a man of his age, and one so overwhelmed with work, had the strength and determination to write so much, and the mental clearness to write so well.

Miss Audubon has added to the Missouri River journals a number of footnotes quoting descriptions by early explorers—chiefly Lewis and Clark and Prince Maximilian—of places mentioned by Audubon, thus bringing together on the same page accounts of different authors who visited the region at different times.

Dr. Elliott Coues has supplemented these by another set of footnotes, over his initials, giving modern names of places and other information of geographic and historic interest; and biographical and zoological notes relating to persons and animals mentioned in the text. His familiarity with the region described, and with everything relating to its history, as well as with Audubon's books on birds and mammals, has enabled him to contribute materially to the interest and permanent value of the work. He calls attention to the first mention in the journals of three new species of birds — Bell's Vireo, Harris' Finch and Sprague's Lark—obtained on this expedition and named by Audubon after his companions; to the difference in song of the western Meadowlark from that of its eastern relative; and to the absence of any record of the first capture of the then new LeConte's Sparrow, which he learns from the 'Birds of America' was killed May 24, 1843; and so on.

Now and then he makes a slip, as when he states that the Fox Squirrel mentioned (on page 455 of Vol. I) under the name *Sciurus capistratus* is the one 'with white nose and ears, now commonly called *Sciurus niger*' [the latter is confined to the Southern States; the one to which Audubon refers is the Mississippi Valley Fox Squirrel, *S. ludovicianus*]; and when (p. 526) he ascribes to the late Thomas M. Brewer the introduction of the English Sparrow into this country.*

The close scrutiny Dr. Coues gave the text is indicated by the rarity of lost opportunities. The only really important omission noted relates to a mouse obtained at Fort Union on July 14, 1843, of which Audubon wrote in his journal: "Although it resembles *Mus leucopus* greatly, is much larger, and has a short, thick, round tail, somewhat blunted" (Vol. II, p. 89). Dr. Coues overlooked the fact that this particular specimen afterward became the type of *Mus missouriensis* Aud. & Bach., a species previously described by Maximilian under the name *Hypudæus leucogaster*, and later made by Baird the type of the genus *Onychomys;* it now stands as *Onychomys leucogaster* (Max. Wied.).

So much—and yet so little!—has been said of the Labrador and Missouri River Journals that no space remains to speak of the important 'European Journals,' the entertaining 'Episodes' and the admirable series of portraits† and other illustrations in Miss Audubon's excellent book—a work which no student of American birds, mammals, or history can afford to do without.

C. Hart Merriam.

THE IMPORT OF THE TOTEM.‡

In this study of the significance of the Omaha totem the aim will be to set forth, as clearly as possible, first, what these Indians believed concerning their totems, and,

*The English Sparrow was introduced into the United States in 1850 by Nicolas Pike. Nearly 25 years later Dr. Brewer took up his pen in defense of its introduction and from that time until his death was the Sparrow's only friend among American ornithologists.

†One of these, from a painting by Audubon's son, is reproduced as a frontispiece to the present number of Science by the courtesy of the publishers of the work, Messrs. Charles Scribner's Sons.

‡A paper read before the Section of Anthropology, of the American Association for the Advancement of Science, at the Detroit Meeting, August, 1897.

secondly, what these totems stood for in the tribal structure.

There will be no attempt in this paper to treat the subject of totems in a world sense; the experience of many years of research within a limited area has shown the writer that close, careful studies of the various tribes and races of the two hemispheres are as yet too few to afford sufficient evidence for a final summing up, from which to deduce points held in common' or the equally important lines of divergence found in the beliefs and customs involved in the use of totems.

It is proper to call attention at the outset to a few of the perplexities of a research at first hand in a matter as recondite as that under consideration. There is the difficulty of adjusting one's own mental attitude, of preventing one's own mental atmosphere from deflecting and distorting the image of the Indian's thought. The fact that the implications of the totem are so rooted in the Indian's mentality that he is unconscious of any strangeness in them, and is unable to discuss them objectively, constitutes a grave obstacle to be overcome. Explanations of his beliefs, customs and practices have to be sought by indirect rather than by direct methods, have to be eliminated from a tangle of contradictions, and verified by the careful noting of the many little unconscious acts and sayings of the people, which let in a flood of light, revealing the Indian's mode of thought and disclosing its underlying ideas. By these slow processes, with the analysis of his songs, rituals and ceremonies, we can at last come upon his beliefs concerning nature and life, and it is upon these that the totem is based.

There were two classes of totems known among the Omahas: the Personal, belonging to the individual; and the Social, that of societies and gentes.

The Personal Totem.—The question first to arise is: How did the individual obtain his totem? We learn that it was not received from an ancestor, was not the gift of any living person, but was derived through a certain rite by the man himself.

In the Legend of the Sacred Pole of the Omahas, which has been handed down from generations, and which gives a rapid history of the people from the time when 'they opened their eyes and beheld the day' to the completed organization of the tribe, we are told: "The people felt themselves weak and poor. Then the old men gathered together and said, Let us make our children cry to Wa-k̈on'-da. * * * So all the parents took their children, covered their faces with soft clay, and sent them forth to lonely places. * * * The old men said, You shall go forth to cry to Wa-k̈on'-da. * * * When on the hills you shall not ask for any particular thing, * * * whatever is good, that may Wa-k̈on'-da give. * * * Four days and nights upon the hills the youth shall pray, crying, and when he stops shall wipe his tears with the palms of his hands, lift his wet hands to heaven, then lay them on the earth. * * * This was the people's first appeal to Wa-k̈on'-da."

This rite, called by the untranslatable name Non'-zhin-zhon, has been observed up to the present time. When the youth had reached the age of puberty he was instructed by his parents as to what he was to do. Moistened earth was put upon his head and face, a small bow and arrow given him, and he was directed to seek a secluded spot upon the hills, and there to chant the prayer which he had been taught, and to lift his hands wet with his tears to heaven, and then to lay them upon the earth; and he was to fast until at last he fell into a trance or sleep. If, in his trance or dream, he saw or heard anything, that thing was to become the special medium through which he could receive supernatural aid. The ordeal over, the youth returned home

to partake of food and to rest. No one questioned him, and for four days he spoke but little, for if within that time he should reveal his vision it would be the same as lost to him. Afterwards he could confide it to some old man known to have had a similar manifestation, and it then became the duty of the youth to seek until he should find the animal he had seen in his trance, when he must slay it and preserve some part of it (in cases where the vision had been of no concrete form, symbols were taken to represent it); this memento was ever after to be the sign of his vision, his totem, the most sacred thing he could ever possess, for by it his natural powers were to be so reënforced as to give him success as a hunter, victory as a warrior, and even the power to see into the future.

Belief concerning Nature and Life.—The foundation of the Indian's faith in the efficacy of the totem rested upon his belief concerning nature and life. This belief was complex and involved two prominent ideas: first, that all things, animate and inanimate, were permeated by a common life; and, second, that this life could not be broken, but was continuous.

The Common Life.—The idea of a common life was in its turn complex, but its dominating force was conceived to be that which man recognized within himself as will-power. This power which could make or bring to pass he named Wa-kon'-da.

The question arises: Did the Omaha regard Wa-kon'-da as a supreme being? There is no evidence that he did so regard the power represented by that word, nor is there any intimation that he had ever conceived of a single great ruling spirit.

Anthropomorphism.—The word Wa-kon'-da appears to have expressed the Indian's conception of immanent life, manifest in all things. Growing out of this conception was a kind of anthropomorphism; the characteristics of man were projected upon all nature: the rock, in the rituals, was addressed as 'Aged One!' sitting with 'furrowed brow' and 'wrinkled loins;' the tree lived a double life in the Indian's fancy; as did the water, the fire, the winds and the animals. This duality can be recognized in myths, in legends, in rituals, and in the paraphernalia of ceremonies, in which there is a constant confusion of the external aspect and the anthropomorphic conception. All things were distinct from man, but in the subtle bond of a common life, embodying the idea of will, or directive energy, they were akin to him, and could lend him the aid of their special powers, even as he could help or hinder his fellow men.

Will-power.—We trace the Omaha's estimate of his own will-power in the act called Wa-zhin'-dhe-dhe (wa-zhin, directive energy; dhe-dhe, to send), in which, through the singing of certain songs, strength could be sent to the absent warrior in the stress of battle; or thought and will be projected to help a friend win a game or a race; or even so to influence the mind of a man as to affect its receptivity of the supernatural. Aside from the individual practice of this power, there was, so to speak, a collective energy exercised by the Hon'-he-wa-chi society in the act of Wa-zhin'-a-gdhe (wa-zhin, directive energy; a-gdhe, to place upon), where the members so fixed their will upon an obnoxious person as to isolate him from all helpful relations with men and animals and leave him to die. A similar ability to aid or to injure was imputed to the elements and all natural forms. The winds could bring health to man; the stone insure him long life; the elk could endow the pursued with speed, and the hawk make the warrior sure to fall upon his enemy. But it is to be noticed that while man's own will was believed to act directly, without intervening instrumentality upon his fellows, the supplementing of

man's powers by the elements and the animals was obtainable only after an appeal to Wa-ẍon′-da, in the rite of the vision.

The Appeal.—The prayer, which formed a part of the rite of the vision, was called Wa-ẍon′-da gi-kon. Gi gi-kon′ is to weep, from loss as that of kindred; the prefix gi indicates possession. Gi-kon is to weep from want of something not possessed, from conscious insufficiency, and the longing for something that could bring happiness or prosperity. The words of prayer, wa-ẍon′-da dhe-dhu wah-pa′-dhin a-ton′-he, literally rendered are: Wa-ẍon′-da here needy I stand. (A-ton-he is in the third person, and implies the first, as he stands, and I am he—a form of speech used to indicate humility.) While this prayer has been combined with many rites and acts, its inherent unity of name and words has been preserved through generations of varied experience and social development of the people.*

Wa-ẍon′-da was a vague entity to the Omaha, but the anthropomorphic coloring was not lacking in the general conception; the prayer voiced man's ever present consciousness of dependence, was a craving for help, and implied a belief in some mysterious power able to understand, and respond to his appeal. The response came in a dream, or trance, wherein an appearance spoke to the man, thus initiating a relation between them, which was not established until the man, by his own effort, had procured a symbol of his visitant, which might be a feather of the bird, a tuft of hair from the animal, a black stone or a translucent pebble. This memento or totem was never an object of worship; it was the man's credential, the fragment, to connect its possessor with the potentiality of the whole species represented by the form seen in his vision, and through which the man's strength was to be reënforced and disaster averted.

Basis of the Efficacy of the Totem.—The efficacy of the totem was based upon the Omaha's belief in the continuity of life, a continuity which not only linked the visible to the invisible, and bound the living to the dead, but which kept unbroken the thread of life running through all things, making it impossible for the part and the entirety to be disassociated. Thus, one man could gain power over another by obtaining a lock of his hair, which brought the man himself under his influence. In the ceremony of the first cutting of the child's hair, the severed lock, which was given to the Thunder god, placed the life of the child in the keeping of the god. Again, when a man's death had been predicted—by one gifted to see into the future—the disaster could be averted by certain ceremonies which included the cutting off of a lock of hair from one side of the head, and a bit of flesh from the arm on the opposite side of the body, and casting them into the fire; by this sacrifice of a part the whole was represented, the prediction fulfilled and the man permitted to live. From the ritual of the Corn, sung when the priest distributed the kernels to indicate that the time for planting had come, we learn that these kernels were the little portions which would draw to themselves the living corn. In the ritual sung over the Sacred Buffalo Hide prior to the hunt the same idea is present, that in the continuity of life the part is ever connected with the whole, and that the Sacred Buffalo Hide was able to bring within reach the living animal itself.

Limitation in Totems.—The totem opened a means of communication between man and the various agencies of his environment, but it could not transcend the power of its particular species; consequently all actions were not equally potent. Men who

* This prayer can be seen on page 136, Song No. 73, of Vol. 1, No. 5, of the Archæological and Ethnological papers on the Peabody Museum, Harvard University.

saw the Bear in their visions were liable to be wounded in battle, as the bear was slow of movement, clumsy and easily trapped, although a savage fighter when brought to bay. Winged forms, such as the Eagle, having greater range of sight than the creatures which traveled upon the ground, could bestow upon the men to whom they came in the dream the gift of looking into the future and foretelling coming events. Thunder gave the ability to control the elements, and the authority to conduct certain religious rites.

Despite the advantages to be derived from the possession of certain totems, the inculcations given when the youth was instructed in the rite of the vision, and taught the prayer he was to sing, forbade him to ask for any special gift, or the sight of any particular thing; he was simply to wait without fear, and to accept without question, whatever Wa-kon'-da might vouchsafe to send him. No man was able to choose his personal totem, but it was the general belief of the people that the powerful animals and agencies were apt to be drawn toward those who possessed natural gifts of mind and strength of will.

Nature of the Totems.—The totems of the Omahas referred to animals, the Bear, the Buffalo, the Deer, the Birds, the Turtle and Reptiles; to the Corn; to the elements, the Winds, the Earth, the Water and Thunder. There was nothing among them which in any way represented the human family, nor was there any trace of ancestor worship; the relation between the man and his totem did not lie along the line of natural kinship, but rested upon the peculiarities in his theory of nature, in which the will and ability to bring to pass, which he was conscious of within himself, he projected upon the universe which encompassed him. The rite of the vision was a dramatization of his abstract ideas of life and nature, and the totem was the representation of the vision in a concrete form.

THE SOCIAL TOTEM AND WHAT IT STOOD FOR IN THE TRIBE.

We have thus far seen the influence of the totem upon the individual. We are now to trace it as exerted upon groups of people; in the religious societies; in the Ton'-won-gdhon, or gens; and in the development and organization of the tribe.

Religious Societies.—The totem's simplest form of social action was in the religious societies, whose structure was based upon the grouping together of men who had received similar visions. Those who had seen the Bear made up the Bear society; those to whom the Thunder or Water beings had come formed the Thunder or the Pebble society. The membership came from every kinship group in the tribe, blood relationship was ignored, the bond of union being a common right in a common vision. These brotherhoods gradually developed a classified membership with initiatory rites, rituals and officials set apart to conduct the ceremonials.

The function of the totem in the societies was intermediate between that of the individual totem and the totem in its final social office, where it presided over an artificial structure, in which natural conditions were in part overruled and the people inevitably bound together. In some of the tribes of the linguistic group to which the Omahas belong, where the political structure of the gens is apparently weak and undeveloped, the religious societies exist and are powerful in their organization. This fact, with other evidence which cannot be detailed here owing to its complex nature, together with the similarity traceable between the rituals and ceremonies of these religious societies, and those incident to the inauguration of gentile and tribal officers, makes it seem probable that the

training and experience derived from the working of these earlier societies had taught the leaders among the Omahas and their close cognates certain lessons in organization, by which they had profited during the formative period of the artificial social structure of the Ton'-won-gdhon, or gens.

The Ton'-won-gdhon.—The word Ton'-won-gdhon means a place of dwellings where kindred dwelt together. There were ten Ton'-won-gdhon u-zhu—dominant, ruling Ton'-won-gdhon, or gentes, in the Omaha tribe. These gentes practice exogomy, and traced their descent only through the father. Each gens had its particular name, which referred directly or symbolically to its totem, which was kept in mind by the practice of tabu. There was also a set of names peculiar to each gens, all having the same reference, one of which was bestowed upon each child; an Omaha's gentile name, therefore, would at once reveal his kinship group or gens. This name was proclaimed at the time of the ceremony attendant upon the cutting of the first lock of hair. After this ceremony the child's hair was cut in a fashion to symbolize the totem of its gens, and each spring, until it was about seven years of age, this peculiar trimming of the hair was repeated. The teaching of this object lesson, so placed before the children, was reënforced by their training in the strict observance of the special tabu of their gentes, holding ever before them the penalties for its violation, of blindness, physical deformity and disease.

There were religious rites peculiar to each gens in which the members did homage to the special power represented by the gentile totem. In these ceremonies the hereditary chiefs of the gens were the priests. It is easy to see why the totem was never forgotten, why its sign was borne through life, and at last put upon the dead, in order that they might be at once recognized by their kindred, and not wander as they passed into the spirit world.

Office of the Totem in the Gens.—In the early struggle for existence the advantages accruing from a permanent kinship group, both in resisting aggression and in securing a food supply, could not fail to have been perceived; and, if the people were to become homogeneous and the practice of exogomy continue, some expedient must have been devised by which permanent groups could be maintained and kinship lines be defined. The common belief of the people, kept virile by the universal practice of the rite of the vision, furnished this expedient—a device which could be understood and accepted by all—the concrete sign of the vision, the totem of the leader, he whose abilities and prowess evinced supernatural favor and won for his followers success and plenty.

From a study of the minutiæ of the customs and ceremonies within the gens, it is apparent that their underlying purpose was to impress upon the people the knowledge and the duties of kindred, and that one of the most important of these duties was the maintenance of the union of the gens. This union of kindred we find to have been guarded by the agency of the totem. The name of the gens, the personal names of its members and the practice of tabu—obligatory upon all persons, except the hereditary chiefs, while they were officiating in the gentile rites pertaining to the totem—indicate a common allegiance to a supernatural presence believed to preside over the gens by virtue of its relation to the common ancestor. These rites did not imply ancestor worship, but were a recognition of the special power represented by the totem. We also find that the gentile totem did not interfere with a man's freedom in seeking his personal totem, nor of his use of it when desiring help from the mysterious powers. The gentile totem gave

no immediate hold upon the supernatural, as did the individual totem to its possessor; outside the rites already referred to, it served solely as a mark of kinship, and its connection with the supernatural was manifest only in its punishment of the violation of tabu. Briefly stated, the inculcation of the gentile totem was that the individual belonged to a definite kinship group, from which he could never sever himself without incurring supernatural punishment.

Social growth depended upon the establishment of distinct groups and the one power adequate for the purpose was that which was believed to be capable of enforcing the union of the people by supernaturally inflicted penalties. The constructive influence of the totem is apparent in the unification of the To*n*′-wo*n*-gdho*n*, or gens, without which the organization of the tribe would have been impossible.

The Influence of the Religious Societies upon the Gens.—In the religious societies the people were made familiar with the idea that a common vision could create a sort of brotherhood. This fraternity was recognized and expressed by the observance of rites and ceremonies, in which all the members took part, setting forth the peculiar power of the totem. The influence of this training in the religious societies is traceable in the structure of the gens, where the sign of a vision, the totem, became the symbol of a bond between the people, augmenting the natural tie of blood relationship in an exogamous group. We find this training further operative in the establishment of rites and ceremonies in honor of the gentile totem, which bore a strong resemblance to those already familiar to the people in the societies. In the gens the hereditary chief was the priest, and this centralization of authority tended to foster the political development of the gens.

Related Totems.—Certain fixed habits of thought among the Omahas growing out of their theories and beliefs concerning nature and life—upon which the totem was based—present a curious mixture of abstractions and anthropomorphism, blended with practical observations of nature. Thus, in the varied experiences of disintegration and coalescing during past generations, composite gentes came into existence through the supposed affinity of totems. Out of the ten Omaha gentes, three only observe a single tabu; the other seven were composed of sub-groups, called To*n*′-wo*n*-gdho*n* u-zhi*n*ga (u-zhi*n*ga, a small part), each of which had its own special tabu, obligatory upon its own members only, and not upon the other sub-groups of the gens. While there was no common totem in a composite gens, the totems of the sub-groups which formed such gens had a kind of natural relation to each other; the objects they symbolized were more or less affiliated in the natural world, as, for example, in the Mo*n*′-dhi*n*-ka-ga-*h*e gens (the earth makers), where the totems of the sub-groups represented the earth, the stone and the animals that lived in holes in the ground, as the wolf.

The relation between the totems of composite gentes is not always patent; it frequently exists because of fancied resemblances, or from a subtle association growing out of conditions which have sequence in the Indian mind, although disconnected and at variance with our own observation and reason.

The Totem in the Tribal Organization.—The families within a gens pitched their tents in a particular order or form, which was that of a nearly complete circle, an opening being left as an entrance way into the the enclosed space. This encampment was called by the untranslatable name Hu′-dhu-ga. When the entire tribe camped together, each of the ten gentes, while still preserving its own internal order, opened

its line of tents and became a segment of the greater tribal Hu'-dhu-ga, in which each gens had its fixed unchangeable position, so that the opening of the tribal Hu'-dhu-ga was always between the same two gentes. Both these gentes were related to Thunder. That upon the right, as one entered the circle, was the I*n*-shta'-thu*n*-da —flashing eye—known as the Thunder gens or people. To a sub-group of this gens belonged the right of consecrating the child to the Thunder god, in the ceremony of cutting the first lock of hair; another sub-group kept the ritual used in filling the Sacred Tribal Pipes. On the left of the entrance camped the We'-zhi*n*-shte—a symbolic name, probably meaning the representatives of anger. The We'-zhi*n*-shte were Elk people, having in charge the Sacred Tent of War, in which the worship of Thunder, as well as all the rites pertaining to war, of which Thunder was the god, took place.

It would lead too far afield to follow at great length the inter-relations of the gentes; or the dominance of position and leadership in tribal rites and ceremonies conceded to certain gentes; or to indicate the scars left upon the Hu'-dhu-ga by the breaking away of groups of kindred; or the the devices used to keep intact an ancient form and order. The point to be borne in mind is that the position of the gentes in the tribe, and the interlacing of their functions, were regulated by the ascription of different powers to their totems, and that the unification and strengthening of the gens depended upon the restraining fear of supernatural punishment by the totemic powers.

In this rapid review of Omaha beliefs and customs connected with the totem, many observances have not even been mentioned; and of those indicated, the details have had to be omitted in order to keep strictly within the limits of our subject, but the fundamental ideas which have been briefly considered will be found to underlie all rites and ceremonies within the tribe.

Linguistic Evidence as to the Totem. — We turn now to the language for further evidence as to the import of the totem.

The name of the concrete sign of the vision is Wa-*hu*'-be, a sacred thing. The word is applied to sacred objects other than the totem, such as the Sacred Pole, the Sacred Tents, the Sacred Tribal Pipes, etc.

The name of a religious society always included the name of the manifestation of the vision of its members; for instance, the Bear society was called Wa'-tha-be i'-dha-e-dhe, literally rendered is: the Bear with or by compassion; that is, those upon whom the Bear had compassion. I'-dha-e-dhe implies that this compassion, this pity, was aroused by a human being making a personal appeal, either by his destitute appearance or the movable character of his supplication. Usage forbade the application of this word to any emotion excited by animal life; it could only express a feeling between man and man, or between man and the manifestation of Wa-k̈o*n*'-da. It did not represent an abstract idea, as of a virtue, but a feeling awakened by direct contact with need. In the prayer already cited as a part of the rite of the vision the man makes a direct appeal to Wa-k̈o*n*'-da ('Wa-k̈o*n*'-da! here needy I stand'), and reference to this act is made in the employment of the word i'dha-e-dhe in the term designating the religious societies.

The name of a gens indicated its totem or the characteristic of the group of totems in a composite gens. When the people of a gens were spoken of in reference to their totem the word i'-ni-ka-shi-k̈i-dhe was used immediately following that of the totem; for instance, the Thunder people—the I*n*-shta'-thu*n*-da gens—were called I*n*-gdha*n*-i'-ni-ka-shi-k̈i-dhe; i*n*-gdha*n*', thunder; i'-ni-ka-shi-k̈i-dhe is a composite word,

meaning: they make themselves a people with; that is, with thunder they make themselves or become a people. The We'-zhi*n*-shte gens, the Elk people, were called O*n*-pa i'-ni-ka-shi-ki-dhe—o*n*-pa, elk; with the Elk they make themselves a people. The word i'-ni-ka-shi-ki-dhe clearly indicates the constructive character of the totem in the gens.

The set of names which belonged to each gens referred to the sign or totem of a family group; these names were called ni'-ki-e—spoken by a chief, or originated by a chief. The word ni'-ki-e points to the formative period when means were being devised to transform the family into a distinct political group; it argues a central authority, a man, a chief; the individual names which he bestowed allude solely to the power behind the chief, the manifestation of his vision represented by his totem, in the favor of which he and his kindred had made themselves a people, i'-ni-ka-shi-ki-dhe.

The Osage equivalent of the Omaha word i'-ni-ka-shi-ki-dhe is zho'-i-ga-ra, meaning associated with. The Otoe word used for the same purpose is ki'-gra-jhe, they call themselves.

The word for tribe u-ki'-te, when used as a verb, means to fight, to war against outside enemies, indicating that the need of mutual help impelled the various To*n*'-wo*n*-gdho*n* (gentes) to band together for self-preservation; but the order of their grouping was, as we have seen, controlled by their totems.

Summary.—In the word for tribe, in the formation of the gens within the tribe, and in the rite which brought the individual into what he believed to be direct communication with Wa-ko*n*'-da, we trace the workings of man's consciousness of insecurity and dependence, and see his struggles to comprehend his environment and to bring himself into helpful relations with the supernatural. And we find in this study of the Omaha totem that, while the elements, the animals and the fruits of the earth were all related to man through a common life, this relation ran along discrete lines, and that, his appeal for help once granted, relief could only be summoned by means of the Wa-*h*u'-be, the sacred object, the totem, which brought along its special line the desired supernatural aid.

It is noteworthy that the totems of individuals, as far as known, and those of the gentes, represented the same class of objects or phenomena, and as totems could be obtained in but one way—through the rite of the vision—the totem of a gens must have come into existence in that manner, and must have represented the manifestations of an ancestor's vision, that of a man whose ability and opportunity served to make him the founder of a family, of a group of kindred who dwelt together, fought together and learned the value of united strength.

Alice C. Fletcher.
Peabody Museum, Harvard University.

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*MULTIPLE-CYLINDER STEAM-ENGINE.**

The following is a very brief abstract of the paper presented to the American Society of Mechanical Engineers, by Messrs. Thurston and Brinsmade, at the last convention, New York, Deceber 2, 1897:

The paper was a statement of the results of the experimental investigation of the relative efficiency of standard forms of compound and triple-expansion engines and a newly introduced type in which the high-pressure cylinder is given about one-half the size ordinarily assigned for a stated power, as compared with the magnitude of the low-pressure cylinder. Remarkably

*Presented at the New York meeting (December, 1897) of the American Society of Mechanical Engineers, forming part of Volume XIX. of the *Transactions*.