

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

the ills that flesh is heir to, — among others, whooping-cough, — approaches the ludicrous. 7. Consanguineous marriages, no other objection being present, should not be opposed on physiological grounds. The address closes with an exhaustive bibliography of the subject, including some thirty writers, and extending, in point of time, from Moses to the present year.

— A French journal cites the fact that a number of persons have recently been poisoned in France by eating asparagus grown in localities where small amounts of sulphide of carbon existed in the soil. The symptoms were those of cramps and diarrhoea.

— Rumination is commonly supposed to be a digestive process peculiar to certain of the lower animals. There are, however, some forty cases on record where this power has been possessed by members of the human species. It usually commences so soon after birth that the affected individual cannot state its commencement, and appears to be present in males almost exclusively. It is in all its steps essentially the same as in the ruminating animals, and, as it mostly occurs in those who are large eaters, it is evidently one of nature's methods to provide for more thorough mastication in those who eat to excess, or do not take the necessary time to masticate their food properly in the first instance.

— The Boat-sailer's manual, by E. F. Qualtrough, U. S. N. (New York, *Scribner*, 1886, 24^o), deserves and should command a ready sale among the many whose interest in the subject is awakened or revived by the triumphs of the Puritan or Priscilla. There is a great deal of information in it, most germane to the subject and very well arranged. The language is, however, unintelligible to the general reader; and the glossaries, of which there are two, are quite defective. They should be consolidated, to save the trouble of two searches, and even then there are forty-two words unknown ashore, used by the author and not defined.

— The annual report of the astronomer royal, Mr. Christie, was submitted to the Board of visitors of the Greenwich observatory on June 5, and gives an account of the progress and activity of the observatory for the year ending May 20, 1886. Copies of the original report have not yet reached this country, but the following particulars of its contents have been obtained from abstracts which have been published in *The Athenaeum* and *Nature*. The regular work of the transit circle and the altazimuth has been continued, and very satisfactory results have been

obtained with the apparatus for determining absolute personal equations brought into use with the former instrument some months ago. Spectroscopic observations include a considerable number made of the new star which burst out last August in the great nebula of Andromeda. The spectroscopic observations of Sirius indicate, as in the last three years, a displacement of the F line towards the blue: this displacement would correspond to a motion of the earth towards Sirius at a rate of something more than twenty miles per second, though, from the nature of the observations, the amount of such a motion cannot be considered as very accurately determined. For the year 1885, a photographic record of the sun's surface can be made out for 360 days by filling up the gaps in the series of Greenwich photographs from photographs obtained in India and the Mauritius. Observations of comets and of casual phenomena have been made with the equatorials; and the magnetic and meteorological observations, the time-service, etc., have been kept up as in previous years. The full import of the statement that the reductions of the observations are keeping pace with their registration, will be appreciated by all who are engaged in routine astronomical work. In regard to the new equatorial, Mr. Christie says, "The construction of an object-glass of 28 inches aperture and of 28 inches focal length, with suitable tube, to be mounted on the south-east equatorial, has been authorized by the government, and the necessary funds have been provided in the estimates. The work has been intrusted to Mr. Grubb, with whom I have arranged the details of the tube, which is to be of special construction, adapted to the conditions of the mountings, and available for spectroscopy and photography as well as for eye observations. Mr. Grubb proposes to provide means for readily separating the lenses of the object-glass to such a distance as will give the proper correction for photographic rays."

— In connection with the recent notice of Professor Hull's 'Report on the geology of Palestine,' it has recently been stated (*Geol. mag. Lond.*, September, 1884) that Dr. Schweinfurth, the well-known African explorer, has recently announced the discovery of paleozoic fossils in the Wady Arabah, west of the Gulf of Suez, in sandstone hitherto regarded as Nubian sandstone. The fossils have been submitted to Professor Beyrich, who identifies a species of *Spirigera* or *Athyris*, allied to *A. concentrica*, and stems of crinoids. The exposure seems to be not dissimilar from that of the Wady Nab on the other side of the Red Sea. Dr. Schweinfurth's paper is in the Bulletin

of the Egyptian institute for 1885 (Cairo, 1886). This discovery confirms the suggestion of Sir William Dawson as to the carboniferous age of the lower part of the Nubian sandstone of Egypt, based on a fossil plant and on its geological relations.

— The human spleen has been removed seven times in Italy, and in but two instances has the patient recovered. Prof. Antonio Ceci of Genoa has recently performed the operation, and his is one of the two successful cases. The patient was a poor girl, seventeen years of age, and the enlarged spleen weighed one-fifteenth of her entire bodily weight.

— Malignant pustule is fortunately of very rare occurrence. A patient suffering from this disease has recently died in Guy's Hospital, London. He was employed on a wharf, in the handling of foreign hides, and undoubtedly contracted the disease from the hide of an animal which had been affected with the disease known by the French as charbon, by the Germans as milzbrand, but by English-speaking people as anthrax. The patient noticed a pimple on the back of his neck, which in twenty-four hours became greatly enlarged, and the glands of the neck were swollen. The surgeons removed the enlarged pimple at once, but without avail, the man dying in about four days from the time he first noticed the pimple. This disease may also be contracted by the bite of an insect, a fly for instance, which has been feeding upon the carcass of an infected animal. The microbe of the disease is a bacillus (*Bacillus anthracis*), and was observed in the blood of cattle as long ago as 1849 by Pollender, although its importance was first recognized by Davaine in 1850.

— The evidence of the greater safety of ether than chloroform as an anaesthetic is accumulating very rapidly. In England during 1885 there were twelve deaths attributable to chloroform, and but three to ether.

— Physicians are now using aniline-oil as a local anaesthetic when simple operations, such as the opening of a felon, are to be performed. The finger, in such a case, is dipped for a short time in the oil, and, although the flesh may subsequently be cut to the bone, it is said there is absolutely no pain.

— We learn from the *Sidereal messenger* for July that the contract for mounting the 36-inch objective has been awarded by the Lick trustees to Warner and Swasey of Cleveland, O., for \$42,000. The telescope is to be fifty-seven feet long; the diameter of the tube, forty-two inches. Provisions are made by which it will be possible for the observer at the eye-end of the telescope to com-

mand all the possible motions, and these same motions can also be controlled by an observer stationed on a small balcony twenty feet above the floor. It is expected that the mounting will be completed in April, 1887, and that the glass will be brought to Mount Hamilton and put in place some time during the summer following. The total cost of the equatorial and dome will be about \$164,850; the cost of the dome being \$56,850; the mounting, \$42,000; the visual objective, \$53,000; the additional photographic lens, \$13,000.

— Mr. H. C. Wilson, assistant astronomer at the Cincinnati observatory, has accepted a position as computer under the Transit of Venus commission in Washington.

— The 'Atlantic pilot chart' for July calls attention to the necessity for the establishment of a simple international code, by means of which passing ships can indicate readily and exactly the points where they have encountered ice. Many systems have been proposed, but that copyrighted by Mr. F. Wyneken of New York seems to be the best yet offered, and has been adopted by many transatlantic steamer companies according to the chart.

— MM. Regnard and Loye recently made some investigations of interest on the body of a criminal who died under the guillotine. For physiological research the authorities arranged that possession should be given instantly after the execution. Immediately after the decapitation a temporary rigor of the whole muscular system took place. In lifting the body by the heels the whole frame was moved, and remained absolutely rigid and inflexible. Even the eyelids could hardly be forced open. Not a tremor of any sort was discernible. This state lasted between two and three minutes. At three minutes from decapitation voluntary reflex action had completely disappeared. Irritation of the soles of the feet, of the conjunctiva, of the spinal marrow, produced no effect. Only the pupils contracted slightly before a bright light. The first experiment was to determine the action of the pneumogastric nerve on pulmonary contractility. The investigations of Williams and Paul Bert have shown that in the dog the circular muscular fibres surrounding the bronchia are innervated from the vagus. But in the dog the pneumogastric is so intimately connected with the sympathetic, that it is difficult to determine to which of these nerves the action of the muscles of the lung should be ascribed. In man they are separated. In the present case the result of the experiment showed clearly that the action of the pneumogastric determined the contraction of the lung by the contraction of the circular fibres.

Forty-five minutes after decapitation the intestines were perfectly free from motion, and the access of air to the abdominal cavity did not excite it. On excitation of the two vagus nerves, movement of the stomach and intestines was very evident, extending as far as the transverse colon. Longet had supposed that this action of the stomach took place only when it was filled, but in the present case it was entirely empty. On re-excitation, the walls of the stomach folded in plications, and drops of gastric fluid were visible over almost the whole of its surface. The heart beat at the rate of fifty-one pulsations per minute twelve minutes after execution: it ceased entirely at the end of the twentieth minute. These experiments bring nothing unexpected, but they give final confirmation to theories hitherto based only on vivisection of animals, and extended to man by hypothesis. They may also re-assure those physiologists who have feared that conscious life might exist after decapitation by the guillotine.

— The utilization of scrap tin has exercised the minds of many inventors who have seen a fortune in it, if they could only separate the covering metal from the sheet of iron beneath it. It is estimated, says *Engineering*, that the supply of old and scrap tin at London, Birmingham, Swansea, Wolverhampton, Truro, Liverpool, and Glasgow, amounts to 30,000 tons per year, and that this can be obtained at 5s. per ton, or less. Of this weight, five per cent is pure tin, which, in ingot form, is worth £95 to £100 per ton; while the iron, separated from the tin, is worth about 40s. per ton. Hence 20 tons of scrap, which can be bought for £5, would realize, when the two metals are separated, at least £130, a sum which allows a very good margin to cover the cost of the manufacturing operations. A company, called the Electro metal extracting, refining, and plating company, of 76 Finsbury Pavement, E.C., has been formed to carry out a new process by which the tin is stripped from the iron in a perfectly pure form, while the foundation plate is unattacked. The scrap is placed in a series of baths, through which a current from a dynamo is sent; and while there the white metal is dissolved, and is afterwards recovered in metallic state. It is said that the operations are so inexpensive that a profit of £79 is realized from the treatment of every 20 tons of scrap. The process is also set forth as being applicable to mining refuse, tailings, and slags containing gold, silver, copper, tin, etc., as well as to plating metals with zinc.

— All of the original coast survey plain table sheets of the water-front of New York, Brooklyn, and Jersey City, have been published by photo-

lithography on the full scale of the surveys, and are now ready for use. A chart has been prepared, and is now ready for publication, which will fill a long-felt want by supplying in one sheet all of the waters of Washington Territory north of Gray's Harbor. This chart covers the coast from Tacoma to Nanimo.

— Professor Baird and the usual complement of officials composing the summer force of the fish commission left Washington on Tuesday last, July 6, for Wood's Holl, Mass., to be absent till October.

— The second number of the *Political science quarterly*, edited by the faculty of political science of Columbia college, contains the following articles: Andrew Jackson, by Anson D. Morse; The Constitution in civil war, by William A. Dunning, Ph.D.; Ambiguous citizenship, by Hon. William L. Scruggs; The Christian socialist, by Edwin R. A. Seligman, Ph.D.; The legal tender question, by Harry Harmon Neill; Constitutional crisis in Norway, by Prof. John W. Burgess; The conflict in Egypt, I., by John Eliot Bowen, Ph.D.

— The passage of the Suez Canal, which until recently occupied from thirty-six to forty-eight hours, can be made, now that navigation during the night is possible, in sixteen hours for vessels fitted with the electric light apparatus. This important advance is the result of a very interesting report by Commander Hector, of the steamer Carthage, belonging to the Peninsular and oriental company, and addressed to the directors. This report was written after the Carthage made the first continuous passage, under the authorization of the Canal company, given the 1st of December, 1885. The Carthage arrived at Suez after a run from Port Said of eighteen hours. The actual running time was sixteen hours, there having been two delays caused by impediments in the channel: the mean speed made was 5.43 miles per hour. The passage as far as Ismailia was the most interesting, because it was the first attempt to take a large vessel through at night, with the aid of the electric light.

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

The new school of economists and the history of economics.

PERMIT me to make a correction of a misstatement, no doubt inadvertent, in Professor Ely's article in the last issue of *Science*, on the economic discussion. He says that the 'new school' of economists "were the first in America to give a proper position to Adam Smith, Ricardo, and Malthus, by the introduction of