed magical properties of plants) is the

attachment to the human arm, hand, or even the entire figure, of a sprig of a plant or a few leaves. Such is the designation of a herbalist, who professes knowledge of decoctions and infusions. Fig. 34 is a reproduction of an Ojibwa etching, obtained from the Red Lake Indians of Minnesota; it signifies a deity named Esh-kibóga, who appears to be the mythic and primitive Æsculapius.



FIG. 34.—Herbalist.

An interesting comparison is reproduced in Fig. 35, from an Easter Island tablet, representing the god who produced medicine.*

Attention may properly be called, in this connection, to still another method of designating figures that pertain to hunting or death by representing the location



FIG. 35.—God of medicine, Easter Island.

* Te Pito Te Henna, or Easter Island. By W. J. Thomson, U. S. Navy. Report U. S. National Museum, for the Year ending June 30, 1889. 1891, plate xxxviii.

of the heart within the breast by either a small triangle, square, or circle, from which a line is drawn as if extending therefrom to, or even beyond, the mouth. This is denominated the life line, and is explained by the Ojibwa as illustrating a shaman's power over the life of the animal or person so depicted.

The representation of superiority in rank, as a chief or a shaman, consists in the representation of appendages to the head, as horns, rays, or triangular points.

Feathers and similar ornamental figures are the most frequent methods of portraying superior status. Among the Ojibwa the presence of horns pertains more particularly to that class of medicine men known as *wábéno*, or fire jugglers ; and the representation of a pair of horns only is sometimes employed to symbolise this variety of pretenders.

The representing of head ornaments usually indicates rank, as may be observed in an examination of the sculptures and codices of the Mexicans, the mural remains of the Mayas, and the monuments and papyri of ancient Egypt.

Even upon the incised tablets of the Easter Islanders a differentiation between male and female deities is made, by means of the characteristic head ornaments worn by men and women.

In Fig. 36, *a* and *b*, are represented respectively a god and goddess, both greatly resembling Shoshonian petroglyphs of the United States; the female (*b*) is identical with Zuñi and Moqui drawings representing the custom of these tribes in wearing coils of hair upon either side of the head indicative of the unmarried state of the wearer.



FIG. 36.—Easter Island god and goddess.

In the complex pictograph reproduced in Fig. 37 is observable but a slight indication of rank, the vertical line above the head resembling more a “name object” than status. The illustration, of Mexican origin, represents a



FIG. 37.—A Mexican scribe.

Tlatlotlaque chief named Coatlitepan, who had come to the city of Texcoco, at the request of the emperor, to engage in painting and recording chronicles.*

This chief was a *tlacuilio*, or painter, and a maker of chronicles and images, an art in which the people of Texcoco excelled. The name of the figure is given by the serpent (*coatl*) folding upon itself; his profession indicated by the brush and sheet before him, while the path beneath presents the marks of footprints coming to the place occupied and also returning on the under curve, signifying that a return was made towards the direction whence they came.

Among the Mexicans the *copilli*, a peculiar head ornament, was the distinctive character of royalty, and the attachment, to the head, of plumes, denoted the rank of a chieftain or warrior. Persons who had performed certain duties for the head war chief, or who had distinguished themselves in war, received the

* Boban, Documents pour servir a l'histoire du Mexique, . . . Paris, 1891. Atlas, plate iv, No. 134.

privilege of wearing certain peculiarly marked mantles, and adorned their shields with particular devices, easily recognised by others and respected accordingly. Such devices, and the methods of bearing them, resemble in reality the early beginnings of the system of heraldry.

PROPER NAMES.

Should an Indian desire to differentiate, in sign language, between the "black bear" *per se* and the "black bear" as the name of a person, he would in both instances first make the gesture sign for *bear*, followed by that for *black*; but to designate it as a proper name he would immediately thereafter, in an emphatic manner, pass the extended index finger forward from the mouth. This movement of the finger forward from the mouth denotes *to tell, to name*; and in pictography the same idea is expressed by drawing a line between the mouth and the object representing the name. Frequently, however, this connecting line extends from the top or back of the head to the "name object"; in some instances there may be no line

at all, and perhaps even no portrayal of the human head or figure to which the "name object" may pertain. There are numerous in-

stances of the last-named variety, and as such the "name object" may also be employed as a signature, or a property mark.



FIG. 38.—"Old Mexican" (a Dakota proper name).

Fig. 38 is reproduced from a Dakota record, and illustrates not only the name but also the condition of the object drawn. The proper name signifies "Old Mexican," the presence of the hat denoting the image to represent some

nationality other than an Indian; the darkened figure signifying one of a dark type, and the hand grasping the staff presents the idea of age, or debility, thus resembling the Egyptian hieroglyph—i. e., "walking with a staff," *age, indigence*. Debility accompanying age is furthermore expressed by the attitude of the body, being drawn so as to represent its leaning forward.

An instance of recording the name without

the additional representation of the human head is that of the Teton Dakota chief and orator "Running Antelope," who places beneath his drawings and pictorial biographic sketches simply the outline of an antelope with the logs thrown out as in the act of running, as reproduced in Fig. 39.



FIG. 39.—"Running Antelope" (a Dakota proper name).

In this, the split hoofs are indicated by small horseshoe forms, the coloration of the animal being also indicated by attempting to represent the bands of dark tawny yellow and white upon the neck. The pronged horns specify distinctly the species of animal intended, apart from any other indications present.

a. Personal.

The Ogallala chief "Red Cloud" indicates his name by the portrayal of a red cloud, the lines in the drawing appearing as in Fig. 40. The



FIG. 40.—"Red Cloud" (a Dakota proper name).

name originated from the fact that when this chief, accompanied by his red-blanketed warriors, swept over the low ridges of western

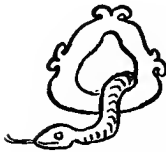


FIG. 41.—Coatlíchan.

Dakota, the party appeared rather like a red cloud passing over the plains than a compact body of well-mounted Indians.

Fig. 41, from the codices,* represents the name of a chief known as Coatlíchan—"the abode of the serpent"—from *coatl*, serpent, and *chantli*, abode.

The mouth of the cavern is here designated with the snake issuing there-



FIG. 42.—Coatlíchan.

from; but a more highly conventionalised form of the same name is presented in Fig. 42, in which the serpent is drawn

so as to assume the form of the mouth of the cavern itself. A synonym of the above, given herewith, is Coalychan.†

The name of Ixcicohuatl, "Snakefoot," is

* Boban, *op. cit.*, ii, 155.

† Boban, *op. cit.*, plate vi of Atlas.

reproduced in Fig. 43, from the Mexican records,* the *coatl*, serpent, entwining the leg, *icxi*. Another illustration, from the same source,† presents an interesting variant of the same name, by showing only the leg, whose foot is itself the serpent's head (Fig. 44).

A well-known example of ikonomatic writing is the name of Itzcoatl or Itzcoatzin, the fourth great war chief of Mexico ‡ (Fig. 45). The upper figure, *a*, shows the *itzli* or obsidian represented by the arrow points made of that material, attached to the snake (*coatl*). The lower figure, *b*, is an interesting variant of the preceding, and consists of the charac-



FIG. 43.—"Snake-foot" (a Mexican proper name).



FIG. 44.—"Snake-foot" (a variant).

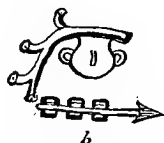


FIG. 45.—Variants of the name of Itzcoatl.

* Boban, *op. cit.*, plates lv and lviii of Atlas.

† Boban, *op. cit.*, plate xlix of Atlas.

‡ Boban, Atlas, plate ix.

ters *itzli* (root *itz*), obsidian, the vase, *comitl* (root *co*), and *atl*, water, attached to and flowing downward from the mouth of the vase.*

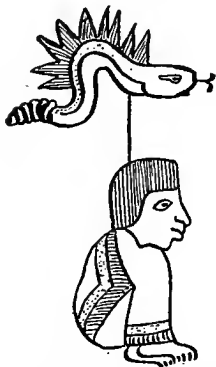


FIG. 46.—Itzcoatl (a Mexican war chief).

Another variant † is herewith reproduced in Fig. 46, the personal name consisting of the serpent, armed with arrow points, being attached to the head of the individual himself, a procedure resembling the practice of our own Indians of the Great Lakes.

Nezahualcoyotl, born in 1402, was the ninth great war chief of



FIG. 47.—Nezahualcoyotl.

Texcoco, and one of the greatest figures in Mexican history. The character for his name,

* Boban, *op. cit.*, ii, pp. 20, 21.

† Kingsborough, vol. i, plate v, of Codex, Tel. Remensis.

Fig. 47, was formed of the anterior part of the puma (*Felis concolor* L.) with a leg projecting forward, to which was added the symbol *atl*, water. It is rare, however, to find him designated by this character; more commonly he is mentioned by the second part of the name, the head of a *coyotl* (coyote) carrying a collar of small rectangular pendants, indicating "the faster." His death was indicated by an obsidian arrow penetrating the head of the *coyotl*. In this drawing the first figure is not present.

b. Geographic.

The symbolic ideograph *tepetl*, mountain or cone, is usually surmounted by the sign, either ideographic or phonetic, which gives its name to the place or locality spoken of.

The common symbol for mountain is pyramidal or triangular, and may terminate in an acute or rounded form above. For the character designating *Colhuacan*, the apex is recurved towards the right as in Fig. 48; thus transforming the ideographic sign, and indicating the

“country of the Colhuas,” from *coltic*, curved or turned, and the particle *hua*.

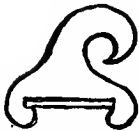


FIG. 48.—Colhuacan.

In like manner Chapultepec, “mountain of grasshoppers” (Fig. 49), is designated by showing upon the *tepetl*, mountain, the *chapolin*, grasshopper. The character designating this locality occurs in a variety of forms, substantially alike,

with one exception, in which the insect is shown with a death's-head, apparently to signify devastation, clearly referring to the rapacious character of that species of grasshopper known



FIG. 49.—Chapultepec.

as the “Rocky Mountain locust,” which may have ravaged the country surrounding the area above named, and thus become an event of sufficient importance to receive recognition, as above indicated.

A similar instance of pictorially representing a well-known volcano is the character *Popocatepetl*, “smoking mountain,” composed of *tepetl*, mountain, and *popoca*,

smoking or fuming; the specific sign being placed upon the symbol for cone or mountain.

In the figure denoting *Texcoco* a curious ideographic variant occurs, in which the *tetl*, stone, is surmounted by a *comitl*, vase, both being within the symbol for mountain as presented herewith in Fig. 50.

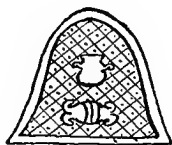


FIG. 50.—Texcoco.

An instance resembling the above, in which the objects are read from below upward (instead of the general method which is the reverse) is that shown in Fig. 51, signifying the

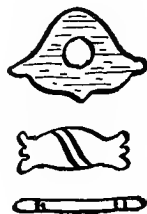


FIG. 51.—Tepetlaoztoc.

locality Tepetlaoztoc, in which resided Yacanex, an Otomi chief, who was tributary of the great chief Xolotl. The lower character is a mat or bundle of straw (*petlatl*), above it a stone (*tetl*), and over all the cavern (*oztotl*).

The Indians of the Northwest, particularly those living between the Rocky Mountains and the Great Lakes, designate various geographic areas by certain characters denoting peculiari-

ties, either of the people, game, or anything with which they are impressed at first sight.



The Egyptians termed Libya, prior to 2000 B. C., "the country of the nine bows," a designation extremely appropriate for



FIG. 52. — The hieroglyphic name of Libya.

the wild nomads of Fezzan, for the Libyan archers and Numidian cavalry are celebrated in history.* In the illustration, reproduced in Fig. 52, the number nine may be vague, as the representative of "a great

many," as specific to the tribes of Libya.

The small black semicircle is a determinative, and relates to the country spoken of; although the ordinary character denoting country is represented in the linear hieroglyphic by —i. e., the figure for mountains; and civilised country by , denoting bread, with incisions at the four quarters, like "cross-buns."

* Gliddon, *Ancient Egypt in the New World*, 1843, p. 41.

PERSONAL EXPLOITS.

In Fig. 53 is reproduced an Ojibwa record pertaining to an exploit performed by a wâbeno, or so-called bad medicine man. The small rectangular figures at the left of the illustration represent the four degrees of the cult society of which the recorder and operator was a member. These degrees are indicated by the outline

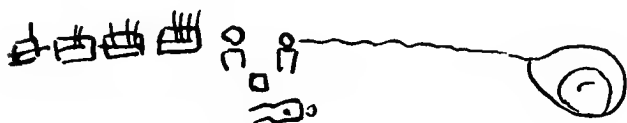


FIG. 53.—Wâbeno destroying an enemy.

of the sacred structure within which the ceremonies of initiation are performed ; the first has above it one vertical stroke, representing the sacred or mystic post erected within the enclosure, and denotes the first degree ; the second figure has two such posts ; the third three ; and the fourth and last, four strokes or posts.

The next succeeding figure is that of a man, denoting the assistant to the wâbeno, who in turn is shown next, towards the right, with a

waving line extending from his mouth to the extreme right-hand side of the illustration, to an oval form. The waving line represents the power and influence of the wâbeno as extending to a lake, upon an island in which resides the victim represented beneath the wâbeno as lying sidewise, and with a spot upon his breast. The island in the lake is indicated by a circle. The small oblong figure between the wâbeno and his victim represents the sacred or medicine drum, which is used at incantations.

The signification of this record is that the wâbeno was called upon for aid, in removing, by magic power, a rival of the applicant. The wâbeno took a piece of birch bark, and incised upon it the effigy of the alleged rival, and after tapping upon the drum and chanting the while, he pierced the breast of the effigy and applied to the puncture some red paint. This puncture is believed to cause the person so represented to gradually languish and die, although he may reside at a remote locality, as indicated by his living upon an island in a distant lake.

The above circumstance actually occurred in

1884, and the person whose effigy was thus punctured died in the following spring—certainly not from any magic influence, but from the effects of a severe cold contracted during the preceding winter.

In Fig. 54 is reproduced a hunting record, also made upon birch bark by an Ojibwa medicine man.

The lower line extending from left to right, with the undulating line immediately above it, represents a river with waves upon the surface. The left-hand figure is that of a birch-bark canoe, in the stern of which is seated the recorder, guiding his canoe, as it floats silently along with the current. In the bow of the boat is erected a piece of birch bark, before which is a fire of pine knots to light up the banks of the course to be followed. By this means game, as it comes to the



FIG. 54.—Ojibwa hunting record.

water to drink may be observed from the shaded end of the boat occupied by the hunter. The rounded extremity, above the piece of bark, represents the smoke as rising above the flames of the torch.

In front of the boat are two deer, beyond which is a circle representing a lake, at the top of which is the head and horns of a third deer.

A doe is shown to the right of the lake, and next to it, to the right, are two conical figures designating the wigwams of the hunter, also located upon the river bank.

The animals represented in the record were said to have been secured during the hunt.

The Innuït of southern Alaska represent a shaman's success in curing the sick, as before shown in Fig. 3, reproduced from an ivory drill bow. At the right hand are two pyramidal figures with trees, representing habitations located near a group of trees. The human figure nearest to the huts is the shaman, who had been called upon to exorcise the evil spirits which had caused the illness of the two patients. He is represented as taking hold of the

tail of a quadruped, which is the spirit, or tutelary daimon under his immediate control, and by the aid of which he expels the demons within the sick man.

The next group, to the left, represents the same shaman in the second act of his performance, which consists in grasping the patient by the arm, while he chants and awaits the departure of the demons. The left figure of the group of three is making the gesture of surprise at his relief, while at the extreme left end is indicated a complex group—in reality only two demons struggling to escape from the superior spirit controlled by the shaman.

CHAPTER VI.

GESTURE SIGNS AND ATTITUDES.

ONE of the most interesting painted records yet found within the United States is that, already referred to, in the Tule River Indian reservation of California, and represented in Fig. 2.

This region is located amid the gigantic spurs of the Sierra Nevada, and is at present inhabited only by a small band of Indians, usually designated the Tulares. An immense granite boulder, measuring about forty feet in length, twenty feet high, and as many feet wide, is so fractured that the lower, eastern quarter has been forced out so as to leave a passage way extending from north to south. Upon the interior walls are recorded the pictographs, in red, black, yellow, and white pigments. The figures are those of human beings, the largest ap-

proaching life-size, the remaining ones being relatively smaller.

The largest figure, that on the right (*a*), represents *weeping*, the arms with hands pendant, being extended as when making the gesture sign for *rain*, while the lines extending downward from the eyes denote *tears*, signifying, literally, *eye-rain* or *weeping*. It is evident that the recorder intended to convey the idea of sorrow, on account of the suffering expressed in the gestures and attitudes of others of his band shown in connection herewith.

The six figures (designated by *c*) appear to be persons of different degrees of rank or social standing in the tribe, as indicated by the various lengths of the plumes. Each of these are represented in the act of making the gesture for *hunger*, which is commonly made by passing the extended hands towards and backward from the sides of the body, denoting a "gnawing sensation." One of the figures, drawn horizontally, probably signifies that one of the party died of starvation, as he is represented

furthermore in a posture indicating a "dead man." This method of portraying *dead*, *death*, is common also among many of the Algonkian tribes.

The remaining figures, those with both hands outstretched, are drawn as making the gesture sign for *negation*, *none*, or *nothing*; while the middle one of the three large figures is represented as holding his right hand to his body, to indicate *self*, with the left extended to denote direction, *to go*; no doubt signifying that the whole group intended leaving that region because of insufficiency of game and other food, and consequent suffering from hunger.

The Indians who now occupy this valley know nothing whatever of the origin of the record, nor the tribe that made it.

Upon the petroglyphs and coloured pictographs of the Southwestern States and Territories, especially in the so-called Shoshonian area, are numerous examples of figures, in which appear attempts at the graphic portrayal of gesture signs. These refer chiefly to direction, however—as may be inferred from the

local geographic position of the record, as well as the context—as related to other figures.

Such gestures as the above mentioned (in denoting *self*, pointing either to one side, or the other, as in direction, and again the extending of both arms with spread fingers, to denote *nothing, none*) are very frequent. When the last-named gesture sign is found upon a record, there is usually some indication of animal or bird life, under which circumstances it would indicate that the things referred to “did not exist there.”

An exceedingly interesting fact in connection with Innuït etchings is the portrayal of animals with the head turned either towards or from the hunter, or his village, to denote that in the attempt to secure them he was successful or otherwise.

In other words, when an animal is captured in hunting, it is depicted with its head towards the hunter; whereas, if facing in the opposite direction, it indicates that the species so noted was desired, but not captured.

In thus reading towards the face of the fig-

ure we find the same principle to survive as in the etchings of the Easter Islanders and the

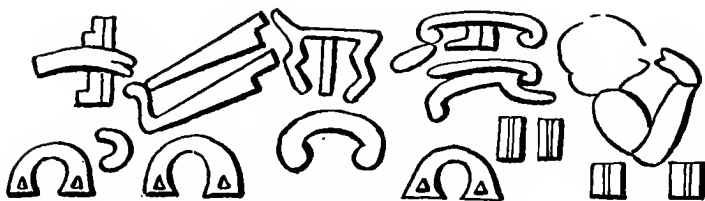


FIG. 55.—Hittite inscription at Hamath.

Hittite inscriptions, an example of the latter being reproduced in Fig. 55.

In this, the inscription begins at the right-hand upper corner, with the figure representing the hand placed to the mouth, denoting *voice* or *speech*. The reading of Hittite records continues across the line, and then returns with the next beneath, towards the right, and so on to the end.

The Innuits are exceedingly clever in delineating gesture signs, and frequently portray them upon slabs of wood or boards, when necessary to put up records of notification to inform passers-by of their absence from home and the reason therefor, or to solicit food when in want.

The characters in Fig. 56 are reproduced from an ivory drill bow, and present the narrative of a hunter, which he left inscribed upon a strip of wood near his hut. In the left-hand figure he touches his body with his right hand to indicate *himself*, and with his left he points towards the locality he is about to visit, denoting *to go*, and signifying that *he is going*; in the second figure he holds aloft a boat paddle to signify that he is going by *boat*. In the third figure his right hand is placed to the side of the head to denote *sleep, night*, the left hand being held up to signify *one*—i. e., one night. In the fourth or circular figure is represented an island, the two central spots upon which indicate habitations where he intends to spend *one night*. The fifth figure is a repetition of the first, denoting *to go*; while the following one, the second circular one (without central spots,



FIG. 56.—Alaskan hunting record.

however), represents the locality where the hunter is going, a place without habitations, and where he intends to remain *two nights*, as shown in the next succeeding figure, in which one hand is placed to the head to denote *sleep*, and the left extended with two fingers elevated to denote *two*—i. e., *two sleeps or nights*.

In the succeeding figure the hunter is represented as holding his harpoon, while with his left hand he makes the gesture sign for *sea lion*, by holding the flat hand edgewise, the thumb extended and elevated, and the hand then thrust outward and downward in a slight curve, to represent the animal swimming.

The next character represents the animal itself, while the figure to the right denotes the hunter shooting it with an arrow. This figure is followed by one representing a canoe, or *baidarka*, containing two persons; the paddles project downward beyond the body of the canoe, to signify that the purpose or the journey had been accomplished, and that the recorder then returned to his hut; this is in-

licated by the triangular figure at the extreme right end of the illustration.

Fig. 57 is reproduced from an Innuït record which had been placed over the door of a



FIG. 57.—Record of departure (Innuït).

house to notify callers that the owner had gone on a journey.

The first, third, fifth, and seventh figures represent the person spoken to, the absence of arms denoting his having no special connection with the record. The second figure from the left, indicates the speaker himself, as is shown by his touching his side with the right hand, thus indicating *himself* as going in the direction signified by his extended left hand.

The fourth figure is in the attitude of making the gesture sign for *many*, made by spreading out both hands with fingers extended; while the sixth figure represents the gesture for *sleep* or *night*, by placing the right hand to the side of the head, while with the other hand he indi-

cates a location at some distance—i. e., at a *place*, or at *that place*, distance being indicated by the unusually high position of the left hand pointing forward ; this signifies that he will be many sleeps or nights at some distant place. The figure at the extreme right of the series is represented as making the gesture of returning whence he came ; this is indicated by the right hand pointing back towards the point of departure, while the left arm and hand is recurved to denote *coming back*, or to go in the direction indicated by the right.

In another Innuït etching, as shown in Fig.

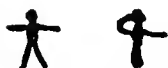


FIG. 53.—Nothing to eat (Innuït).

58, is portrayed the idea of *nothing to eat*, the first figure having both hands thrown outward from the body to signify *none* or *nothing*, while the sign for *food* or *to eat* is made by the second figure by having the hand placed to the mouth.

The gesture signs to denote *food* and *to eat* are similarly portrayed by the ancient Egyptians, while in some of the Mexican codices the quantity of food allowed is represented by

discs or circles placed above or near the head, indicating the tortillas or bread served. These circles usually have dotted centres, perhaps to indicate the granular character of the substance, or perhaps even denoting small punctures simply as ornaments, thus resembling the short markings upon the hieroglyphic character for cross-buns, or raised bread.

The Ojibwa birch-bark records contain numerous characters in which the attempted reproduction of gesture signs is apparent. Most of these records relate to the cult society of the Midē', and are of interest chiefly for comparison with similar pictographic records from other parts of the world.

The illustration presented herewith in Fig. 59 represents a Midē' or medicine man supplicating the Great Spirit for assistance. The universal gesture for supplication is the elevation (or extension upward and forward) of the hand or hands. This is of frequent occurrence in the Mexican codices.



FIG. 59 —
Supplication
(Ojibwa).

In the Egyptian hieroglyph in Fig. 60, and


even in the Chinese, as is shown in the symbol for hermit, the modern character *sian* is evolved out of the primitive hieroglyphic , which, according to Lenormant,* is the sign of a man over the sign of a mountain.



FIG. 60.—
Supplication (Egyptian).

Upon more careful examination of this character it will be observed that the figure for *man*, though drawn in a horizontal posture, has his hand in the same uplifted attitude as the preceding illustrations, to denote the gesture *supplication*, *request*, or *to beg*. Now, if the figure be viewed from the right side of the page, the outline of the body, leg, and elevated arm will become intelligible. It is the practice of Oriental hermits, to a great extent, to make begging a profession, and the idea is beautifully portrayed both in the gesture named and in his solitary retreat in the mountains.

The representation of the locust with the death's-head (a fore leg bearing four very pro-

* Lenormant, *op. cit.*, vol. i, p. 211.

nounced claws and a circular termination of the shoulder joint where the leg joins the body) presents to view several remarkable ideas clearly suggested in the illustration reproduced in Fig. 61.*

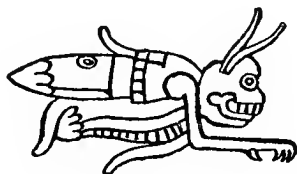


FIG. 61.—Chapolin (Mexican).

The fore leg is in the position resembling the hand and arm when making the gesture for *grasp*, *steal*—made by reaching forward with the right hand, with the thumb and fingers curved like claws, and forcibly grasping at an imaginary object, then closing the hand and slowly withdrawing it; the shoulder joint, or rounded shoulder, suggests mobility of that joint. Were this not specially intended, the fore leg would perhaps have been indicated in a less conspicuous manner, and a little more attention given to portraying the hind legs, which should be the largest and strongest, but which are entirely ignored.

* Kingsborough, vol. ii, Codex Viennensis, plate i.

The presence of a death's-head upon an orthopterous insect appears to suggest rapacious and death-dealing habits, as is exhibited in the Rocky Mountain locust, which destroys the vegetation and grain, causing devastation and famine among the inhabitants and death among the animals in the community.

SPEECH.

Speech is represented in Egyptian hieroglyphic writing by the outline of the human figure with one hand placed to the mouth; this character may also, under different circumstances, signify *nourishment*. In pictographs made by the American Indians there are marked distinctions in the graphic portrayal of the ideas of *speaking*, *conversation*, and *singing*.

Speaking, as by one person, is indicated by the outline of the human head, with either a waving or undulating line emanating from the mouth. A straight line is sometimes drawn, but it may then denote a tube, such as is used by shamans in pretending to exorcise or ex-

tract evil spirits from the bodies of the affected ones. The ordinary method of portraying speech is by simply placing before the mouth a waving line.

In complex ideographs, or in pictographic records of that variety ordinarily drawn by the Indians, the "voice lines" are sometimes indicated as extending from the speaker's mouth to the object spoken of or to the person to whom he may be addressing himself. This practice is of frequent occurrence among the Comanches, Kiowas, and Cheyennes.

The Mexican codices are replete with illustrations of human figures having before the mouth the voice marks or commas to denote speech. These voice marks or commas, issuing from the mouth of the human figure, are expressed in Nahuatl by the word *tlatolli*, from the verb *tlatoa*, to speak, to cry out—as an animal.* According to Orozco y Berra these virgules or commas represent the verb *to blow* or *to hum*.

An illustration of *speech*, as thus repre-

sented, will be found in connection with the following explanation of a complex pictographic character in Fig. 62.

The so-called pupil or eye in front of the forehead represents also a star, and signifies



FIG. 62.—Mexican illustration of speech, time, etc.

that the beholder sees everything about him—i. e., never sleeping. The two ornamented circles directly before the voice lines seem to be time symbols, but the original record being defaced by folding, no positive conclusion is given. Five

discs appear to have existed which would seem to denote forty-five years. Above and below are the double ideographic signs, *tetl*, stone, to indicate the locality Tenayocan (from *tenamitl*, wall, barrier or rampart).*

In the accompanying figure (63) is reproduced an illustration of the Ojibwa method of

* Boban, *Op. cit.*, p. 103, Atlas, plate ii.

designating the two chief deities, who are represented by two small circles, with short lines radiating therefrom to denote their sacred attributes. The waving lines descending towards the ground, a lower transverse line, signifies that the spirits are telling the shamans or medicine men in what part of the earth the sacred remedies most sought after may be found. In a similar manner a shaman portrays his conversational power with the Great Spirit, by representing himself as a circle, with a waving line extending upward to another circle, the latter denoting the deity addressed.

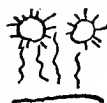


FIG. 63.—Deities communicating with shamans.

Conversation between two persons is represented as in Fig. 64, the two circles denoting the speakers, while the connecting line represents the voice.



FIG. 64.—Conversation between two shamans.

Another mode of graphically illustrating conversation between two persons is shown in Fig. 65. One is the maker of the record and the other the anthropomorphic

form of his favourite *manido*, or spirit, with whom he considers himself upon an equality.

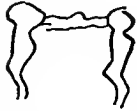


FIG. 65.—Conversation.

The double voice lines designate *speech* from both figures.

The Mexican codices present numerous examples of figures representing conversation, the voice marks or commas being depicted in various positions between the speakers.

SINGING.

Singing is represented by the Ojibwa as shown in Fig. 66. The lines drawn from the



FIG. 66.—Singing (Ojibwa).

mouth would not, by themselves, indicate any specific kind of vocal utterance, but the designation within the body of the heart (the lines of which are repeated within that organ) denote joyous emotion giving expression by singing. The same character is used also to denote *being happy* or *pleased*. The Dakotas, in one of their winter counts, represent whooping cough

by a number of lines, though longer and more divergent than in the above illustration.

The Ojibwa of Red Lake, Minnesota, portray the croaking of a frog as shown in Fig. 67, the several divergent lines denoting the sound.



FIG. 67.—Frog croaking.

The name of the King of Tlatelolco* was Cuauhtlatoatzin, from *cuachtli*, eagle, and *tlaoa*, sing, thus designating Singing Eagle. The syllable *tzin* is a reverential terminal. In Fig. 68 the eagle is represented by synecdoche, and the voice marks, being directed upward, as also in *prayer* or *adoration*, denote *to sing* or *singing*, and signify in this connection with the figure of the eagle's head a proper name.



FIG. 68.—Singing Eagle (Mexican).

Ordinarily the Nahuatl pictographs represent the voice marks as directed forward to indicate speech as distinct from singing.

The character to represent *to sing* is fur-

* Boban, i, p. 23.

thermore illustrated as shown in Fig. 69, from Aubin's collection.* The mouth is shown with the voice mark directed upward and forward. *Speech*, in Egyptian hieroglyphs, is represented by having the hand placed to the mouth.



FIG. 69.—Singing
(Mexican).

In the Hittite inscriptions (of which an illustration is given in Fig. 55) the initial character denoting the line at which the reading begins is the portrayal of the human body and head, with one arm so elevated as to bring the hand to the mouth to signify *speech*.

The absence of speech, indicating a mute, is portrayed in the Mexican codices † by several lines drawn horizontally across the mouth and cheek of the human face *en profile*. This appears very much as if the mouth were bandaged, and clearly represents impossibility of intelligible utterance.

* Boban, i, p. 23.

† Ibid., i, p. 23.

SIGHT.

Seeing is represented in Ojibwa pictographs by straight or waving lines drawn forward from the eyes. This is merely a graphic representation of the gesture, which is made by passing the extended forefinger forward from the eyes.

To *search* for anything is expressed in gesture by passing the separated and extended fore and second fingers forward from the eye, then moving them from side to side—nearly at arm's length from the face—and indicating imaginary places before the speaker. If a special object is sought, it is first designated by its proper gesture sign, followed by that for *search*.

In this manner searching is expressed in pictography as in Fig. 70, from a Dakota record.* The name of the individual is Searching Cloud, the cloud being drawn above the head, and connecting



FIG. 70.—
Searching Cloud
(Dakota).

* Fourth Ann. Rep. Bureau of Ethnology, plate lvii, No. 65.

therewith to denote its being a personal name ; the lines from the eyes being directed towards the cloud, signifying *looking for* or *searching*.

An Ojibwa character, obtained from a mnemonic record, represents the crane, as the symbol of that totem, with several short lines directed forward from the eyes, and terminating near a short vertical bar. The signification is that the Crane people are possessed of *sharp sight*, so penetrating that it passes through a metallic barrier.

The waving lines directed outward from the head should not be confused with the short lines running downward—sometimes added as well in the same figure—to denote *weeping*. The latter, if extended downward towards the earth as low as the feet, or if some object be attached to the end of the lines, indicates *searching* for something in the earth, or at a place near by, though invisible.

Reference has been made to a hunting record, made by a Hidatsa Indian, to indicate his effort in searching for his companions who had followed a buffalo. Upon examining the illus-

tration, here reproduced as Fig. 4, the trail or dotted lines pursued by the animal and the hunters is clearly indicated. The recorder shows the animal itself at the top, while beneath it, at intervals, are three human heads. The lower one represents the recorder himself, who had followed the party, but had lost the trail on account of darkness. Finally he shouted, to ascertain if his friends were within hearing distance. Continuing again in the probable course pursued by the Indians, he again shouted to ascertain if the party was or was not within hailing distance. Hearing no response, he started forward and soon again cried out, when, to his relief, he received a response, and soon joined the hunters who had encamped for the night. Buffalo meat was served, as the animal had been secured early in the day.

In the Nahuatl character, as reproduced in Fig. 71, no indication of lines to denote sight will be observed; but instead, small nucleated circles, similar to the figures employed to sig-



FIG. 71.—Seeing (Mexican).

nify stars—with which, in truth, they are identical; these represent that the person near whom, or in front of whom, they may be placed sees all that is transpiring—i. e., he is *never sleeping*.

HEARING.

Hearing is portrayed in Ojibwa records by placing a waving line to either ear, and extending it outward a short distance from the head. To distinguish this from the specific idea of listening, the latter has the lines directed outward, and upward or downward, as if trying to hear sounds at a remote distance.



FIG. 72.—Out of hearing (Ojibwa).

Fig. 72 is reproduced from a shaman's record, and illustrates the method of portraying graphically the idea of *hearing*, as well as the additional indication of the gesture sign for *negation*, thus signifying *not hearing*; or better still, as the shaman explained it, *out of hearing*.

The Ojibwa represent *deafness* by a similar

drawing. The gesture sign for *no*, *none*, or negation generally, is made by throwing the hands outward to either side from the front of the body.

Another method of representing *to hear* and *to listen* is by drawing the oval outline of the human head with semicircular appendages at either side, to denote the ears. But one ear will sometimes be indicated, and when the shaman is desirous of intimating that the listening is towards some indefinite spot beneath the earth—the abode of the bad spirits—the head will be drawn so as to place the ear towards the ground.

EATING.

Closely connected with the graphic sign for *speech* is that for *eating*, the gesture for which is made by placing the hand or forefinger to the mouth, or by simply directing the tips of the fingers towards it, opening the mouth at the same time.

The most interesting pictographs expressing this idea are found upon wooden tablets of the

Easter Islanders,* an example of which is reproduced herewith in Fig 73.



FIG. 73.—Eating (Easter Islands).

Various forms of graphic execution and attitude occur on these inscribed tablets, but in all instances the conception appears to be the same.



FIG. 74.—Eating (Mexican).

The Mexican character for the same idea is expressed in the same manner, as shown in Fig. 74, the mouth *en profile*, with a piece of tortilla or other like food projecting therefrom.



FIG. 75.—Drink (Mexican).

Closely allied to this is the Mexican symbol for *drink*, as in Fig. 75, made by placing to the mouth the character signifying water.

NEGATION.

The gesture for *negation*—*no*, *none*, *nothing*—is almost universally made by throwing the

* *Op. cit.*, plate xlii.

hands horizontally outward towards their respective sides. In various Ojibwa pictographic portrayals of this gesture are found, an interesting example being that already given as Fig. 72, in connection with the character for *hearing*.

In the illustration given by De Landa as one of the alphabetic characters of the Mayas* (here reproduced as Fig. 76), the arms are shown as extended, as if grasping an object, the hands being denoted by circles and not extended fingers.



FIG. 76.—Negation (Maya).

The character signifies alphabetically *ma*, from *mak*, a six-foot measuring rod for measuring land, and which, no doubt, suggested its phonetic value, as the hands would be thus extended in grasping the rod when stooping to measure along the surface of the ground.

The Egyptian hieroglyph for the same idea is shown in Fig. 77, from a tablet at Abusimbel,

* Brasseur de Bourbourg, illustration given by Dr. Brinton in *Essays of an Americanist*, *op. cit.*

in Nubia, addressed to Ramses III by an African prince, B. C. 1550.* The character is common upon other ancient Egyptian records, and the gesture for negation is clearly drawn, as well as suggested, by the physically impossible close position of the elbows, suggesting an outward movement of the forearms.



FIG. 77.—Negation (Egyptian).

Closely related to these gestures is the hieroglyphic portrayal of the gesture sign to denote the left, as shown in an inscription on a dedicatory stela in the palace of Amunoph III, in which it is related that upon the *left bank* of the Nile two obelisks are erected.



FIG. 78.—On the left (Egyptian).

The illustration is reproduced as Fig. 78, and shows the left hand as viewed from the front.†

* Gliddon, *op. cit.*, p. 27.

† Gliddon, *op. cit.*, p. 25.

TO KILL.—DEAD.

The accompanying illustration (Fig. 79) is a reproduction of characters etched by an Innuite, upon a piece of walrus ivory, to record the death of his victim.

The left-hand figure, resembling a long-handled fan, is called a shaman or medicine stick, upon which is the figure of a bird. This stick is erected as a votive offering, or grave stick, as it is designated by the Western Indians. The middle figure, of a headless man, represents the victim who was killed and beheaded by the person indicated at the extreme right. The victim was a hunter, a harpoon being held in his right hand, denoting that he was a whale hunter. The recorder, at the right, who erected the grave stick and made the etching, is represented as having his arm thrust forward and downward towards the ground, in imitation of the gesture sign *to kill*.



FIG. 79.—Innuite votive offering.

To guard against having ill luck in hunting and fishing, and to appease the anger of the spirit of the departed, he placed upon the medicine stick a bird—the best or luckiest fetich that can be offered by him. The belief prevails among the southern Innuït that “flying gods” are good ones, while “crawling” or “swimming” ones are evil.

The victim furthermore is represented as *dead* by his being headless, a practice common to many tribes within the United States. *Death* is frequently indicated by a blackened body, in imitation of the blackening of the face in mourning; also by attaching to the human figure or head, or to the totem of the victim, the outline of the weapon or instrument that caused death, as an arrow, a gun, or a club. The Ojibwa denote death by drawing upon the grave-board, in an inverted position, the totemic character of the person intended. In this is imitated the gesture sign, made by throwing the flat, extended hand, palm down, outward and downward, in such a manner as to end by having the palm up.

FIRE.—FLAMES.—SMOKE.

The Ojibwa represent *fire* and *flames* as reproduced in Fig. 80. The small square object at the bottom denotes the ground, while the short vertical lines above it signify the tongues of fire. The arm portrayed above signifies the arm of the recorder, the shaman, and represents him as preparing a mysterious preparation over the fire, and also as being able to grasp fire without injury to himself. "Juggling with fire" is frequently performed by certain Ojibwa, designated *wâbeno*—i. e., "daylight men"—from *wâban*, white, daybreak, because their orgies cease only at the approach of day. The gesture sign for fire is made by placing the tips of the fingers against the thumb, and while passing the hand slightly upward from near the ground, then suddenly extending or flipping the fingers upward.

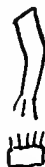


FIG. 80.—
"Fire-jug-
gler" (Ojib-
wa).

When the flame lines, as in the above illustration, are replaced by small dots, they repre-

sent mystic or sacred power; and the figure then signifies that the shaman professes the ability to extract from the earth magic and supernatural powers.

When the figure of an arm is so drawn as to extend upward instead of downward (and a short curve is placed a little above the hand, with radiating strokes above the curve), the strokes have reference to the *light* of the sun and denote *clear day*.



FIG. 81.—“White bear of Fire” (an Ojibwa deity).

In Fig. 81 the flame lines are again presented, but in this instance they descend from the figure of a human head. The object is symbolical of the “white bear manido,” the lines below the head denoting flames, while the eyes are directing their penetrating gaze towards the place inhabited by mortal Indians. The waving lines extending downward from the eyes denote *sight*, and the gesture sign to express this sense is made by passing forward from the eye one or two fingers of the right hand.

Similar lines, when waving or undulating,

indicate magic things or property belonging to the cult society or to the members thereof ; and lines extending upward from a horizontal bar or line—denoting the earth's surface—represent “magic influence” ascending.

In the Mexican codices *fire* is represented by short flame-like objects—tongues of fire. Near the top of these are short volutes or commas, similar in type to the speech or voice commas. The latter represent smoke, *popoca*, and may be found also as a better illustration in the symbol for the volcano, *popocatapetl*, the *popoca*, smoke, issuing from the mountain cone or *tepetl*.

The primitive method of making fire, by rotating a firestick between the hands, thus creating friction upon a second piece of wood, is represented in the codices as shown in Fig. 82. The fire is here indicated by the ascent of smoke symbols. The Indian gesture sign, as made even at the present day, is by rubbing



FIG. 82.—Making fire
(Mexican).

together the palms as if rotating a stick, and then making the sign for *fire* or *flames* as above indicated.

Smoke is represented in contact with celestial bodies also to denote any great catastrophe. An instance of this kind is recorded in connection with the arrival in Mexico of the Spaniards.

The stars are here represented as smoking and falling from their position in the heavens.

LIGHTNING.

Lightning is represented among the Ojibwa and neighbouring tribes by the eagle or "thunder-bird," this being a deity whose voice is the lightning, and whose moving wings causes the thunder and the winds. The "thunder-bird" is usually designated by the picture of an eagle, though by a process of conventionalising he is represented by a rude cross, and rarely by a T-shaped figure.

Among the Pueblos generally lightning is divided into two kinds, harmful and harmless. The former is designated by the conventional zigzag lines of which one end terminates in an

arrow point, while the harmless lightning has only a small ring or knob instead of the arrow point. The lightning is generally shown as emanating from the ordinary cloud symbols, as in Fig. 83. The gesture for lightning is made by rapidly passing the extended index finger in an irregular course from one side to the other, and from above slightly downward.



FIG. 83.—Lightning.

Lightning is represented by the ancient Mexicans, as well as by the Pueblos, as a serpent descending from the clouds.

CHAPTER VII.

MNEMONIC SIGNS.

SIGNIFICANCE OF COLOURS.

AMONG all people specific significations have always been attached to certain colours. In this country, at the present day, black is associated with mourning, white with youth and innocence, red with danger, and yellow with epidemic disease.

The signification of a colour as recognised by one people may be at variance with the prevailing custom of another body; indeed, in some instances, the colour and its interpretation as recognised by civilised folk is in direct opposition to that held by some semi-civilised and barbarous nations.

The designation of colours (as pertaining to social or tribal customs as well as war and cult

practices) has much to do with the proper interpretation of pictographs. For instance, the Sioux Indians formerly painted the face, from the eyes downward, red when going to war, whereas the Crow tribe painted the forehead only. As both these tribes portray personal and tribal exploits in a similar manner, this peculiarity of facial decoration alone often aids in determining the authorship of a painted robe. Faces painted black usually designate mourning, while various stripes and spots may generally be accepted as indicating the person so decorated to be a shaman or medicine man, or a member of a particular gens or clan.

Among the members of the Ojibwa cult societies green and red colours are employed for facial decoration, the arrangement thereof in stripes or spots depending entirely upon the rank or status of the person decorated.

Upon the ceremonial post planted in the enclosure (erected for the observance of ceremonies of the fourth degree of the medicine society) are displayed four colours, placed upon four sides so as to face the cardinal points, or

rather the abode of the *manido* ; thus, *white* on the east to signify the source of light ; *green* on the south to denote that from that direction come rains and warmth to cause the appearance and growth of vegetation ; *red* on the west, as the direction of the path taken by the dead whose “ shadows ” are on their way to the “ land of the setting sun,” the abode of the brother of Manabush ; and *black* on the north as indicating the place of cold, hunger, and disease.

When an eagle plume, upon which there is no colour, is attached to the head, it designates the wearer to have shot an enemy. A red bar across the middle of the feather shows that he was the first to touch the fallen enemy ; two bars, the second ; three bars, the third ; and four for the fourth.

Among the Sioux a black feather shows the wearer to have killed an Ojibwa ; and when the central part of the quill (the shaft) is wrapped with coloured porcupine quills it indicates that he has killed a woman.

Frequently such characteristic exploits are

indicated by colour designation upon buffalo robes and upon sheets of canvas.

In the Mexican codices colours play an important part and possess a phonetic value. The word for yellow is *cuztic* or *coztic*; and when the hieroglyphs express phonetically such words as *Acozpa*, *Cozamaloapan*, or *Cozhuipilcan*, the monosyllable *coz* is expressed solely by the yellow colour which the scribe lays upon his picture.*

The colours employed in Egyptian hieroglyphic writing were unusually black and red, and although the system may be termed polychromatic, the colours do not appear to possess phonetic values, as in Nahuatl.

The colours applied to symbols are not arbitrary on the part of the artist, but were applied according to systematic rules, more or less consistent with the nature of the object.

Gliddon † asserts that the chief colours in the characters were *blue* for the heavens; *red*

* Dr. D. G. Brinton, *Essays of an Americanist*, Philadelphia, 1890.

† Gliddon, *op. cit.*

for Egyptian males, and *yellow* for females. Other nations were represented as nearly as possible according to the colour of the skin: Asiatics by various *flesh* tints; Berbers by different shades of brown, and negroes by *black*.

QUIPUS, OR KNOTTED STRINGS.

The Peruvian system of knotting strings for recording numbers and other statistical information is probably more familiar than any other. The quipus consisted of a central or main cord, to which were attached, at various distances, thinner strands of different colours, which were knotted in various ways for special purposes.

Dr. Andree* states that the system was mnemonic, though the method of knotting the strings, as well as their subsequent interpretation, was to be acquired by instruction given by persons specially skilled in this art. The strands were of different colours, each having

* Ethnographische Parallelen und Vergleiche, von Richard Andree, Stuttgart, 1878, p. 195.

its special signification ; thus, the *red* indicated soldiers ; the *yellow*, gold ; the *white*, silver, etc.

Single knots signified ten ; double knots, one hundred ; two single knots, twenty ; two double knots, two hundred.

Among the herders of the Puna an almost similar system survives, various kinds of knots being used to designate the kind, age, and sex of the different animals owned or pastured.

This resembles, in some respects, the practice of the Paloni Indians of California, whose method was as follows : Each year the Paloni selected a certain number of their tribe to visit the settlement, at San Gabriel, to sell native blankets ; every Indian sending goods provided the salesman with two cords made of twisted hair or wool, on one of which was tied a knot for every *real* received, and on the other a knot for each blanket sold. When the sum reached ten *reals*, or one dollar, a double knot was made. Upon the return of the salesman, each person selected from the lot his own goods, by which he would quickly perceive the amount

due, and also the number of blankets for which the salesman was responsible.

Among the Zuñi a more highly developed method of knotting obtained. It appears possible that certain strands pertained to cult practices, others to war, etc.; knotted fringes attached to the paraphernalia of members of cult societies appear to be survivals of such practice.*









The celebrated Chinese historical work entitled *Yih-K'ing* mentions that previous to the invention of writing there had existed in China a conventional mnemonic process of tying knots in cords. In the appendix to the work named, the philosopher *Koûng-tsèu* (Confucius) says: "In great antiquity knotted cords served them for the administration of affairs. During the following generation the saintly man *Fou-hi* replaced these by writing."

"Legend," says Mr. Gardner,† "places the tying of knots in strings at about 2800 B. C.,

* Personal information given by Mr. Frank H. Cushing.

† C. Gardner, *Journal Ethnological Society*, London, ii, 1870, 5-13.

when Fo-hi invented eight symbols, and at the same time pictorial representations of these knotted strings were taken to represent the object thereby symbolised.

“These symbols are  heaven, or *prevailing principle*;  balance;  water;  earthquake;  wood;  sacrifice;  boundary, and  the earth.”

Another Chinese legend tells us also that “the most ancient forms were five hundred and forty characters, formed by a combination of knotted strings and the eight symbols, made in the form of birds’ claws in various states of tension, and that these five hundred and forty characters were suggested to the inventor by the marks left on the sand.”

Leaving legends, we find that the Chinese themselves have from the most ancient times classified their characters under six heads, and that this classification, although made in times too remote to admit of any date being affixed, yet holds good in the present day. These divisions are :

1. Ideographic.
2. Figurative-combined.
3. Indicative.
4. Reversed.
5. Borrowed or metaphoric.
6. Phonetic.

The ancient Egyptians were, without doubt, familiar with similar methods of tying knots in cords for the purpose of calling to mind certain matters of information. This appears evident from the fact that one of the hieroglyphic symbols consists of the reproduction of the knotted and looped cord itself.

The discovery in Egypt of any remains of knotted cords relating to this subject is not to be expected. The origin of writing is so remote that no textile fabric anciently employed for the purpose is likely to have escaped disintegration or decomposition.

NOTCHED STICKS.

Several tribes of Indians, in California, employed a variety of tallysticks to record transactions in business—i. e., pertaining to labour,

money, cattle, and horses. The sticks were squared and nearly one inch thick, from eighteen to twenty-four inches long; upon the side or face were incised short cuts to denote numbers up to *nine*, and a long cut across the width of a face to denote *ten*.

When labour days or *reals* and *pesos* are noted, nothing else is required upon the stick to denote the class to which it belongs; but should cattle be indicated as in charge of the herder (who is responsible for them), the extreme end of the stick would have a V-shaped notch to suggest horns; when horses were intended to be thus noted, the end of the stick would be sharpened into a wedge-shape, resembling the pointed ear of a horse.

Sticks relating to oxen, cows, stallions, mares, colts, and calves were each specially differentiated by crosses, squares, and V-shaped cuts on the handles; duplicates of such were always retained by both interested parties.

Sticks so marked, with short and long cuts, appear very much like the Irish oghams, though the strokes upon the latter have alphabetic val-

ues ; they may have had their primary origin in a similar mnemonic process.

In England an ancient mode of keeping account by notching sticks was kept up by the British Exchequer long after better modes were in use everywhere else.

The sticks—one for the creditor and the other for the debtor—were made to fit together at one end by one piece being a little shorter than the other, the space beyond the end of the shorter one being occupied by the wider and projecting side of the longer one. The tallying of the notches was taken as a proof that both were genuine.

Till half a century ago it was customary in Scotland for the baker's lad to bring the *nick-sticks* with his bread, a notch being made for each loaf he left. While the notches on his stick correspond with those on the one left with the family, both parties were satisfied that the account was justly kept.

According to Dr. Plot, the Clog Almanac was in use in the northern counties in 1686, but was unknown farther south. From this fact

and from its being used also in Denmark, he conceived it to have come into England with the Danish invaders many centuries before.

The Clog bore the same relation to a printed almanac which the Exchequer tallies bore to a set of account books. It consisted of a square piece of boxwood, about eight inches in length, fitted to be hung up for reference. Properly it was a perpetual almanac, designed mainly to show the Sundays and other fixed holidays of the year.

“There were short notches for days cut into one edge of the stick and longer ones beside other characters upon the two sides, the faces and edge representing three months.

“The first day of the month was marked by having a patulous stroke turned up from it; Sunday by a broader notch. The most interesting portion is that relating to feast days, the symbols or hieroglyphs denoting them as follows: For instance, from the notch indicating the 13th of January proceeds a cross, as indicative of the episcopal rank of St. Hilary; from that on the 25th, an axe for St. Paul, and

such being the instrument of his martyrdom. Against St. Valentine's day was a true-lover's knot, and against St. David's day (March 1st) a harp, because the Welsh saint was accustomed to praise God on that instrument.

“Many others are noted, but it may be of interest to observe that Christmas was indicated by a horn, ‘the ancient vessel in which the Danes used to wassail or drink healths, signifying to us that this is the time we ought to make merry, *cornua exhaurienda notans*, as Woomius will have it.’”

CHAPTER VIII.

GROWTH OF CONVENTIONAL SIGNS.

QUITE a number of examples of conventionalised signs have already been described in connection with the subject of personal exploits, and metonymical and synecdochical ideography. The presentation of further examples will better illustrate the scope of the development and abbreviation of pictography, especially as practised by some of the Indian tribes.

The rudest way of designating *man* is by a simple dot or spot, as in some Arikara pictographs; the same idea is portrayed by the Inuit by a vertical bar or stroke for a *living man* and a horizontal one for a *dead man*.

The illustration of two men seated in a *baidarka*, consisting of a horizontal stroke with two diagonal ones, as in Fig. 84, is the Inuit method of drawing seal hunters, the oars or

paddles project below the body of the boat, while the men are shown by the same lines above it.



FIG. 84.—
Inuit seal
hunters.



FIG. 85.—
Man (Inuit).

Another similar etching, though more life-like, is produced in Fig. 85. This is similar to the general type of the human form, as found in pictographic records distributed over the Shoshonian area of the Western States and Territories. The

various representations of the human form shown in Fig. 86 are all from petroglyphs in Owen's Valley, California.

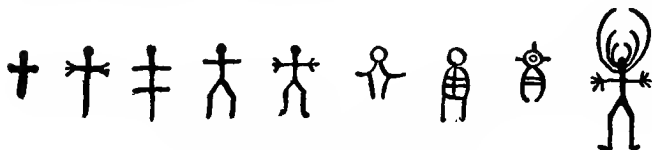


FIG. 86.—Various types of the human form.

Those with arms extended appear especially to represent gesture signs for *negation*; some of the figures, on account of their connection in the petroglyphs with animal forms, would appear to denote *surprise*, or to portray the act of chasing game towards a point where hunters

were lying in wait for an opportunity to shoot their arrows.

The right-hand figure of the series seems to denote a personage of high rank, a chief or shaman. The headdress of plumes would denote such rank. The next figure to the left is also characterised by lines which, among some tribes, denote superiority in cult practices or shamanism.

Among the western foothills of the Sierra Nevada, at Tule River, California, and southwest of the Owen's Valley group of petroglyphs above mentioned, is a large series of painted pictographs to which special reference has already been made, among which quite a number of the human figures are portrayed in the attitude of making gesture signs, as in Fig. 87, *a* and *b*,



FIG. 87.—Signs for negation.

both of which are drawn as making the gesture for *negation*, *none*, or *nothing*.

The right-hand figure (*b*) closely resembles one from the same series which is intended

to represent a beaver, the only difference being in the arrangement of the lower extremities.

A very common form found among the



FIG. 88.—
Negation (Moki).

Moki or Shinumo petroglyphs is reproduced in Fig. 88. It is remarkably like one figured by Strahlenberg, from the Yenisei River in Siberia.*

The Ojibwa and neighbouring tribes represent *dead* or *killed* as headless,

the sex being indicated by the lower half of the figure, as in Fig. 89, *a* being

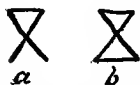


FIG. 89.—Man and
woman, dead
(Ojibwa).

the symbol of a headless or *dead* man, while *b* designates a headless or *dead* woman. The closing of the space between the feet denotes the skirt. Some-

times women are also represented by the figure of a man, but have in addition thereto the indication of the mammæ.

Fig. 90 represents a Dakota drawing to de-

* Strahlenberg, An Historico-Geographical Description of the North and Eastern Parts of Europe and Asia. London, 1738, 2 vols.

note *woman*, the skirt being indicated beneath the head and arms. This is very similar to the rudely drawn goddess Tanit (Fig. 91), as represented upon the steeples at Carthage;* and the same deity is frequently found also with an inverted crescent placed above the head, the transverse lower line of the skirt being absent, thus giving the figure the appearance of a stool with legs, as in Fig. 92.

To such portrayals of the human form various slight additions may make a vast difference, both in appearance and signification. A man drawn in the act of walking — or even standing — with a staff, denotes, both in Ojibwa and Egyptian hieroglyphs, either *chief* or *aged*. When the former, the staff is representing as being thrust towards or into the ground—i. e., taking *pos-*



FIG. 90.—Woman
(Dakota).



FIG. 91.—The
goddess Tanit.



FIG. 92.—The
goddess Tanit.

* Perrot and Chipiez, *History of Art in Phœnicia and its Dependencies*. London, 1885, vol. i, pp. 80, 81, Figs. 29, 30.

session; whereas in the latter the attitude is one less expressive, and simulates *walking*—i. e., locomotion with the aid of a staff.

The portrayal of a *chief*, as made by the Dakotas, frequently presents short fringes attached to the arms, in imitation of the ermine ornamentation worn by persons of high rank; such ornamentation is liable to create confusion in the interpretation of records, as it resembles the pinions upon the wings of the eagle, when this bird is portrayed to designate the thunder-bird or thunder god.

In fact, the human figure with wing-like arms is, according to Schoolcraft, symbolical of an American.*

Abbreviations also occur in which the head only is drawn to denote *man*. This method, being by synecdoche, is simple for the native artist, but often uncertain of translation and confusing to the student.

The Ojibwa represent shamans and other

* Schoolcraft, *Indian Tribes of the United States*, vol. i, plate lviii, No. 58.

classes of mystery men by attaching horns to the figure of the head, and in certain instances also the head is shown with radiating lines, thus resembling some characters to denote the sun.

The elaborate headdresses found upon some Mexican figures so hide the human form as to make it difficult of identification. These ornamental representations relate to the quality or status of the person portrayed.

The effect of conventionalising and the degradation of pictorial symbols are illustrated in the change of the human form, as presented in Fig. 93, *a*, *b*, and *c*. The figure of a *man*, as portrayed in the Egyptian hieratic writing, is shown at *a*, which gradually became more conventionalised, as at *b*, and ultimately reduced to the demotic *c*.

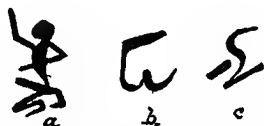


FIG. 93.—Man (hieroglyphic).

The image of the solar disc is almost universally employed to figuratively represent the sun, and by metonymy, *day*. This disc may

or may not have a central spot or nucleus. The next addition to the plain circle consists of



FIG. 94.—Sun
(Ojibwa).

rays diverging in all directions, thus also denoting *light* as well as the *sun*. An Ojibwa drawing of the sun is given in Fig. 94, in which the human face is represented; variants of this type, as made by the Moki



or Shinumo, are reproduced in Fig. 95. The Ojibwa Indians represent *sunrise*, *midday*, and






FIG. 95.—Sun forms (Moki).

sunset by drawing an arched curve from left to right, and placing above it at the left, middle,

or right a short vertical stroke to indicate the respective periods of the day. The Moki, on the other hand, indicate *sunrise* or *sunset* by placing the upper half of a rayed disc upon the horizon, indicated by a horizontal line.

The primitive Assyrian hieroglyph for sun was a diamond-shaped figure , which became later on , and ultimately, in the

Assyrian character as found upon the Babylonian bricks, .

The modern Chinese character for sun is , but in primitive hieroglyphs it was represented by .

* Lenormant, *Essai sur la Propagation de l'Alphabet phénicien dans l'ancien Monde*. Paris, vol. i, p. 211.

CHAPTER IX.

COMPARISONS.

THE usual Ojibwa method of representing *water* is by one or several parallel horizontal lines.

Water-courses, such as rapidly flowing streams, are indicated by two parallel waving lines—which denote the banks or shores. An interesting variant is reproduced in Fig. 96, from a Red Lake (Minnesota) record in which the water-course is thus indicated, but in addition thereto is the representation of foot-prints denoting *traveling, going*, to convey the idea



FIG. 96.—
Traveling
(Ojibwa).

of having traveled by water instead of by land. Had the journey been made on foot, then the parallel shore lines would have been omitted. The idea conveyed is similar to that ex-

pressed by the Delaware Indians as “water road.”

Almost similar in execution is the portrayal of the idea to walk, as shown in Fig. 97, in which are shown the footprints of the bear—not the *animal*, but the individual so named. The impressions of the claws are indicated, and but for the context it would be impossible to determine whether the pictograph indicated the animal, the track, or a personal name.



FIG. 97.—
Footprints of
the bear.

Locomotion is indicated in Fig. 111 by a man walking with a staff, to indicate *age* or indigence. This design is Egyptian, but the Ojibwa similarly represent the same idea, as indicated in Fig. 98. In some pictographs the same character conveys the idea of *possession*, the gesture sign for which is made by thrusting the clenched fist towards the earth as if planting a sharpened staff or standard, from which ancient custom the gesture may be a survival; this may some-



FIG. 98.—
Traveling;
age.

times also denote a leader or a chief, as in the Egyptian hieroglyphs given by Champollion,* and here reproduced in Fig. 99.



FIG. 99.—
Chief.

Fig. 100, *a* and *b*, are water symbols of the Moki Indians, the conception being suggested, no doubt, by the eddying current of deep, tortuous streams. These designs figure extensively as ornament in textile and ceramic productions of this tribe ; and upon some speci-



a



b

FIG. 100.—Water (Moki).

mens of pottery the subject is made still clearer by the presence of the portrayal of tadpoles.

The same symbol occurs also in Mexican codices to denote deep water, and is coloured either green or blue, and sometimes both.

The symbol to designate water (*atl*) is more graphically portrayed in Mexican picture writing by the character reproduced in Fig. 101.

* Grammaire Egyptienne, p. 400 ; also in Gliddon, *op. cit.*, p. 26.

Here it is represented as issuing from a vase, the small nucleated discs indicating drops.

In the Egyptian hieroglyphs the vase, with water flowing therefrom as a continuous line, signifies *libation* (Fig. 102), but the complete character is made by placing beneath the vase a kneeling figure with hands and arms uplifted, as in adoration, thus more clearly expressing the signification of a liquid for which the recipient is grateful, as it may have been requested by supplication.



FIG. 101.—Water
(Mexican).



FIG. 102.—Water
(hieroglyphic).

But when the vase is represented with a broken line—one appearing like a succession of dots—flowing therefrom, it denotes seed or grain.

In the Mexican codices some varieties of seeds are drawn sufficiently like the article itself to be intelligible; in other instances their context with other characters specifies the kind of seed employed. An example of this is shown in connection with Fig. 103, where the

game called *patolli* is referred to. The branches of the cross are divided into compartments, while between the arms are shown four grains of a species of kidney beans used in playing.



FIG. 103.—Cross and beans for playing game (Mexican).

In the Akkadian, *a* signifies “*water*” (the Cypriote *a*, *ya*, being probably similar), and is represented by the inverted triangle ▽, the prototype in Hittite being the vase or *olla*.

When the involute or spiral character is drawn by the Nahuatl so as to represent broken lines—i. e., not in regular continuity—it denotes *sea-water*.* This signifies, no doubt, the vortex, together with the surface broken by waves. Another Nahuatl figure for *water* is a circle within which are drawn transverse, parallel, zigzag, or waving lines or bands in blue. The usual character to designate *water* generically is represented in Fig. 75, where the symbol *atl* is portrayed in connection with the mouth to signify also *drink*.

* Boban, *op. cit.*, p. 50.

An interesting method of designating *travelling*—as compared with the Ojibwa just referred to—is shown in Fig. 104. The footprints represent by synecdoche the idea of travelling on foot to a point where a body of water is encountered, and where a boat and paddle are represented between the two shore lines to signify the manner in which the crossing was made. Beyond, the footprints again appear, denoting a continued journey on foot.

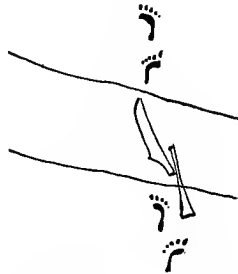


FIG. 104.—Travelling on foot and by water (Mexican).

The Egyptian hieroglyph for *water* is similar to that given in some Ojibwa records. The monumental style is more elaborate than the hieratic, though the same type survives, as in Fig. 105.



FIG. 105.—Water (hieroglyphic).

Similar zigzag lines, when placed vertically beneath a curved line—such as is portrayed for the designation of *sky*—signify *rain*; and when the Ojibwa intends to convey the idea of *snow*

or *hail*, these vertical lines are drawn either shorter than for *rain* or broken into short sections. In the Egyptian hieroglyphs we find the horizontal zigzag lines within a rectangle, to denote a *water tank*; and in the Mexican picture writing the rectangle alone is painted blue, to denote *water*.


A simplified form of the Egyptian hieroglyph for water tank is made thus , the transverse line, no doubt, being a conventionalised form of the older zigzags.



FIG. 106.—
Clouds and rain
(Moki).

Among the Pueblo Indians generally the vertical strokes to denote rain are attached to cloud symbols, as in Fig. 106.



FIG. 107.—
Clouds and rain
(Moki).

Sometimes this symbol is drawn in pyramidal form, each segment being rectangular or square, instead of semicircular, as in Fig. 107.

Among the Zuñi the tadpole is portrayed to denote *rain* as well as *water*, as illustrating the necessity in that arid country of water for the development and growth of

these reptiles. The tortoise symbolises the same idea.

In Yucatan the cross was venerated as a rain-procuring agent ;* and among the Ojibwa it is recognised as symbolic of the four localities believed to be the abode of the wind gods.

The chief deity to whom the Ojibwa makes an offering of tobacco for rain is the thunder-bird, of which the cross is a conventionalised form.

The cross was used as an instrument of punishment among many primitive nations ; as an instrument of punishment, no doubt, it became the symbol of Christianity shortly after the crucifixion of the Saviour. It is apparent that in some instances the cross or similarly shaped emblems or characters replaced older national emblems when people discarded pagan beliefs and adopted the Christian faith. This course was followed by the Danes, when their standard, bearing the raven, was changed so as to have the white cross of the Dannebrog depicted upon it.

* C. Rau, the Palenque Tablet, Washington, 1879, p. 41.

The cross sometimes represents a conventionalised form of *man*; and among the Ojibwa, apart from symbolising the four cardinal points as the abode of the wind gods, it signifies the fourth degree, of the cult society of the Midē', because, during the ritualistic ceremonies of the fourth degree, a cross is erected within the enclosure built for the purpose. In this manner are symbolised also the four sides or walls of the enclosure, in which there are openings for entrance and egress, at each of which the hero god Mänäbush had conflicts with the evil underground spirits who opposed his entrance thereto, when the Great Spirit first made known to Mänäbush these mysteries.

Crosses occur also upon Inuit ivory carvings, in which they sometimes denote birds in flight. The cross in which both arms are diagonal, as the St. Andrew's cross, represents the gesture sign for *trade* or exchange, as mentioned by Prince Maximilian zu Wied.*

* Reise in das Innere Nord America. Coblenz, 1841, vol. ii, p. 352.



The common gesture for trade is made by striking the extended forefinger of the right hand against the forefinger of the left. Similarly shaped crosses are made by the Arikara and Hidatsa Indians, as marks of personal exploits, of which mention has already been made. A similarly shaped character is found in the Mexican codices to designate terrestrial disturbances, and usually to denote earthquakes. The accompanying illustration (Fig. 108) is one of various forms of this symbol. Sometimes it is drawn horizontally instead of vertically, as in the present instance, in which the colours and stratified arrangement thereof conform to the superficial strata of the earth's surface. The symbol appears to represent a disruption of these strata, as suggested by a crevasse.



FIG. 108.—
Earthquake
(Mexican).

Various forms of crosses were drawn by the primitive Christians as sacred symbols, and, in addition to these, the dove and the fish were portrayed. Jesus Christ is represented by the symbol of a fish, the Greek word for which


(IXΘΥΣ) is a joining together of the initial letters of the five words Ἰησοῦς Χριστός Θεοῦ Υἱὸς Σωτήρ, meaning Jesus Christ, Son of God, Saviour; this, together with various forms of crosses, was employed by the early Christian as an amulet, and was engraved upon seals, rings, and other ornaments. The combination of the

X and P, however, either as  or ,

occur on coins of the Ptolemies, and on those of Herod the Great, struck forty years before our era. These symbols, as regards their *material form*, were not invented by the Christians, but they received during the early days of Christianity a new significance, which became their proper one, when they occur in the coinage of Constantine.*

The cross as portrayed by the Zuñi refers to the bright morning star, which symbolises that one of the "fire gods" who lights up the day. The cross, says Mr. Cushing, appears to

* Monumental Christianity, or the Art and Symbolism of the Primitive Church. John P. Lundy, New York, 1882, p. 125.

represent the five sticks, laid one over the other as the *swastika*, ; it is believed to represent the same idea in the Orient. In Central America the Palenque cross appears, no doubt, to be only a highly conventionalised type of the crossed firesticks, the plumes upon it representing the rising flames or smoke.

The disc, ordinarily employed in many parts of the world to denote *sun*, or *day*, is sometimes intended to signify a *dish*, as when an Ojibwa shaman desires to record the fact of having given to his colleagues a feast. Among the same Indians, furthermore, the circle may denote a "hole in the ground," from which one pretends to extract magic roots and other medicines. Again, when several circles are drawn, one within the other, as in Fig. 109, it may refer to a feast at which many dishes were used—i. e., many persons having been present; the repetition of circles suggesting augmentation, or an increased number. The same figure occurs also as symbolic of the *sun*.



FIG. 109.—
A feast
(Ojibwa).

When the circle is portrayed with a number of short lines radiating therefrom, it usually signifies the *sun*; but among the Ojibwa the same character more frequently denotes the *heart* of a shaman—one inspired by magic power and influence; and when drawn upon the birch-bark record of a shaman, of the class of shamans known as jugglers, the same figure pertains to the conical or circular wigwam—viewed from above—in which this personage secretes himself to commune with his guardian spirit, and to invoke the latter's aid and intercession with the higher and more powerful *manidos*.

The circle, with similar radiating lines, or with a stroke drawn vertically through it, signifies a shell, the *Cypræa moneta*, a small white shell used in the cult ceremonies. When this object is intended, and is carefully drawn, it can usually be readily identified by its being rather oblong than circular.

The sacred medicine drum is also sometimes represented by the mere portrayal of a circle, instead of attempting to present a side view by

which form it would appear rectangular and placed upon a horizontal line to denote the ground. The drum indicated in the Mexican codices shows also short lines below, being the feet upon which it rests.

In the pictographs of the Hidatsa Indians are frequently observed numbers of circles in close conjunction with triangles; the former denoting the circular dirt lodges or earthen houses occupied by them, while the latter indicate the ordinary tipi or tent of the Sioux and Arikara Indians.

Both square and rectangular outlines are of frequent occurrence in pictographs in many localities. The square, when made by the Hidatsa, signifies a military encampment or fort, and the confederated Indian settlement of Fort Berthold, North Dakota, is also similarly indicated, because it was at one time a military station and occupied by troops. In the ordinary pictographic record to designate this place, however, there will be found within the square small circles to indicate the circular dirt lodges of the Indians.

In some Ojibwa records the square figure denotes a "heap of goods," such as are furnished by the traders, and consisting of blankets, calicoes, and muslin. When a square is drawn within the rectangle, denoting the medicine lodge, it signifies the blanket upon which the novitiate kneels during initiation.

The rectangular outline, with or without openings at either end, is usually intended to denote the medicine lodge, or enclosure within which cult ceremonials are practised. The structure is made up of poles and withes covered with bark, mats, and canvas.

In the Mexican codices occur rectangular forms with diverse significations. Tinted blue, the rectangle denotes *water*; with horizontal lines drawn across it upon which are arrow-headed characters, as " $<$," at regular intervals, as in Fig. 110, it denotes cultivated ground, the small marks probably denoting seed deposited, or they may signify hoe-marks.* When simi-



FIG. 110.—
Cultivated
ground
(Mexican).

* Aubin, in Boban, vol. i, pp. 21-23.

lar marks are placed thus “ \wedge ,” without the presence of horizontal lines, they signify plants, and in some illustrations the addition of sprouting plants is found. A rectangular figure within which are horizontal zigzag lines is found in Egyptian hieroglyphs to designate a water tank.

It has been observed that the character which denotes the city of Nineveh is a rectangle, enclosing a fish (*nun*), indicating the original settlement as a collection of fishermen's huts. In Egyptian hieroglyphs is found the square, for *habitation*, and the accompanying Fig. 111 represents *hetur*, “the house of the aged one,”* the enfeebled condition of the occupant or owner being graphically indicated by a man walking with a staff.



FIG. 111.—
Hetur, “the
house of the
aged one.”

In connection with the reference to mnemonic songs of the Ojibwa medicine men, an illustration was presented as Fig. 5, and it may be of interest at this place to give an interpretation

* The Sarcophagus of Anchnesrāneferab, Queen of Ahmes II, King of Egypt. E. A. Wallis Budge, London, 1885, p. 121.

of the characters. The learned ones of the cult society affirm that the Indians first received their powers from the Great Spirit through the intermediary of an anthropomorphic being, named Manabozho, the great-uncle of the an-ish'inabēg or "first people."

No. 1. Represents Manabozho, holding his bow and arrow. He received the sacred rites and powers now taught in the so-called grand medicine society.

No. 2. The drum and drumsticks used by the musician and medicine men when chanting, and during the ceremonies of initiation of new members.

No. 3. A bar, or rest, observed while chanting the words pertaining to the records. It is common, at all times, to repeat a single character, or rather the phrases that pertain thereto, *ad libitum*. The greater the number of repetitions observed, the greater will be the state of feeling and ecstasy of the performer.

No. 4. The medicine bag, in which is preserved the white cowry shell, as the sacred emblem of the society. In this instance the bag

is made of an otter skin, although the skin of any bird or animal may be used.

No. 5. Represents a shaman, or medicine man, of high rank, as indicated by the horn-like projections above the body, denoting both a head and an indication of superior power. In some instances a shaman may be indicated by presenting pictorially only a curve—to denote the crown—and the appendage of two horns.

No. 6. In this illustration is shown the funnel-like structure known as a jugglery, in which the prophets or jugglers prognosticate and foretell events, as may be desired by the credulous visitor.

No. 7. Represents a woman, and signifies that women may also be admitted to the society of the grand medicine.

No. 8. A pause or rest, similar to No. 3.

No. 9. The sacred snake-skin medicine bag, which has the power of imparting life. Its magic property is indicated by the short lines extending along one side.

No. 10. Represents a woman.

No. 11. Another illustration of the otter-skin

medicine bag, showing that women members may be permitted to use it during ceremonials as well as at the side of the sick.

No. 12. A female figure, holding a branch of a medicinal plant, a variety employed by the shamans in exorcising the demons of disease. The broken triangle upon the breast indicates sex, as well as the inspired condition of the priestess.

CHAPTER X.

PHONOGRAMS.

A PHONOGRAM is the graphic representation of a sound. An alphabetic character is a phonogram ; but, before such a character could be employed to convey a specific sound, it passed through various stages of graphic development, requiring a vast amount of conventionalisation, as well as changes in its morphology, from the original object ; it probably served an apprenticeship also as a syllable. In some languages syllabic characters are still employed, but preceding them is a transition stage found to exist in the Mexican picture writing.

At that stage in the development of pictography when the name or sound suggested by one object could be used in combination with another sound, suggested by another object, to form or suggest a new idea, then it was that

ideograms were developed into phonograms. The process of graphically and phonetically portraying ideas is conspicuously apparent in the Mexican codices in connection with the expression of proper and geographic names. This method has been designated as *rebus*, or ikonomatic writing. It was in use at the time of the Spanish conquest, and under missionary tuition the method was subsequently utilised in the pictorial representation of the Latin paternoster.* An illustration of the title of this prayer is presented in Fig. 112.

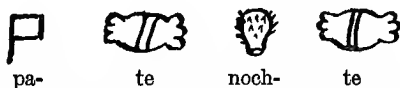


FIG. 112.—Pictographic title of Latin paternoster (Mexican).

The first character is a flag, *pan* (*tli*), the second a stone, *te* (*tl*), the next a prickly pear, *noch* (*tli*), followed by a stone, *te* (*tl*).

The Mayas, however, without assistance from outside sources, had gone a step further, employing phonetic signs in addition to ideo-

* Aubin, in *Revue Orientale et Americaine*, vol. iii, p. 255.

graphic and syllabic characters. From the work of De Landa—the second Bishop of Yucatan—it appears that they had twenty-seven characters of alphabetic value. The accuracy of these statements is a mooted question, as the study and decipherment of the codices, or books, has made little advancement; but four of them are accessible to students, and copies of these are not easily obtained.


The principle of the rebus is familiar to almost everyone. The several figures that go to make up the new word have no part in the result. For instance, were we to illustrate the word *whiskey* by the figure of a *whisk* broom placed over or near that of a key, neither of the primary objects would aid us in an interpretation of the result the sound of which they suggest. In some instances, and probably the greater portion of those in the Mexican pictographs, the initial syllable only of the object represented is used; thus the word *whiskey* may, again, be represented by a drawing of the mustache and beard—i. e., whiskers—the first syllable giving the sound *whisk*, while the re-

mainder of the word is as before given by the figure of a key.


It is apparent, therefore, that writing by such a method demands not only a thorough command of the language, its homomorphs and homophones, but also facility in artistic execution as well as keen discrimination in the selection of figures for illustration in transmitting thought.

An example of Mexican ikonomatic writing is presented herewith in Plate III.


In their development, graphic characters must of necessity have passed from a purely pictorial type into a more conventionalised form as in the Chinese, in which language we have the adoption of a series of phonograms, because of the monosyllabic character of that language. These characters may be simple or complex, and may be used also to represent abstract ideas. For instance, the idea of *song* is repre-


sented by an ear and a bird , as shown

in the modern characters, which are convention-


alised from the primitive hieroglyphs 

Again, in the word *light*, the modern character

for which , we have a conventionalised

form of the primitive hieroglyphs the sun and moon .

Curiously enough, in an Ojibwa record the same abstract idea is graphically portrayed by

, representing the moon at the full, the

half, and the quarter stages.

As the Chinese language is monosyllabic, it is evident that the primary symbols or combinations of vowels and consonants are limited, numbering, according to Dr. Taylor,* four hundred and fifty. As there are variations in accentuation, or tones, in which sounds are uttered, the whole number of distinguishable monosyllabic words may exceed twelve hundred. As the Chinese dictionaries contain about

* The Alphabet, *op. cit.*, i, 28.

forty thousand words, the language must have assistance from some other method besides the representation of abstract ideas, as above mentioned, and the gesture and tone employed in giving utterance to certain words. The necessary aid is derived from the utilisation of homophones, or like sounds with diverse signification, to which are added certain characters, similar to the Egyptian determinatives, termed *keys* or *radicals*. In this manner the first character is utilised as a phonogram, and the second as an ideogram, to specify which particular word having the sound indicated is intended. In this monosyllabic language the syllables are necessarily verbal phonograms, and are employed by the Chinese, strictly speaking, as a syllabary.

SYLLABARIES.

In America several syllabaries were devised by Catholic priests for the purpose of having the prayer books of the Church printed for the use of the Indians. One of these was for the use of the Micmac Indians of Nova Scotia, and another for the Crees of Canada. Neither of

PLATE IV.—CHEROKEE “ALPHABET.”

D ^a	R ^e	T ⁱ	ᄀ ^o	O ^u	i ^v
S ^{ga} ᄁ ^{ka}	R ^{ge}	y ^{gi}	A ^{go}	J ^{gu}	E ^{gv}
ᄂ ^{ha}	r ^{he}	ᄃ ^{hi}	F ^{ho}	Γ ^{hu}	ᄄ ^{hv}
W ^{la}	ᄅ ^{le}	ᄆ ^{li}	G ^{lo}	M ^{lu}	A ^{lv}
ᄇ ^{ma}	O ^{me}	H ^{mi}	ᄈ ^{mo}	y ^{mu}	
ᄉ ^{na} t ^{hna} G ^{nah}	ᄊ ^{ne}	h ⁿⁱ	Z ^{no}	A ^{nu}	O ^{nv}
T ^{qua}	ᄋ ^{que}	ᄌ ^{qui}	ᄍ ^{quo}	ᄎ ^{quv}	E ^{quv}
U ^{sa} ᄏ ^s	4 ^{se}	b ^{si}	F ^{so}	ᄐ ^{su}	R ^{sv}

L ^{da}	W ^{ta}	S ^{de}	T ^{te}	A ^{di}	A ^{do}	S ^{du}	Ö ^{dv}
ö ^{da}	l ^{tla}	L ^{tle}		C ^{ti}	F ^{tlo}	D ^{tlv}	P ^{tlv}
E ^{tla}		V ^{tse}		H ^{tse}	K ^{tso}	J ^{tsu}	C ^{tsv}
E ^{wa}		W ^{we}		Ö ^{wi}	U ^{wo}	D ^{wu}	E ^{wv}
ö ^{ya}		B ^{ye}		B ^{yi}	f ^{yo}	G ^{yu}	B ^{yv}

SOUNDS REPRESENTED BY VOWELS.

a, as *a* in *father*, or short, as *a* in *rival*. | *o*, as *aw* in *law*, or short, as *o* in *not*.

e, as *a* in *hate*, or short, as *e* in *met*. | *u*, as *oo* in *fool*, or short, as *u* in *pull*.

i, as *i* in *pique*, or short, as *i* in *pit*. | *v*, as *u* in *but*, nasalized.

CONSONANT SOUNDS.

g nearly as in English, but approaching to *k*; *d* nearly as in English, but approaching to *t*; *h*, *k*, *l*, *m*, *n*, *q*, *s*, *t*, *w*, *y*, as in English. Syllables beginning with *g*, except **S**, have sometimes the power of *k*; **A**, **S**, **Ö** are sometimes sounded *to*, *tu*, *tv*; and syllables written with *tl*, except **f**, sometimes vary to *dl*.

these requires further attention, as they were not of aboriginal invention.

About the year 1821 a Cherokee, named Sequoya, devised a so-called alphabet for the use of his people. The characters number eighty-five, and with a single exception are used as syllables, the letter *s*, alone, representing a sound as a letter. But here, again, we find our own alphabet made use of, with various additions and distortions, and not—as we have hitherto believed it—an independent discovery brought about by a people entirely isolated and uninfluenced by outside elements (Plate IV).

The only peoples on the Western continent who were rapidly approaching that stage in the development of writing where a syllabary was slowly being evolved were the Mexicans and the Mayas.

The Ojibwa characters, although of a superior class, are highly pictorial and comprise nothing higher than a few lines or marks which suggest rude determinatives; some of the ideograms found upon bark records made over a century ago are so like Chinese symbols of

the Shang dynasty that, were both styles copied and placed side by side, it would be practically impossible to distinguish one from the other. This has special reference to such characters as denote *fire*, *fish*, *ax*, etc., and presents only another illustration of the independent discovery and development of the several arts by various peoples, in similar stages of intellectual development and culture, though in widely separated portions of the earth.

The Japanese language is not monosyllabic like the Chinese, but polysyllabic, and in the adoption of the Chinese characters it became possible to discard the "keys" and "radicals," and to select only such of the Chinese sounds as were found necessary. In this manner the Japanese have acquired, by the selection of verbal phonograms, two syllabaries, one being constructed from a cursive form of Chinese writing called the Tsau or *grass* character, containing about three hundred sounds; and a simpler one from the Kyai or model type, having only a single character for each of the forty-seven sounds required.




The primitive inhabitants of western Asia invented a pictorial system of writing, from which resulted, on the one hand, the several stages of development of the cuneiform of the Semitic Assyrians and Babylonians. "Out of the Semitic cuneiform," says Dr. Taylor,* "arose on the one hand the Turanian proto-Medic syllabary, and on the other the cuneiform alphabet of the Aryan Persians." The latter, says Prof. Sayce,† was solved acrologically, and retains images of the syllabic writing out of which it sprang.


The oldest remains bearing inscriptions consist of the inscribed bricks from lower Babylonia. These inscriptions are in the "linear Babylonian," which consists of ideograms, the pictorial origin of which is still to be detected in many instances without difficulty. Later on the wedge-shaped or arrow-headed characters replaced these, and on account of conventionalisation, which has obliterated the simpler ob-

* *Op. cit.*, vol. i, pp. 39, 40.

† *Science of Language*, vol. ii, p. 321.

jective characters, these later wedge-shaped groupings are difficult of identification as having descended from the pictorial outlines.

An interesting example is the Assyrian cuneiform character  (*kha*) a "fish."* It is difficult to recognise in this the object, but by going back to the archaic Babylonian we find more fidelity to the outline of the object intended, as , while in the linear Babylonian the head, fins, and tail become more distinct, as in . This is similar to the Ojibwa pictograph of the present day to denote the same idea.

The city of Nineveh, it is stated, was originally a collection of fishermen's huts, and the ideogram representing that name shows a "fish" within the "enclosure" designating "house," .

To overcome the difficulty experienced by the inventors of the cuneiform, whose language

* Taylor, *op. cit.*, vol. i, p. 41.

was polysyllabic, they adopted, according to Halévy, the principle of acrology, in which the first syllable of a word was adopted as the phonogram to denote the object; and it is also suggested by Taylor that "some dyssyllabic Akkadian words were simply worn down by phonetic decay into monosyllables, which became the phonetic values of the characters." *

When a syllable had thus been adopted, the grouping into words was simply to combine the syllables, as we have observed in some of the Mexican proper names, and as we should do in English were we to utilise the senseless system found in the primers of our childhood days, in which the syllables *da*, *de*, *di*, *do*, *du*, *dy* could be arranged to compound such words as *dodo*, *Dido*, *da[d]dy*, etc., the original syllabic sounds and characters having no value in the result, they being simply instruments, and passive in the hands of the operator.

The proto-Babylonian cuneiform can be traced back, says Dr. Taylor,† as far as the

* *Op. cit.*, vol. i, p. 43.

† *Op. cit.*, vol. i, p. 55.

twenty-seventh century B. C., and Prof. Sayce remarks that the oldest Akkadian inscription may be as early as 3000 B. C.*

Another syllabary, employed in western Asia, has recently been treated of by Major Conder.† This is a graphic system of pictorial symbols which appears to have been the prototype of the Cypriote syllabary. The people who used, or possibly invented, this system are usually designated the Hittites, to whom abundant reference is made upon the monuments at Karnak, inscriptions relating to conquests made by Thothmes III, 1600 years B. C. The Hittites occupied that area of country between the Mediterranean and Black Seas, and their influence extended throughout Asia Minor.

This nation, now believed to be synonymous with the Canaanites of biblical record, were non-Semitic, and their characteristics in pur-

* Science of Language, vol. ii, p. 321.

† Journal of the Transactions of the Victoria Institute, London, vol. xxiv, No. 93, 1889, pp. 33-65.

suits, dress, and language are similar to those of the Tatar or Turkic tribes. The Egyptian hieroglyphs represent them as beardless, either mounted or on foot, and marching in well-drilled procession; but the peculiarity that caught the attention of the hieroglyphic writers more than aught else was the abundance of chariots holding three warriors each.

According to Dr. Wright, the Hittites for the first time appear "in the inscription of Sargon I, King of Agané, about 1900 B. C., and disappear from history in the inscriptions of Sargon, B. C. 717." *

The discovery of Cypriote and Phœnician inscriptions at Idalion enabled the late George Smith, of the British Museum, to decipher many of the mysterious scripts of Asia. Dr. Taylor remarks that "the Cypriote syllabary, thus curiously recovered, was no arbitrary invention, but the survival of an extremely ancient script, which must have prevailed in Cyprus prior to the introduction of alphabetic writing. It is

* The Empire of the Hittites, London, 1884, pp. 122, 123.

manifest not only that writing was practised in the Troad before the introduction of either the Phœnician or the Greek alphabet, but that the non-Hellenic characters in the Lycian, Carian, and Cappadocian alphabets, as well as the Cypriote syllabics, were all derived from a common source.”*

The question, then, was to ascertain the source from which this syllabary was derived. This is now answered by the discovery of the inscriptions at Hamath, which are clearly those of the Hittites. These pictorial sculpturings run in parallel transverse lines, and are in raised characters. “The lines of inscriptions and their boundaries are clearly defined by raised bars about four inches apart. The interstices between the bars and characters have been cut away.”† The inscriptions are read from right to left and left to right, *boustrophedon* style—as an ox ploughs. The groups of characters composing the words are then read from top to bottom between each line (see Fig. 55).

* The Alphabet, vol. ii, pp. 114, 120.

† The Empire of the Hittites, *sup. cit.*, p. 137.

The accompanying reproduction of Hittite and Cypriote characters, from Major Conder's report,* illustrates furthermore their phonetic values as employed in syllabic writing (Fig. 113).



FIG. 113.—Hittite and Cypriote characters.

No. 1. "A star, Cypriote *a*, *an*." This is a mark employed in cuneiform and Egyptian hieroglyphs for "deity."

* *Op. cit.*, p. 56.

No. 2. "A throne." The outline of the chair-form is distinctly visible. The character is similar to the form of chair drawn by the Mexicans in some of the codices.

No. 3. "Apparently a key, the Cypriote *ke*." Compares evidently with the cuneiform emblem "*ik*, to open."

No. 4. "A tiara. Cypriote *ko*, Akkadian *ku*, prince." When two such points are joined together at the base, the character represents *country*, as in various pictographs of the Chinese, Ojibwa, and Egyptian.

No. 5. "Hand and stick; Cypriote *ta*, apparently a causative prefix, like the Egyptian determinative; Chinese *ta*, 'to beat.'" This character resembles the graphic portrayal of the gesture for *possession*, *my*, *mine*, suggested perhaps by the planting or thrusting into the ground of the spear or lance-pole. A similar gesture in India was stated to have originated in this manner of *taking possession*, by planting the standard.

No. 6. "The hand grasping, Cypriote *to*." This is suggested as being similar to the Egyp-

tian, cuneiform, and Chinese signs for *touch*, *take*, *have*.

No. 7. "A vase. Cypriote *pe*, used phonetically. Akkadian *bi*, a cup."

No. 8. "Bull's head. Cypriote *le*, Akkadian *le* or *lu*, 'bull.'"

No. 9. "This is the sign of opposition in cuneiform, in Chinese, and in Egyptian. Cypriote *mu* or *no* (*nu*, 'not')."

No. 10. Resembles the Chinese, cuneiform, and Egyptian emblem for heaven. "Akkadian *u*." The idea is rather that for sky, and is similar to characters found in many of the Indian pictographs.

No. 11. "Two legs." Resembles the cuneiform *dhu*, and means probably 'go' or 'run.'" In Egyptian as well as Ojibwa and Mexican pictographs we find the same conception similarly portrayed.

We are aware that the primitive pictorial characters of the ancient Egyptians gradually attained the value of verbal phonograms, out of which were developed, by the application of the principle of acrology, syllabic and alphabetic

signs. By the principle of acrology is meant the representation of a sound by the portrayal of the object, which had for *initial* articulation, or beginning letter, the sound which this sign or image was intended to express.*

The earliest evidence of the use of alphabetic sounds occurs, according to Dr. Taylor, on the inscription of King Sent.† The simultaneous use of syllabic signs and ideographs required the employment of additional characters, as determinatives, to distinguish between the several homophones, or “similar-in-sound” characters, which might be selected. There were two classes: special determinatives, whose use was confined to one word or idea—and generic determinatives, applied to groups of ideas or words. Thus, in referring to the subject of *country* or *nation*, the character resembling three sharp ridges, or apices, would be employed; and a hand pointing to the mouth would refer to *eating*, *drinking*, or *speaking*—examples of this

* Gliddon, *Ancient Egypt*, New York, 1843, p. 22.

† *The Alphabet*, p. 61.

kind, being simply the graphic representation of the gesture sign for the same idea, occur frequently in the Egyptian. They are found also in the Mexican and to a limited extent in Indian pictographs and Eskimo etchings on walrus ivory.

The pure monumental hieroglyphs, it is well known, are made in a careful manner so as to represent in detail all the parts of the object intended. The linear characters, resulting from the reduction of the preceding, are frequently a little more difficult of identification. A greater change appears, however, in the hieratic writing—i. e., the linear reduced to an abbreviated form, used by the scribes and priests in literary pursuits, and in current use prior to 1000 B. C. The next change occurred during the reign of Psammeticus, when the later demotic superseded the hieratic, as being simpler and easier to write rapidly; this is also styled *enchorial* in the Greek translation of the Rosetta stone.

The date of the invention of this method is placed between the years 654 B. C. and the period of the Persian conquest, 525 B. C. Both


of these styles are written from right to left ; but when the Christianized Egyptians followed the Greeks in alphabetic and graphic system, the characters became Coptic, and were read from left to right.

The hieroglyphic and hieratic writings, then, present to us the sacerdotal or classic dialect of ancient Egypt ; whereas the hieratic and the Coptic literature present the popular dialect.

ALPHABETS.

It was not until the alphabetic characters became separated from their syllabic associates, that the highest civilisation became possible. The employment of a cumbrous syllabic and ideographic system of recording sound, is a hindrance in the development of many forms of progress, as is evinced in the culture status of several Oriental peoples. The discovery of alphabetic characters made possible the record and transmission of language and culture in history, literature, and science ; and to us nothing appears more natural than to write our thoughts by means of twenty-six phonograms,

the graphic symbols of the sounds which we term the alphabet.

The evolution out of pictorial prototypes of alphabetic characters has been indicated. The hieroglyphics in the Egyptian inscriptions, are in a measure phonetic, standing either for syllables or letters, generally the latter. Dr. Birch * argues that “every hieroglyph represents a syllable, each consonant having a vowel sound inherent in it; practically, however, he represents the alphabetic hieroglyphs by single letters. Thus he reads  not as *hu-bu-su*, but as *hebs*.” Rawlinson, whose investigations into the antiquities in Asia Minor and Egypt are so well known, remarks that “the Egyptians, like the Phœnicians, resolved speech into its elements, and expressed these elements by signs, which had the exact force of our letters. In choosing their sign they looked out for some common object, with a name of which the initial element was identical with


* Quoted by Rawlinson, *History of Ancient Egypt*, London, 1881, p. 121.




the sound they wanted to express." In this manner the *eagle* was made the sign for its initial sound *akhôm*, and represented A; and other words having a similar initial sound were also employed to represent the letter A, as a leaf of a water plant, or a hand and arm to the elbow. B was expressed by a leg and foot, also by a cranelike bird, and by an object resembling a flowerpot. Thus there were four forms for T, three for N, for K, for S, for J, for KH, and for H, while there were two for L or R (which the Egyptians regarded as the same), two for SH, two for I, for U, and for P. In this wise there were several sounds for each letter, excepting F and D, which were represented by a single hieroglyph; the former by the cerastes or horned snake, and the latter by a hand with the palm upward.*

At the same time Dr. Taylor states that the figure of the cerastes is the original of the letters F, Y, V, U, and W,† the serpent being one

* See Dr. Taylor's *The Alphabet*, vol. i, *passim*.

† *Op. cit.*, vol. i, p. 61.

of several symbols found in the cartouche of Khefu (Cheops), the builder of the Great Pyramid, who was the first king of the fourth dynasty. Another symbol from the same source is the phonetic character for KH, represented by a disc having a shaded centre to resemble the sieve—which it denotes—and which is represented in our alphabet by the letter H, having passed through the hieratic  and the Phœnician *H*.

The letter M of our alphabet is without doubt, traceable through the Roman and Greek to the Phœnician , and finally through the hieratic  to the linear hieroglyphic owl .

* The difference between the hieratic and the Phœnician is due chiefly to the former's angularity consequent on the change from papyrus to stone.

Although the alphabetic prototypes existed in the Egyptian hieroglyphs, and were by that

* Taylor, *op. cit.*, vol. i, p. 106.

people unconsciously employed—in a certain sense—it was not until the Semitic race discovered and utilised these characters by acrologically adapting them to their own language that the alphabet can be said to have been made. The Semitic peoples comprised three principal divisions, each of which developed letters. To the Phœnicians may be traced the origin of the Greek alphabet, which became the parent of the various alphabets of Europe; from the highlands of Asia Minor, Aram, proceeded the Iranian group of alphabets, which replaced the cuneiform writing as a script of the eastern provinces of the Persian Empire; to the south Semitic type the ancient alphabet of India, with its numberless descendants, must be referred.

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