

about two-thirds that distance. Careful astronomical observations were made, and the final reduction of the many results obtained will greatly ameliorate the charts of the Kongo basin. The Rev. Mr. Grenfell insists upon the richness of the upper Kongo basin, and especially of the Kassai valley, and reiterates the opinion expressed by others, that a railway across the arid region of the lower Kongo is the only means by which commerce can be assured an entrance into this vast and fertile region.

**Trade-route to Bolivia.**—Information from Buenos Ayres indicates that Thouar departed thence for the upper river last February, and expected to reach Tarija early in April. He was to ascend the Pilcomayo with a Bolivian escort on a steamer of two hundred tons detailed for the purpose. It is hoped that the explorations now in progress will result in a permanent route for the commerce of eastern Bolivia toward the Atlantic. M. Thouar's health continued good, though fever was very prevalent: he attributes his exemption, at least in part, to the use of fumigations of sulphur.

**Lake Moeris.**—Mr. Cope Whitehouse, who has been investigating the supposed site of Lake Moeris in the Raian basin, writes, that, assisted by Herr Stadler, a government engineer, and his party, a line of levels has been run between the canal of Gharak, connecting with the Nile, and the margin of the depression. At a point twelve metres from the level of the Mediterranean a bench-mark was established, and a sketch of the whole basin made. The ruins of the Wadi Moelleh are supposed by Mr. Whitehouse to be those of Dionisian placed by Ptolemy on a long and narrow arm of Lake Moeris. Col. Scott Moncrieff, director of public works, will have made a general plan and estimates for a canal, to fill the basin from the Nile, as soon as the hot season is over. The Mussulmans regard the project favorably, as they have a tradition that Lake Moeris was established by the patriarch Joseph, the Bahr Jussuf still retaining his name. It would result from these works that at high Nile an area of six hundred square kilometres could be covered to a depth of eighty or ninety metres, capable of doubling the volume of the low Nile, and of rendering an immense extent of now desert ground susceptible of cultivation.

**The spring in Alaska.**—The spring in Alaska has been unusually late and cold, with exceptional precipitation. A large number of prospectors have crossed over the divide to the British head waters of the Yukon, in search of the rich diggings found by a lucky few last year. Many of them are doubtless doomed to severe disappoint-

ment. The fishing-fleet has already sailed from San Francisco, consisting of eleven vessels, of 2,331 tons, manned by 273 men. Four of the vessels fish in the Okhotsk Sea; the remainder, in Alaskan waters.

#### PARIS LETTER.

PROFESSOR DE LACAZE-DUTHIERS, whose name is familiar to all zoölogists, owing to many very good contributions to the biological sciences, has, after a rather severe illness which kept him confined to his room for more than three months, resumed his yearly task, and begun his lectures. As usual, his opening address was devoted to a general summing-up of what work has been done in his laboratory during the past year; but this time, instead of a short summary, he delivered a lengthy address concerning his seventeen-years' task as a professor of zoölogy in the Sorbonne.

M. de Lacaze-Duthiers was appointed in 1869. Professor Milne-Edwards being then professor of comparative anatomy, M. de Lacaze-Duthiers had to undertake the teaching of zoölogy proper; which he did, it must be said, with a great deal of talent and energy. He understood very well that zoölogy can be taught only in part, and that the greater part of that science the student must learn by himself alone, without tuition, by practice and experience under the direction of his teacher. In order to give students all possible aid, he undertook to found a marine biological station on the Brittany coast. With the aid of government, he began the laboratory of Roscoff in 1872, and thus accomplished a very useful work. I visited this laboratory some two or three years ago, and spent there a month or so in scientific pursuits. It is very well organized and directed.

Roscoff is a little town, or rather a big village, near Morlaix, where a few people come to spend the summer season, for sea-bathing, and where there is nothing to prevent a good time of hard work, since the only diversion to be had is work itself. The inmates of the laboratory, who are allowed to spend their time as they please, with Professor de Lacaze-Duthiers's consent, live in the laboratory itself. Each has his sleeping-room. Some work in their sleeping-rooms; others, in two or three big rooms fixed up for working purposes, and representing real zoölogical laboratories. A library and a parlor are for general use; an aquarium, with a number of tanks, contains the rare or curious species of the coast; there is also a collection of preserved specimens, which will be used some day to build up a fauna of the Roscoff coast.

Roscoff receives a good number of students who

are preparing their *licence-ès-sciences*: the other visitors are either licentiates who are preparing their doctorate theses, or doctors who are pursuing new researches. The fauna is very rich, and the species are numerous. The tides being very high, there is a good deal to be found at low water, under the rocks, or in the pools. The laboratory is open from May to October.

In 1881, Professor de Lacaze-Duthiers began forming another laboratory, a winter one, on the Mediterranean coast. This is the laboratory Arago of Banyuls, close to the Spanish frontier. The state had little to do with the establishment of this laboratory: Professor de Lacaze-Duthiers preferred asking money right and left, of the municipal boards, of the towns of Perpignan, Banyuls, etc., and succeeded in getting money enough to build a very commodious laboratory in a very short time. Having been an inmate of this laboratory during a whole winter season, — the Banyuls laboratory is open from November to June, — I am qualified to speak of it; and it must be said that the organization is a very good one.

As there is no tide in the Mediterranean, the animals are fetched by two or three boats belonging to the laboratory: they are furnished with all the necessary implements, and have a crew of four men. Those of Roscoff need only two or three sailors.

At Banyuls the persons who work in the laboratory do not live in it: each has his working-room, but one must lodge and board in the village, where good enough accommodations can be found. I had there a whole house, with accommodations for five persons, at the rate of twelve dollars a month. Living is cheap; and I can say from personal experience, that, for a biological student, nothing can be pleasanter than a season at Banyuls, where the climate is generally fine, and the scenery very pretty, looking out on the blue Mediterranean.

The laboratory comprises an aquarium, with tanks full of pretty and curious specimens of marine life, a library, a collection of preserved specimens, and accommodations for twenty-five persons. There are three boats and one life-preserver. Although the fauna is not as rich as it is in Roscoff, the animals are numerous. The Medusae, Siphonophora, and many other Coelenterata are especially pretty, and on some days are to be found in enormous numbers. The laboratory of Banyuls is especially reserved for students who have already taken their degree of licentiate, and are preparing a thesis, or for scientists who wish to study some zoölogical questions; but it is not open to beginners, to persons who have not yet had practical experience in zoölogy.

After having founded his first laboratory, that of Roscoff, Professor de Lacaze-Duthiers founded, in 1872, his *Archives de zoologie expérimentale et générale*, so as to be able to publish the works of his pupils and of the persons who come to his laboratories. This paper has succeeded so well, that it is at present overcrowded, and cannot accept all that is proposed for publication.

These results show that Professor de Lacaze-Duthiers's first seventeen years in the Sorbonne have been very useful to zoölogy, especially if one considers the number of papers he has published, and the number of pupils he has had, and has yet.

In consequence of Milne-Edwards's death, Professor de Lacaze-Duthiers has taken the professorship of comparative anatomy: that of zoölogy has been given to one of his best pupils, M. Delage. It is to be hoped that M. de Lacaze-Duthiers will be able to continue a long time making himself useful to science. The students, on hearing his address some days ago concerning his past work, all concurred in this feeling, and made it known by very liberal and hearty cheers.

In one of my last letters I spoke about the great services rendered by photography in the recent caving-in of a quarry near Périgueux. MM. Langlois and Siemens have continued taking photographs of the yet buried victims, and have disclosed new facts. The photographs, taken in the way I have already explained, show three corpses, of which one was immediately and easily recognized; another is supposed to be a man who was in the quarry at the time of the accident; the third is unknown. These photographs not only show all the tools and implements the victims had with them, such as saws, planks of wood, a cart, etc., but they also show that the unfortunate men must have lived some time, since one of them, who always wore short-cut hair, is seen on the photograph to have very long locks. It is certain that these men lived some time, and that the smoke perceived some days after the accident was due to their having built a fire to warm themselves or to do some cooking. The public feeling is very much excited against the directors of the quarry for not having earnestly tried to get at the victim when it might still have been useful.

At the last meeting of the Société de psychologie physiologique a good many strange facts were made known by different persons, concerning instances of somnambulant sleep induced at a distance. It would seem that certain persons are able to induce sleep in a subject, Madame B., by pure mental operation, by willing it, at a distance of some hundred yards. The fact is a very interesting one; but it seems that it would be better,

before trying to explain it, as some would like to, to see if the fact is real and positive. The persons who have witnessed it are certainly very trustworthy, but this is no guaranty that they had all the requisites for experimenting in a satisfactory manner. Deceitfulness is so frequent in persons of hysterical nature, and experimenting is so difficult, as the Hippocratic aphorism says, that such questions ought to be studied only by professional experimenters. One may be a sound philosopher or a good physician, and yet understand nothing about experimenting. As for medical students, their authority in such matters is of little worth. The society ought to appoint a committee to investigate the matters brought forward, and select some professional experimenters of a sceptical turn of mind, and somewhat more incredulous than are most of the persons who study, or pretend to study, somnambulist phenomena.

At the meeting of May 17 of the Academy of sciences, the academy presented M. Chevreul, the veteran of French science, with a very fine gift, in commemoration of his hundredth year. As he came into the room, the whole assembly rose, and the president, Admiral Jurien de la Gravière, made a little speech, in which he very appropriately remarked "that what we honor and celebrate in your green and majestic old age is not, to be sure, the length of your life: it is, above all, the good use you have made of this exceptional favor of Providence." The gift made to M. Chevreul consists of a bronze by Dubois, representing 'Study and meditation.' It is allegorical, and does not at all represent M. Chevreul's features, which, it must be said, are not particularly handsome. M. Chevreul answered briefly and in very feeling terms. It is in August that M. Chevreul's hundredth year will close. It had been decided that it was better to anticipate the anniversary some weeks, because in August many members of the academy are out of Paris, taking some rest, or travelling, and because postponing is rather dangerous with a centenarian.

Dr. Worms has recently made known to the Academy of medicine the results of his investigations concerning Daltonism and other sorts of color-blindness among the *personnel* of the Northern railway. The number of persons examined is 11,173, and the proportion of defective color-vision is a very small one. Two persons only were utterly incapable of distinguishing one color from another; three were color-blind for red; six for green; eighteen mistook green for red; fifteen could not distinguish green from blue or gray; fifty-two had a certain weakness in color-vision. Upon the whole, the defects of color-vision are very scarce among the persons examined by M. Worms; and

there is not much danger to be feared for railroad travellers from these defects.

M. Balbiani, professor in the Collège de France, published some days ago, in the *Revue scientifique*, an interesting paper on viviparous fishes, in answer to a letter written by a person of New Orleans concerning a viviparous ray. It seems, from the letter, that this fish is very much disliked by fishermen, not only because it is viviparous, and so differs from other fishes, but because it seems also to have menses, like mammalia. Professor Balbiani contributes an interesting note on the subject, and explains in a very acceptable manner the appearance which so much troubles the New Orleans fishermen.

Among the recent publications of scientific interest, we may notice Professor Cornil's second edition of 'Les bacteries.' This book is a very good one, and the first edition was sold in a few months, so that a second has become necessary. Professor Cornil has added many new facts concerning bacteriology, and his book is more valuable than ever.

Professor Herzen of Lausanne has published a little work on digestion. He entirely confirms Schiff's theory of peptogenes, and shows how well conducted have been this physiologist's experiments. Professor Herzen was able to examine a man with a gastric fistula for some time, and has made very useful experiments concerning the therapeutics of dyspepsia. He shows how this disease ought to be treated, rationally, and his book is of practical as well as of scientific interest.

We may also notice the second edition of Professor Bouchard's 'Maladies dues au ralentissement de la nutrition' ('Diseases due to retardation of nutrition'). This book is always full of suggestive facts, and deserves the fame it has enjoyed since the day it came out.

M. Miquel, the well-known micrographer, recently read at the meeting of the Société de médecine publique, a paper on horal variations of aerial bacteria. There is a sort of tide with high and low water marks in the distribution of these micro-organisms. There is a first high-water between six and nine A.M., and a second from six to eight P.M. The minima are at two P.M. and two A.M. These differences are also perceived in open rooms, but not in closed apartments. The inference is, that it is better to ventilate rooms from eleven in the evening to five in the morning; but this is not always very easy and practical.

Some days ago M. Denika, a pupil of Professor de Lacaze-Duthiers, published a very interesting thesis on the structure of a gorilla embryo, studying all the particulars of the different systems of

the body, and establishing an interesting comparison with the organization of other monkeys. This gorilla embryo is the first that has been dissected yet, and studied with real care.

A new publication was started some time ago in Paris. It is the 'Grande encyclopédie,'—a cyclopaedia in which all facts at present known concerning science, literature, arts, legislation, etc., are condensed; it is a summary of present knowledge. The first volume is now ready. The whole publication will comprise some twenty or twenty-five quarto volumes. It is written by a number of contributors, and only by specialists, under the direction of a committee comprising MM. Berthelot, Hahn, Levasseur, Laisant, Marion, etc. It seems to be a very good idea; and, although the 'Grande encyclopédie' does not pretend to create the furor that Diderot and d'Alembert's did, from a philosophical point of view, it certainly will be of great use, if it continues as it has begun, being very complete and well prepared. There are no such cyclopaedias in France yet, written by competent persons; and there is no doubt that this publication really meets a general demand. It is printed with great care, and most of the articles are made up from the latest and best documents. It is to be expected that the public will look on it favorably, if it continues as it has begun, and if the contributors are always well chosen by the directing committee. It is time that France should have a cyclopaedia able to stand a comparison with those of England and of America.

At a recent meeting of the Academy of sciences, M. d'Arsonval presented a very well combined instrument devised for the investigation of the duration of different psychical or physiological phenomena. It is very useful, for instance, for the study of reaction-time, of perception-periods, and for the study of the dilemma-time in distinguishing two or more perceptions. The great advantage of this instrument is, that it disposes of the estimation of the experimenter himself, and gives much more exact results in the very delicate and difficult estimation of the duration of mental phenomena. M. d'Arsonval is a very able man in all that concerns mechanical contrivances; and his instrument, which I saw at the works of Ch. Verdin (the constructor) some days ago, is a very well contrived one.

Paris, June 15.

V.

#### NOTES AND NEWS.

CONGRESSMAN VIELE of New York made a strong effort in the house last week to secure an appropriation of ten thousand dollars to continue the National board of health. Representative

Randall declared that there was no need for a national board of health, and the house seemed to coincide with him, for the item proposed by General Viele was not adopted.

—Dr. C. H. F. Peters, of the Litchfield observatory of Hamilton college, discovered on the night of the 28th of June a new asteroid of the eleventh magnitude: its number will be 259. Number 258 has been named Tyche.

—The organizing committee of Section A of the British association has arranged that a special discussion shall be held, jointly with Section D, on the physical and physiological theories of color-vision. The discussion will be opened by Lord Rayleigh, and Dr. Michael Foster will also take part in it. Persons who wish to contribute papers bearing on the subject of discussion are requested to send their names to the recorders of Sections A or D, at 22 Albemarle Street, W., not later than Aug. 1.

—'Consanguinity in marriage' was the subject of an address by Dr. McKee at a recent meeting of the Ohio state medical society. The belief that consanguineous marriages are followed by evil effects upon the offspring is not accepted by the author, and the object of his address was to show its falsity. A very interesting and concise account is given of the Mosaic law, and also of that of the Greeks and Romans, in reference to the marriages between relations; and full quotations are made from the statistics of modern writers and observers. Among the eighteen conclusions drawn as the result of the author's studies are the following: 1. Like breeds like, good or bad, entirely independent of consanguinity. 2. Intemperance, luxury, dissipation, sloth, and shiftlessness, as well as hygienic surroundings and innumerable other causes, should bear much of the responsibility laid at the door of consanguinity. 3. Data are of doubtful reliability, full of flaws and false reasoning. The noted cases are the unfortunate ones. The favorable are unknown or forgotten. It is the ill news which travels fast and far. 4. Statistics show about the same proportion of deaf-mutes, idiots, and insane persons, descendant from consanguineous marriages, to the whole number of those unfortunates, as the number of consanguineous marriages is to the whole number of marriages. 5. Consanguineous marriages which bring together persons having a disease or morbid tendency in common are dangerous to the offspring; not, however, one whit more so than the marriage of any other two persons not related, yet having an equal amount of tendency to disease in common. 6. The half a hundred abnormalities ascribed to consanguinity, including almost all