

which the National Museum is being arranged, by means of a number of cases showing the geographical distribution and physical characteristics of the races of men, the processes and results of some of the most primitive arts, and also by a collection illustrating the subject of biblical archæology, and a collection of remains of prehistoric man in Europe, Asia, and America. The Bureau of Ethnology will also make a display in connection with this department, choosing for its topic the pueblo of Zuñi, its arts and industries, and also an exhibition of models of Indian mounds of the Mississippi valley.

In the department of arts and industries two subjects will be illustrated. The first will be the history of trade and commerce of the United States, in connection with which will be shown a series of models exhibiting the history of water-transportation in the Ohio valley, and another series showing the history of land-transportation for three centuries, especially in connection with the migration across the Alleghany Mountains. There will also be a series of models showing the different rigs of sea-going vessels.

The other subject to be illustrated in this department is the history of the graphic arts in America. This collection is in preparation under the direction of Mr. S. R. Koehler, who has recently set up in the National Museum a collection of a similar nature. The exhibit to be sent to Cincinnati will be an extension of this series. It will consist, first, of a series of selected specimens showing each method of engraving ever practised, one group illustrating wood-engraving, another etching, another copperplate, another mezzotint, and so on. There will also be shown, as fully as possible in the space assigned, a collection illustrating the history and present condition of the art of engraving and etching in America and by American artists. There will also be shown in considerable detail the history of engraving by mechanical processes, beginning with photo-lithography, and extending through all the modern processes of photo-engraving, autotype, photogravure, etc.

The foundation of this part of the exhibit will be the magnificent historical collection presented to the Smithsonian Institution by J. W. Osborne of Washington. Other series taken from the museum collections also form the nuclei of exhibits that have been greatly extended by loans from representative American engravers and etchers.

Another collection will show the history and applications of photography in America. This was begun four years ago by Mr. Smillie, the photographer of the National Museum, and will be exhibited for the first time in Cincinnati. A collection of engraved portraits of men connected with the history of American science, which has been accumulating in the Smithsonian Institution for twenty years, will also be sent to Cincinnati. Photographs of objects in the museum too valuable or too large to be removed, a complete set of photographs of the Grant and Washington relics, and a set of photographs showing each exhibition hall and laboratory in the National Museum and Smithsonian Institution, complete the list of exhibits by these two bureaus. Many objects sent to Cincinnati in 1884, and which are therefore familiar to those who will visit the exhibition this year, have been omitted from the present contributions.

The United States Fish Commission has been assigned three thousand feet of space in the exhibition-building. The centre forty-five feet of this space will be devoted to aquaria, representing a sloping, rocky hillside with plants and trees and a rustic fence. Over the rocks will fall a cascade into a pool below, six feet nine and one-half inches long, and three feet seven inches wide. From this pool the water will be conducted by a miniature McDonald fishway into a basin twelve feet long and six feet wide. The pools will be filled with fish, and water-plants will grow about the edges. The aquaria, thirty-eight in number, will be constructed in two rows in the rocks in the rear of the waterfall. They will contain specimens of all the *Salmonidae* available, the brook-trout, the rainbow-trout, the Loch Leven trout, the lake-trout, and land-locked salmon, besides specimens of the principal species of food-fishes of the Ohio valley and Lake region, and carp and goldfish. These aquaria will be in charge of Mr. W. P. Seal, and the entire Fishery Commission exhibit will be managed by Capt. J. W. Collins.

In the remaining space will be shown the apparatus used in scientific investigation by the officers of the Fish Commission, —

an outfit for deep-sea dredging and exploration, etc.; a collection of implements and pictures illustrating fish culture and distribution; a series of casts and other representative specimens of fishes, mollusks, and marine invertebrates that are sought for food, to illustrate the objects of the fisheries.

In a separate department the story of the fisheries will be told, mainly by an extensive collection of large photographs and crayon drawings illustrating the methods employed in the fisheries, the boats and apparatus used, and even the manner and condition of life of those engaged in the fisheries. Among other interesting objects to be shown will be four large maps illustrating the distribution of the principal food-fishes, and fish used for bait in the Atlantic from Cape Hatteras to Labrador; a statistical map showing the yield of the fisheries of the country; a map showing in a graphic manner the work done in shad-propagation on the Atlantic coast, and one showing the increase in the catch of shad from 1880 to 1888.

MANNERS AND MEALS.

IN a paper by Garrick Mallery, on manners and meals, published in the July *American Anthropologist*, the author makes no attempt to exhume ancient customs from the ruins of the past, nor to describe those found in the low strata of culture represented by savage and barbaric peoples, which also explain details of our own prehistoric past. The line of thought deals rather with the customs of our own daily life in civilization. Its object is to notice those which show instructive peculiarities, and to ascertain their cause or occasion and their origin, in which attempt antiquarian research and ethnic parallel must be invoked for aid, though approached in a manner rather the converse of the usual anthropologic discussions.

It is perhaps not too much to say that a dinner-party thoroughly good in *ménue*, cookery, service, æsthetic appliances of sheen and color, culinary chemistry, the conquest over nature shown in condiments from every clime, roses in winter, and in summer ice, and last, though by no means least, in the guests with educated palates, affords altogether the strongest every-day evidence of high civilization. Brutes feed. The best barbarian only eats. Only the cultured man can dine. Dinner is no longer a meal, but an institution. An eminent jurist pronounced that the whole result and aim of the institutions and laws of England was to get twelve men in a box. It would hardly be a parody to contend that the most obvious result of our modern æsthetic and industrial triumphs is to get twelve legs under a table. Few will now assert that asceticism is intellectual. It is now truly regarded as a reversion to the plane of savages; and this is made more clear by the fact, that, when asceticism as regards food prevailed, it was accompanied with filth, and even want of decency in clothing.

A large part of the important work of the civilized world is accomplished or regulated at social dinners. Theodore Hook was reproached for bringing so many dinner details into his novels, and he defended himself with the assertion that the dinner was the great theatre of London life. Our fellow-citizens, some decades ago, were foolish enough to procure the recall of Reverdy Johnson as minister to the Court of St. James on the ground that he was spending all his time at dinners, but it was at them that he was successfully prosecuting his work. In Washington, not only diplomatic but many legislative and official transactions are arranged at dinners. This is in contrast with savage and barbaric life. Feasts were then the means of bringing people together; but the deliberations were before or after, and even ordinary conversation was unknown at the feeds. This perhaps is more strictly true among peoples who did not use alcoholic intoxicants as beverages; for the ancient Persians had a rule to vote in council twice, once sober and once drunk, so as to observe the mooted question from two points of view.

Anciently (and still in the lower stages of culture) no regular hours for meals were observed. Savages eat when they can get food, and continue to eat so long as the food lasts. The history of civilization may be traced in the changing hours of refection. Confining the examination to Europe since the middle ages, the maxim in the reign of Francis I. of France was "to rise at 5, dine at 9,

sup at 5, and couch at 9." Under Henry IV. the court dined at 11, and noon was the rule in the early years of Louis XIV., though in the provinces distant from Paris the dinner-hour remained at 9. In the household ordinances of Henry VIII. of England, the dinner was established at 10, and the supper at 4. This arrangement seems to have been then old, as Froissart mentions waiting on the Duke of Lancaster at 5 in the afternoon, "after he had supped." The differentiated meal, breakfast, with a special character of food, such as we now know it, is of very recent date. A posset or some other confection to stay the stomach was taken on rising without approach to a table, and even now Parisians habitually have their *café au lait* with a trifle of solid food in their bed-chambers, and wait several hours after rising before partaking of what they call, as distinct from *gouter*, the *déjeuner*, a meal often answering in composition to the old dinner of mid-day. A substantive change even with them is the hour of the latter meal, which is late in the evening, or in the night, instead of early in the afternoon, as it was a few generations ago.

The position of the participants at any formal repast has been attended by intricate punctilios, as much probably among savages as in the most ceremonial courts of Europe. Whether the host should be on the right or left of the door of the wigwam or tepee is a traditional ordinance, and the order in which the calumet should be passed is strictly regulated. The most modern and most judicious arrangement of the guests at a dinner-party disregards their social or official importance, and seats them with reference to their personal peculiarities, tastes, and mutual adaptation. Nevertheless, there still remains a relic of former ceremonials in the apparent necessity for the host and hostess to take into dinner and place at their respective right hands the most distinguished two of opposite sex among their guests. But, apart from this distinction, the diagram of seats is arranged to promote agreeable conversation; which object, as before remarked, is entirely ignored in savage and barbarian repasts.

The question as to who is to be served first is one about which much has been written by professors of etiquette. It seems now to be decided that on occasions where the entertainment is given for the special honor of a particular guest, or where any one of the guests towers above the others in point of dignity, such guest should be first served; but until quite recently it was obligatory for the host or hostess, or both, if both were present, not only to be first served, but actually to eat before any of their guests. This custom originated in the attempt to guard against poisoning, which was common, though apprehended more frequently than was warranted, during the middle ages. It is not traced to primitive man. On the contrary, the general rule seems to have been that the giver of a feast did not eat or drink at all, but waited upon the guests, and that practice is found still existing in many parts of the world.

The posture of the several nations or peoples when at meals has been discussed, without much result save to mark its connection with the invention of furniture and utensils. Savages who squatted or sprawled at other times, squatted or sprawled then. So luxurious nations, or their wealthy members, who habitually reclined on couches, did so at feasts.

A modern company being assembled and seated, the preliminary of grace or form for an address to the Deity or superior powers demands attention. Reference to antiquity and to the practices of uncivilized tribes shows that this almost universal form by no means originated with Christianity. It was a sacrifice to and placation of the gods. Sometimes the whole of the viands were formally offered to them; and nearly always a portion, symbolical of the whole, was actually disposed of by burning or burying in or pouring upon the earth. The early Christian Church, adopting this Pagan ceremonial with many others, gave it in time a new and far more elevated sentiment. Instead of the formula of fear, it became that of gratitude to the giver of nourishment and continued life. It is instructive to inquire into the reason why the ceremony of pronouncing grace either before or after meals has of late years so decidedly fallen into disuse. This change undoubtedly preceded the present agnostic disregard of religious services in general, and seems not to have been connected with it, but to have been induced by special influences. Religious writers have conscientiously argued that the time when a man was hungry and in sight of the

food which occupied his attention was not appropriate to prayer. Others claimed that the end of the meal, when the mind was made sluggish by feeding, was also inappropriate. The perficient objection was probably the inconvenience to the service of the repast. At all events, few subjects were more prolific of jests, squibs, and derisive anecdotes during the last century than that of asking grace. Perhaps this ridicule has had effect upon its disuse.

The duty of the entertainer among us is to subordinate his own dinner to attention to the perfect service of his guests. Among the northern Algonkins and Iroquois, he had another function. He must not eat, and no one talked, but his special duty was to sing. In some Chinese circles the entertainer goes out of the banquet-room, and leaves his guests to unobserved revelry. Davy Crockett would have approved of this, as he declared that the politest man he ever saw was the Philadelphian who handed him the decanter of whiskey and then looked out of the window.

It is laid down in some books of etiquette that upon the conclusion of each course, in order that the servant may be aware that the time has arrived for a change, the guest shall lay his knife and fork parallel to each other upon his plate, but it is also observed that it is extremely vulgar to place these instruments crosswise upon the plate. There is a tradition in reference to the crosswise arrangement, that it accompanied a religious formula of blessing the pabulum which had then been consumed and was relegated to the digestive apparatus. In this connection it may be noted, that, before the fork was common, the Guelphs or imperials placed their knives and spoons longwise, and the Ghibellines or papal faction placed theirs crosswise, on the table. This practice of subsequent blessing has gone into desuetude with even more generality than has that of invoking preliminary grace. Becoming rejected, persons who used the sign connected with it showed themselves behind the times; *videlicet*, low-bred or vulgar.

In all repasts of uncivilized peoples it is remarkable that certain kinds or parts of food were refused by particular individuals, or avoided by the whole body of feeders.

At this time and in this country, but two relics of these superstitions would probably be met. One might occur on any day in case a strict Israelite were present; and another, relating to the days of the week and seasons of the year, would be apparent in the abstinence of other religionists.

The explanation once offered, that the Mosaic prohibition of certain animals, especially the hog, as food, was founded in profound hygienic wisdom, is not now considered satisfactory. Pork in good condition is recognized to be as healthful food as other meats in the same condition throughout the world, and it is now eaten with the same immunity in Syria as in Ohio. The modern Israelites offer most interesting notes to the ethnologist by their continued preservation, in the midst of a high civilization, of the religious taboo of savagery. This rite has had paramount influence beyond that of their written doctrines, in their segregation from the nations in which they have sojourned; and, now that it is becoming less strictly observed, there are evidences of their ceasing to be a peculiar people.

The refusal, at certain times and seasons, of food that in itself is hygienically good and palatable, in placation of a deity, or, without further explanation, to avoid bad luck, is well known among the lower tribes of men. Fasting may be either *jejuniium*, in which all kinds of food and drink are prohibited, or *abstinentia* in relation to specified articles.

The origin of fasting is probably to be found in physiological considerations. There is a marked loss of appetite in the reflex result of grief, fear, and other strong emotions, from which noticed fact abstinence may become the conventional symbol and sometimes pretence of those emotions, and afterwards a formal act of homage to their inspiring cause. Certain it is that the practice has been found in all times and in every race of man, and therefore has no necessary connection with Christianity.

A similar explanation, *pro tanto*, attends the substitution of fish for other meats; but this topic has some peculiar features. In the early riparian populations the arrival from the mysterious depths of waters of the shoals of fish, on which they depended, was, and still is among savages, always signaled by religious ceremonies. In the same connection may be noted the rites of our plains Indians

in imploring and celebrating the coming of the less mysterious herds of buffalo. The wonderous fecundity of the fish early made it the symbol of life and the creative power. The Israelites often relapsed into the worship of the fish-gods of Phœnicia. In the early Christian Church the fish symbol for Christ, adoption of which was probably influenced by the traditional sentiment indicated, anteceded the acrostic of his name and titles in Greek, *Ἰησοῦς Χριστός Θεοῦ Υἱός Σωτήρ*, presented by the letters of the Greek word *ΙΧΘΥΣ*, though the permanence of the symbol was doubtless enhanced by the literary coincidence.

The old doctrine of 'signatures,' so called, had its effect in the adoption of fish as spiritual food. It was cold, and the meat was generally white, thus coinciding with the symbolism of temperature and color to express purity.

It is fortunate that some rules in relation to repletion are no longer observed. One which was noticed among the Hurons and the Canadian Algonkins by the early French missionaries, and styled *le festin à manger tout*, consisted in the religious obligation, sometimes attended with loss of life, of the communicants to eat up every particle which was set before them. A festival, somewhat of the same nature, was called the 'glutton mass,' celebrated in England during if not after the reign of Henry IV. A less dangerous, because regulated, term of repletion was prevalent in India, according to a Brahman tradition, in which the invitees, before commencing the carouse, bound themselves around the abdomen with a band of straw; and their modified feat was, not to eat indefinitely until all had been devoured, but only until the straw bands should burst. There is no survival of this custom except in the exaggerated hospitality, generally rustic, in which the host persists in petitions that the guests should continue to eat, without reference to their apparent wishes. Modern etiquette shows marked improvement in never suggesting either selection or quantity of provender.

The conclusion of our dinner raises again the vexed question concerning the retirement of the lady *convivés* to leave the men alone. Of course, it is well understood that the object among the hard-drinking Englishmen of the last generation was to permit their sitting for the excessive consumption of wine without the disturbing restraint of the sex. The French, being less addicted to intoxication, and perhaps more professedly attached to the presence of the fair, did not admit this usage. It, however, is a partial survival of the ancient practice, still observed in most savage tribes, in which the women never eat in company with the men. A relic of this is found in the order of Bishop Grosseteste in 1450: "Streytly forbode ye that no wyfe [that is, woman] be at your mete." In this country, and indeed now in civilized Europe, there is less addiction to heavy drinking, with a greater desire for smoking after repletion: so a convenient compromise has been effected by which the gentlemen adjourn to a smoking-room, while the ladies segregate themselves for gossip.

It is well to have an agreement as to who is to take the lead in departure, by which the party is broken up. A difficulty of this kind occurred when Dom Pedro, Emperor of Brazil, was a few years ago invited to an entertainment at the White House in Washington. At a late hour, when some of the guests, becoming weary, were about to take their leave of the President's wife, she remonstrated, saying correctly that it was the etiquette for the crowned head to depart first, and all others must await his pleasure. Now, the Emperor had asked the question about our etiquette in this regard of an honest Senator, who was confused about the 'receiving party' being always composed of the persons of greatest dignity, and pronounced that Pedro must stay until all not of the household had departed. It was not till about 3 o'clock in the morning that the dead-lock was broken by the illness, real or pretended, of one of the worn-out ladies.

ANOTHER disease has been classed among the germ diseases. Dr. Arthur Nicolaier of Göttingen states it as his belief that tetanus, whether in man or beast, is the result of a micro-organism of the rod form, whose spores are widely scattered over the earth. This microbe favors the production of poisons in the system into which it is introduced, which act similarly to strychnine.

SCIENTIFIC NEWS IN WASHINGTON.

How the Washington Scientific Societies were founded; the Old Scientific Club; the Philosophical, Anthropological, Biological, Chemical, and Geographic Societies; the Cosmos Club; the Proposed Publication of Quarterlies. — Micmac Pictographs; Colonel Mallery's Investigations Last Year. — The New Naval Observatory Building to be erected at once.

The Washington Scientific Societies.

A FEW years ago the Scientific Club was the only organization of that character in Washington. It met fortnightly at the houses of its members, listened to the reading of papers, and closed with a collation. It had many very interesting meetings, at which important papers were read; but the zeal of its members was not as great as its organizers had hoped for. The reason for this seemed to be, that, nearly all the scientific men in Washington being specialists, they were greatly interested only in those lines of inquiry in which they were themselves engaged, and in such others as were directly or remotely related to them. But the papers at any given meeting of the Scientific Club might interest only a very few of those who were present. There was no way to fit the subjects to the audience, or *vice versa*, where both were so diversified. It was therefore thought best to have specialized societies instead of one general one, and a beginning was made by the organization of the Philosophical Society. It met fortnightly, as the Scientific Club had done, but in a hall instead of at a private residence, and the collation was omitted. The meetings were well attended, the entire time was occupied with valuable and interesting papers, and the zeal of the members grew instead of diminishing. The Philosophical Society in due time carried the idea of specialization a step farther, and organized a mathematical section, at whose meetings papers upon pure and the more abstruse mathematics and its applications were presented instead of in the meetings of the full society. There is no lack of material for the fortnightly meetings of this section, or of interest on the part of its members.

The next of the Washington scientific societies to be organized was the Anthropological. The almost exhaustless amount of valuable archæological remains that were being discovered and collected for preservation, the successful work of the Bureau of Ethnology, and the labor of classifying, arranging, and discussing the collections, caused the employment of a great number of scientific men in different branches of Anthropology, and they formed a society for the discussion of these topics. It has been as successful as its less specialized predecessor, the Philosophical Society. There is never any lack of interest, or any difficulty in securing sufficient papers to fill up in their reading the full two hours that the society is in session on every alternate Wednesday evening during the season.

For like reasons, and attended with an equal measure of success, the Biological Society, the Chemical Society, and the Geographic Society have been organized. The last-named, although the youngest, already has more than two hundred members, and all of its meetings during the past season have been successful ones. Mr. Gardiner G. Hubbard is the president of it.

When the Philosophical Society was formed, the social element, which had been one of the attractive features of the old Washington Scientific Club, disappeared. The meetings being held in a hall instead of in private residences, and the entire time of the meetings being occupied with the reading of papers, the members found that they had very little opportunity to become acquainted with each other; and so, in order that the social advantages might not be lost, the Cosmos Club was formed. It began in a modest way, taking rooms in an upper story of the Corcoran Building, and furnishing them comfortably and tastefully, but not expensively. There were reading, writing, smoking, billiard, and card rooms; the first supplied with the leading daily and weekly papers of this country, and with the principal magazines and periodical scientific publications of the United States and Europe. The initiation fees and annual dues were moderate, and the Cosmos Club flourished from the beginning. It is now established in its own house in one of the most central and beautiful locations in Washington, and is the resort of the scientific men in Washington. Once a month, during the winter, a loan exhibition of paintings, objects illustrating