stone, to which it may or may not be united by means of pitch. Acorns are poured into this and hulled, and afterward reduced to meal. In those instances where the hopper is not fastened to the stone, the hulls remain above, and the powdered acorns sift down into the basket-tray. Water-tight baskets for 'stone-boiling' mush and for other culinary operations are made by this tribe. The mush-paddle of wood (fig. 1), the ladles of horn (figs. 2, 3), and the small stone paint-mortar (fig. 4), must not be overlooked.

The Pima or Cocopa miller (2) has for her outfit a carrying-net, a bean-crusher, a trough-mortar, a granary, and a 'metate,' besides a great variety of pottery, which the Hupa does not make. It may be mentioned here that none of the great Tinné stock, to which the Kutchin, Athapascan, Apache, and Navajo belong, seem to have made pottery at any time. The bean-crusher (fig. 10) is a cone of coarse strong wattling set in the ground. It is carried to the bean-trees, and in it the pods are broken up by means of a long wooden pestle (fig. 12), so that the miller can get a heavier load into her net. In other words, her 'first process' is crushing the pods in the field. The carrying-net of these tribes is most ingenious, consisting of four frame-sticks, a hooped rim, and a net woven in a very curious and difficult stitch. Besides the net, there is a back-pad made of palm-leaf, a padded head-band, and a forked rest-stick, which the harvester-miller uses as a cane when carrying her load. The gathered beans are stored in beehive granaries (fig. 16) of various patterns, made of straw sewed in a continuous coil by means of tough bark. The 'second process' is the reduction of the broken pods to coarse meal in a wooden trough or mortar (fig. 13). The last process is that of the 'metate,' or mealing-slab (fig. 15). The jars for holding the meal (fig. 14) are cream-colored, decorated in black. In summer the miller works in an open shed (fig. 17), but in cooler weather she transfers the scene of her operations to a mud-covered, wattled hut (fig. 18).

Let us now turn to plate 2. In the eastern part of the United States are found multitudes of well-wrought pestles, such as those shown in fig. 3; but there is a scarcity of good mortars from the same section. This scarcity can be accounted for by the fact that the mortars were perishable, being made of wood. It must not be forgotten that this is the region of maize (fig. 2) and hominy, and until very recently the hominy-logs or wooden mortars (fig. 4) survived on our southern plantations. Even at the present day it would not be difficult to find them in use in the more remote regions. Mr. Schoolcraft gives an illustration (fig. 4), showing how the ingenious miller has invoked the elasticity of a limb to lighten her task, and it would be interesting to know whether the miller or the bowyer was the first to make use of this labor-saving device.

The Sioux Indians formerly dried buffalo meat until it could be reduced to meal or pemmican. The outfit of the Sioux miller then consisted of a bowl made of the toughest dried rawhide, and a maul (fig. 1). The stone head of this maul was bound to the slender wooden handle by means of a hood of rawhide, put on green and allowed to shrink. The Ute miller, living in the deserts of the great interior basin, has to utilize every kind of seed that will sustain life. Her set of tools includes a conical carrying-basket (figs. 8, 10), a gathering-wand (fig. 9), a fanning and roasting tray (fig. 7), and a 'metate,' or mealing slab (fig. 11). These mealing-slabs (figs. 11, 12, 13) are common in tropical and sub-tropical America. The conical basket is closely woven, with a buckskin bottom, and has a soft head-band for the miller's forehead. The gathering-wand is an open-work, spoon-shaped frame of twine basketry, and is used for beating seeds into the carrying-basket, as shown in fig. 8. The fanning and roasting tray is shallow, and shaped like a cream-skimmer. It is used to separate chaff from seeds, or to parch the seeds, which are put into the tray with a hot stone, and the whole deftly shaken together. The parched seeds are afterwards reduced to powder on the mealing-stone.

There is scarcely a tribe or people that does not invoke the services of the miller in some manner. Many tribes use a greater variety of stone implements than do those mentioned, and all tribes have their own separate devices for gathering, storing, and grinding provisions. Take the wood and other perishable substances away from these millers' outfits, and we have left an archeological cabinet. In a general and cautious way, add these articles and attachments of animal and vegetal origin to your collection of ancient milling-tools, and you will have a comprehensive notion of the milling methods in the olden times.

O. T. Mason.

PARIS LETTER.

Two of the many posts formerly held by the eminent zoölogist Henri Milne-Edwards were recently filled by elections at the Academy of sciences and the Sorbonne. Milne-Edwards's successor in the former institution is M. Sappey, who was recently removed from his professorship in the medical school on account of his age. M. Sappey's principal competitor was M. Ranvier, the well-known histologist, who, it must be conceded, ranks higher as a scientist than his more fortunate

opponent; but, as M. Ranvier is a much younger man, he can afford to wait a little for another opportunity, and it is not likely that he will have to wait long. M. Sappey has always worked hard and honestly, preferring the laborious life of the scientist to that of the physician or surgeon. The competitors for Milne-Edwards's professorship in the Sorbonne were Prof. Yves Delage and M. Perrier, professor in the Museum of natural history. M. Delage, who was elected to the vacant professorship, is a very able young zoölogist.

M. Charbonnel-Salle has been appointed professor of zoölogy in Besançon. M. Duchartre's successor as professor of botany will probably be M. G. Bonnier, the son-in-law of M. van Toeghem, the able botanist of the Museum of natural history. This relationship is really the only reason for his election, as he has made no good personal investigations to speak for him. The comments and criticisms on the future professor's abilities and talents are most unfavorable.

Paul Bert's successor will most likely be M. Dastre, a good worker and a learned man, who was for many years the assistant of M. Bert. His researches concerning vaso-motor nerves are much valued. Professor Chauveau of Lyons has been appointed to the Museum of natural history in the place of M. Bouley, who died some time ago. He is a thorough physiologist, and has done much good work, especially on microbes and the physiology of the circulatory system. His appointment is highly approved, but it is regretted that he did not compete for the professorship left vacant by the death of Paul Bert. Some interesting elections will soon take place in the Academy of sciences to fill the seats of MM. Bert and Robin. Professor Ranvier will most likely be elected to Robin's place. For the other there will be two principal competitors, — Germain Sée and Charles Rochet. The latter gentleman has many chances, and his election would meet with general approval.

At a recent meeting of the Société de biologie, MM. Fontan and Ségard read an interesting paper on the applications of suggestion to therapeutics. The writers have collected a hundred cases in which they have availed themselves of the possibility of putting their patients into an hypnotic state, to suggest a partial or entire cure. Their conclusion is, that suggestion may be of great value in cases where disorders of the motor or sensory powers exist, or even where there are anatomical disorders affecting the circulatory or secretory systems, such as follow upon traumatisms or upon general diseases, such as rheumatic diathesis and others. They have employed hypnotic suggestion in cases of traumatic arthritis, cerebral shock, urethritis, dyspepsia, and acute rheumatism, with good results, in most cases having been able to effect a complete cure in from three to six sittings. It may be added that none of the patients were at all hysterical. From a perusal of the observations quoted by the gentlemen named, it would seem that the influence of the mind on the body is greater and deeper than has hitherto been imagined. The way in which MM. Fontan and Ségard operate is very simple. The subject is put into an hypnotic trance (only three per cent of the patients are refractory to this part of the process), and is told, for instance, that his knee (in a case of hydarthrosis or arthritis) will work easily and without pain, or that (in a case of dyspepsia) the most indigestible foods will be easily digested. Generally the cures have been effected in a progressive manner, the disappearance of one symptom being suggested at the first sitting, that of some other at the next, and so on.

A paper on skin-grafting from the frog to man was read at another recent meeting of the same society by Dr. Dubousquet-Laborderie. The experiment was tried in the case of a man whose feet had been burned by molten iron. On one of the wounds Dr. Dubousquet put four grafts of human skin; on the other, four grafts from the skin of a frog. All of them took firm hold on the wounds. The frog-skin grafts retained their peculiar color a few days, afterwards changing to the color of the human skin. The healing process progressed rapidly, owing in part to the strict antiseptic precautions taken.

Merlatti, the rival of Succi, has successfully completed his forty-days' fasting experiment, though the medical committee appointed to watch the proceedings were of opinion many times that the experiment ought to be abandoned, owing to alarming symptoms. Merlatti, however, was determined to persevere, declaring that nothing would induce him to eat a morsel of food before the appointed time. He is naturally a hearty eater, and had prepared himself for his long fast by devouring a whole roast goose. When he ended his fast the other day, his stomach, so long accustomed to entire rest, refused at first to retain food. Succi continues his experiment with entire success. These experiments, as well as others of the same nature, are all very well, but in none of them has sufficient proof been afforded that fair play prevailed from beginning to end. One doubtful or suspicious member in a committee is sufficient to render valueless the whole experiment. There is also the possible dishonesty of the fasters themselves, and it may be remarked that in no experiment of the kind hitherto performed has fraud been impossible.

A man who walks about the streets, and who receives crowds of visitors daily, may, by the aid of an intelligent friend, obtain food in spite of the strictest surveillance. On the other hand, in these experiments more attention ought to be given to variations in weight, hourly as well as daily, and also to the excretion of urea. If these points were carefully studied, interesting and useful facts could be learned, and a better control of the patient secured. Of course, these experiments of Succi and Merlatti have brought forward numerous imitators, and many Italians may be met here who profess to be able to fast three, four, or even six months. Some, like Succi, pretend to possess a marvellous liquor; others, like Merlatti, do not. There is one faster in Brussels, another in London, a third in Algiers, while others flock in to Paris from different towns; and the daily papers publish a great number of anecdotes of persons of all descriptions and ages and colors who have lived longer or shorter periods of time without taking a morsel of food. But these stories are not much believed in. Many comments have been drawn forth from medical quarters by the fasting experiments mentioned, M. Bernheim of Nancy offering the ingenious suggestion that they may be accounted for on a theory of 'auto-suggestion.'

A work of much interest was begun some time ago in Cairo, — that of disinterring the Sphinx of Giseh. According to the latest reports, about one-third of the sand in which it is embedded has already been removed. The fore-paws and the right side have been partially brought to view. The paws were not hewn in the stone, as the rest had been, but were built up of bricks, owing, no doubt, to the less solid nature of that part of the stone in which they would otherwise have been carved. Viewed from above, the disinterred part seems inharmonious, but a judgment as to the general effect cannot be formed until the sand is entirely removed. It may then prove to be of less harmonious proportions than such monuments generally are; and in that case, as M. Maspéro thinks, it must be ascribed to an age more remote than that of the pyramids.

The conseil général of the department of the Seine decided at a recent meeting that it would be necessary to create a laboratory for the study of contagious diseases of animals. This is for the special purpose of preventing diseased meat from being introduced and sold in Paris.

A curious lawsuit is pending before the court of justice of Paris. It is especially curious on account of the facts upon which it is based, the pretended discovery of a method of extracting considerable amounts of gold from buhr-stone, a siliceous stone of tertiary formation, very abundant in the neighborhood of Paris. One chemist has declared, that, by the aid of this new method, from three to two hundred and forty grams of gold may be extracted from each ton of stone. Another says he has found as high as five hundred grams per ton, besides silver and other metals. On the other hand, civil engineers say they have not found an atom of the precious metal in the stone. Three hundred dollars in gold would certainly seem a pretty good yield for that sort of rock; but the whole thing seems chimerical yet, and the people who have invested their money in the business say it does not pay at all. They do not believe in the method now, and have begun suit against the inventor to recover the coined gold he extracted from them.

Professor Lépine of Lyons has published in the *Semaine médicale* a paper on the physiological action of a newly discovered antipyretic or antifebrile, studied by MM. Cahn and Hepp of Strasburg a short time ago. This antifebrile does not affect the healthy organism when given in a fifty-centigram dose. If a greater quantity is given (double or treble the dose mentioned), there may be present some cephalalgia, with cyanosis. When given to feverish patients, it abates the fever in a marked manner. It must be given at the highest point of the daily rise of fever, or, better, an hour before, in case the precise moment is known beforehand. The dose of fifty centigrams is the one usually preferred. The patient derives great benefit, the body temperature remaining normal or low, the heart pulsating with the same or increased energy, with a general feeling of well-being present. Some very remarkable cures have been effected in cases of typhoid and malarial fever. Professor Lépine speaks very highly of the antifebrile in cases of feber dorsalis as an agent to be used when neuralgic pains — so very rebellious and troublesome to the patient — are present. One or two fifty-centigram doses are enough in most cases, and the pains disappear in about half an hour. This fact, a useful one to know, had not been heretofore noticed. V.

Paris, Dec. 20.

NOTES AND NEWS.

THE administration of General Hazen as chief signal officer is to be credited with the organization and encouragement of our system of state weather-services, which is rapidly extending in all parts of the country. This work is especially in charge of Lieutenant Dunwoody, and local services are now established in Louisiana, Alabama, Nebraska, Mississippi, Georgia, Minnesota, Ohio (by legislative enactment, making an appropri-