

differ widely in their fertilizing effects on the farm. Among the manurially rich food, decorticated cotton cake has been employed. One important economical fact has been clearly brought out: viz., that even heavy dressings of concentrated soluble nitrogenous manures, whether ammonium sulphate or sodium nitrate, leave in the soil, when applied to cereal crops, no appreciable residue for the use of a succeeding crop. W.

London, July 3.

NOTES AND NEWS.

THE thirty-fifth meeting of the American association for the advancement of science will be held at Buffalo, from Wednesday morning, Aug. 18, until Tuesday evening, Aug. 24, 1886. For the third time, at intervals of ten years each, the association has accepted an invitation to hold a meeting in Buffalo. The local committee intend to make the meeting a great success; and members who were at the meeting of 1876 need only to recall it, in order to form an idea of what the coming meeting promises to be. To those who were not present, it is only necessary to state that the facilities which the city offers are all that can be desired, both in regard to rooms for the several sections and in hotel accommodations, while the health and comfort of the city in the month of August are well known. The headquarters of the association will be at the high school, and all the offices and meeting rooms will be in that building or in one of the schoolhouses near by. The hotel headquarters will be at the Genesee house. Board and lodging for members and their families may be had at the rate of \$1 to \$3 a day, and reduced rates have been obtained from many railroads. A special circular in relation to railroads, hotels, and other matters, has been issued by the local committee. In order to take advantage of these arrangements, members who have not received the local committee's circular should send for a copy at once. Arrangements for excursions and receptions will be announced by the local committee. The officers of Sections D and H have issued special circulars relating to the meeting, which can be had by addressing the respective secretaries. Special information relating to any of the sections will be furnished by their officers. In Section E special attention will be given to the problems connected with the Niagara Falls and its gorge.

— Two Italian physiologists have recently been experimenting upon the effect of various drugs on the sense of taste. They find that the prolonged application of ice removes the sensibility for all tastes, — sweet, sour, salt, and bitter. The effect

of cocaine is to destroy the sensibility for bitter only. All other substances can still be tasted, but the application of a bitter substance yields only a sensation of contact. The removal of the sensibility remains the longer, the longer and more intense the application of the cocaine. Of course, the effect is only transient. They find other substances that reduce the sensibility for bitter taste; but cocaine seems to be the only one which selects all the fibres that conduct the sensation of bitter, and paralyzes them. Other substances, such as caffeine and morphia, diminish the discriminative sensibility between different intensities of bitter. The application of a two-per-cent solution of sulphuric acid has a peculiar effect. It makes distilled water taste sweet, and even makes a quinine solution have a sweet taste, but this only at the tip of the tongue; elsewhere it tastes bitter, as usual. These experiments are particularly important because they are the first that promise a rational application of the law of specific nerve-energy to the sense of taste. They seem to suggest the supposition of separate fibres for the conduction of separate tastes, and thus make close connection with the recently discovered hot and cold points in the skin, which are the terminal portions of nerve-fibres for the separate conduction of sensations of heat and cold.

— Protap Chandra Roy of Calcutta, secretary of the Dātavya Bhārata Kāryālaya, has issued an appeal for aid in rescuing the ancient Indian literature. The Dātavya Bhārata Kāryālaya has, within the course of the last eight years, printed and gratuitously distributed two editions of the Mahābhārata in Bengalee translation, each edition comprising nearly three thousand copies. The fourth edition of the Mahābhārata (the third of the series for gratuitous distribution) has been commenced, and it will take some time before it is completed. One edition of the Harivāṇṇa, comprising three thousand copies, has been exhausted. The Rāmāyana also, that was taken in hand, has been completed, the text of Valmiki being published with a translation. Roughly estimated, the Bhārata Kāryālaya has distributed up to date nearly twelve thousand copies of the Rāmāyana, Mahābhārata, and the Harivāṇṇa taken together, and that number will swell to eighteen thousand, when the fourth edition of the Mahābhārata shall be complete. Leaving aside the arithmetical results of the Kāryālaya's operations, it might fairly be presumed that the genuine demand for eighteen thousand copies of the sacred books of India represents a degree of interest taken by the people in the history of their past that is certainly not discouraging. An English translation of the Mahā-

bhārata in monthly parts has been begun; and twenty-two parts have already been issued. To insure permanency to the Bhārata Kāryālaya, it is necessary to collect funds. Contributions may be sent to W. E. Coleman, San Francisco; to Prof. H. Jacobi of the University of Kiel; to M. A. Barth of 6 Rue du Vieux Colombier, Paris; to Prof. Max Müller, 7, Norham Gardens, Oxford, England.

— Captain Grimes, British steamship Humboldt, Rio de Janeiro, to New Orleans, reports, under date June 10, witnessing a battle between a large sperm-whale, thrasher, and sword-fish. The vessel was in latitude $13^{\circ} 25'$ south, longitude $36^{\circ} 16'$ west, off San Salvador, Brazil. The fish were far off, and would not have been sighted were it not for the great commotion occasioned by the fight. The steamer ran down to the combatants, and lay to till the end of the battle, resulting in the death of the whale and sword-fish.

— Mr. Douglas Home, the well-known medium, died June 21, at Auteuil, at the age of 52.

— Letters from Colonel Lockhart's party give a complete contradiction to the story of his arrest. The mission was well received by the Afghans, who proved very friendly.

— It is proposed to hold in the autumn of 1887 an international congress of shorthand writers of all existing systems, and of persons interested in shorthand generally, to celebrate conjointly two events of importance: 1. The jubilee of the introduction of Mr. Isaac Pitman's system of phonography, marking as it does an era in the development of shorthand on scientific principles; 2. The tercentenary of modern shorthand originated by Dr. Timothy Bright about 1587, continued by Peter Bales (1590), John Willis (1602), Edmond Willis (1618), Shelton (1620), Cartwright (1642), Rich (1646), Mason (1672), Gurney (1740), Byrom (1767), Mavor (1780), Taylor (1786), Lewis (1812), and many others in past generations, and finally by Mr. Pitman and other English and continental authors of the present day.

— The rapid development of the technical sciences and the specialization of the various departments of civil engineering of late years have so enlarged its field as to make it desirable that the student should be allowed some freedom of choice as to the particular line of work to be specially pursued in the application of these general principles. To meet this requirement, the Massachusetts institute of technology has arranged a general course of study, covering the whole field of civil engineering, adapted for those students who have not decided what special branch they

will afterward pursue, while it affords at the same time an opportunity for those students who desire it to devote themselves more extensively to certain special branches.

— Applicants for admission to the dental schools of Great Britain must pass a satisfactory examination in English grammar and history, in Latin, in algebra, geometry, and physics; and, before they can receive their degree of L.D.S., they must study for four years anatomy, chemistry, surgery, and such other branches as are taught in the medical schools, besides those which specially pertain to dentistry, as operative dentistry, the administration of anaesthetics. In London there are two dental hospitals in which all the operations known to that branch are practised, and to which students have admission and opportunity to operate. In the National dental hospital, during the year 1885, 9,001 fillings were inserted, of which 1,014 were of gold, the others being of gutta-percha or other plastic material.

— Consul-General Gibbs of Bolivia has given a very interesting account of the coca-plant, which is now so much employed in medical practice, and which, together with opium, chloral, and other drugs, is beginning to gain its victims from the ranks of those who, having commenced its use for medicinal purposes, have become so enslaved by it that they cannot give it up. This plant is grown in the province of Yungas, and brought some sixty miles to Lapaz, Bolivia, which is the great market for it. The bushes, which are grown on the sides of the mountains, furnish three crops a year of the leaves, from which the drug is obtained. The leaves are dried in the sun, and, after being pressed, are packed in bales. The annual production is 7,500,000 pounds, of which Bolivia consumes fifty-five per cent; the United States and Europe, five per cent; and the rest is consumed in other parts of South America.

— The Entomological club of the American association for the advancement of science will hold its meetings during the week of the association in the library of the Buffalo society of natural science. The first meeting will be held on Tuesday, Aug. 17, at 2 P.M.; and Prof. J. A. Lintner, president of the club, will deliver his address at that time. During the week there will be an excursion to some point of interest; and a reception has been tendered the club by the entomologists of Buffalo. It is very desirable that those entomologists expecting to attend should signify their intention to the secretary of the club, John B. Smith, national museum, Washington, D.C.

—The Botanical club of the American association for the advancement of science will hold its meetings, as usual, during the week of the association. The first meeting will take place on Wednesday at 9 A.M. in the room assigned to the biological section. Any botanist or person specially interested in botany, who is a member of the association, and has registered for the Buffalo meeting, may become a member of the club by filling out a blank to be obtained at the desk of the local committee. The plans for excursions are not yet matured. For further information address Dr. J. C. Arthur, secretary of the club, Geneva, N.Y.

—The Society for the promotion of agricultural science will hold its seventh annual meeting in Buffalo, beginning on Tuesday, Aug. 17. For further information address Dr. Byron D. Halsted, secretary, Ames, Io.

—The present custodian of the Cincinnati society of natural history, Prof. Joseph F. James, has resigned his position to accept the professorship of botany and geology in the Miami university, Oxford, O. The executive board of the society have appointed a committee to receive applications for the position, and to examine the credentials of applicants.

The *Athenaeum* announces that Prof. Karl Pearson will contribute a volume to the 'International series' which will be to physics what Professor Clifford's 'Common sense of the exact sciences' (which Professor Pearson edited) is to mathematics, and will, in fact, form a companion work.

—At the meeting of the Académie des sciences, May 31, MM. Cailletet and Mathias read a paper entitled 'Researches on the densities of liquefied gases and of their saturated vapors.' They have followed the researches of Faraday, Thilorier, Bussy, and D'Andreif upon the density of the liquid gases. The apparatus they have employed was of great simplicity, all of glass, capable of resisting the pressure of many atmospheres. The gases on which they operated were protoxide of azote, ethylene, and carbonic acid. Their results confirm those of M. Sarrau. The authors' experiments demonstrate that at the critical point the density of the liquid gas is equal to that of its vapor. M. Fizeau also stated that his observations taught him that the luminiferous ether is entirely unaffected by the motion of the matter which it permeates, and said that he hoped soon to announce the existence of a peculiar variation in the magnetic force of magnets, apparently in relation with the direction of the earth's motion through space, calculated to throw light on the

immobility of the ether and its relations to ponderable matter.

—There are in the United States about one hundred medical colleges of good repute, at which more than ten thousand students attend annually. From these institutions go out each year from five to one hundred and fifty or more graduates, to swell the ranks of a profession which now numbers in the United States more than seventy-seven thousand members. For the additional instruction of these doctors there are published more than one hundred and fifty medical journals.

—From the *Medical news* we learn that a German physician was recently much puzzled by a case which he was called to attend. The patient, a child five weeks old, was incessantly crying, and was undoubtedly suffering from colic, and its skin was of a bluish color. Further examination revealed the fact that the nurse was in the habit of using a cosmetic in which lead entered largely as a constituent. This gave to her face a brilliant tint, which at once attracted the attention of the physician. The use of this cosmetic was at once interdicted, and in a few days the colic and the crying ceased.

—Instances of extreme old age are reported from Russia. The *Novosti*, a Russian journal, announces the death, in the almshouse of St. Petersburg, of a man, aged one hundred and twenty-two years, who had been an inmate since 1818. His mental faculties were preserved up to the time of his death, and his general health was excellent to the age of one hundred and eighteen, when he commenced to fail. There is in the same institution a soldier's widow whose age, as shown by documentary evidence, is at least one hundred and ten years. In our own country, at New Holland, O., Mrs. Arnold has just celebrated the one hundred and ninth anniversary of her birth; and her two sisters are still living, aged respectively one hundred and six and one hundred and twelve.

—Dr. Barlow, in the *Lancet*, expresses the opinion, after a very thorough investigation into the nature of whooping-cough, that it is to be classed among the diseases which are caused by the irritation excited by the presence of parasites; and that these are micrococci, which proliferate in large numbers upon the living membrane of the larynx and pharynx. He also claims for resorcine the power to greatly reduce the intensity of the disease, and to directly lead to its cure. This remedy, which is among the most recent introduced to the medical profession, is applied as a one or two per cent solution, either by a brush

or in the form of spray, directly to the mucous membrane of the throat and the larynx.

—Some of the friends of M. Chevreul propose to present him a medal on his hundredth birthday, which comes the 31st of August. This medal will bear in relief a portrait of Chevreul engraved by M. Roty. Subscriptions should be addressed to M. Louis Passy, secrétaire perpétuel de la Société nationale d'agriculture de France, 18, rue de Bellechasse, Paris, France.

—The *Athenæum* states that Mr. Blanford, the meteorological reporter to the government of India, has drawn up a memorandum to accompany the charts of temperature and rainfall. The temperature being reduced to its equivalent at sea-level, the hottest tract in India is a portion of the Deccan plateau between Bellary and Sholapore. The hottest region of the peninsula is really the eastern coast from Vizagapatam southwards and the plains of the Carnatic and northern Ceylon. In intra-tropical India, except as modified by the elevation of the country, the temperature increases from the coast inland, the west coast being cooler than the east coast. Sind and Rajputana are the driest portion of India. In the greater part of India, May is the hottest month in the year, except in the Punjab and Sind, where, owing to the lateness of the rains, June is hottest. Of those stations, the temperature of which has been pretty accurately determined, the hottest in May is Jhansi: the coolest region is Assam, where the May rains are very copious. The mean annual rainfall of the whole of India is about forty-two inches, varying from nearly five hundred inches at Cherra Poonjee, to about three inches at Jacobabad. The provinces most subject to famine are the north-western provinces, Behar, Rajputana, the Carnatic, the North Deccan, Hyderabad, Mysore, Orissa, and the northern Circars.

—M. E. Grimaux exhibited to the French academy of sciences, at the *séance* of June 15, some unpublished printed documents showing the action taken by the commission on behalf of Lavoisier, at that time (1792–93) under arrest as a farmer-general. From one of these documents it appears, that, in consequence of the said action, the illustrious names of Laplace, Delambre, Borda, and others, were themselves removed from the commission on the 3d Nivôse of the second year of the republic (Dec. 26, 1793).

—A few years ago Dr. J. B. de Lacerda of Rio de Janeiro made extensive experiments upon antidotes for snake-bites, and finally settled upon the hypodermic injection of a solution of permanganate of potash as being the most efficacious. This remedy has also been used lately in Brazil

against hydrophobia. One planter reports having used it over a year ago in two cases of persons bitten by rabid dogs. So far, these persons have shown no symptoms of hydrophobia. A colleague of Dr. Lacerda, however, treated by this method two patients who had been bitten by a rabid cat. One of them received the hypodermic injection fifteen minutes after having been bitten. As yet he shows no ill effects from the wound. The second, a child, was treated twelve hours after having been bitten, and died seven weeks later with all the symptoms of hydrophobia.

—The Brazilian government has directed Prof. Emil Goldi to investigate the disease of the coffee-plants. This disease was investigated by Capanea about four years ago, but no satisfactory conclusion was reached as to its character or the remedy for it. In the mean while it has been spreading.

—The sundry civil bill, as considered in the senate, restores the pay of the coast survey officials (changed by the house) to the figures now existing; it also appropriates \$10,000 for salaries and expenses of the National board of health.

LETTERS TO THE EDITOR.

A most extraordinary structure.

ASIDE from the publicity which your theosophical correspondent has given the error which unfortunately crept into one of the plates in a recent contribution of mine to the Proceedings of the Zoological society of London (*Science*, vii. No. 177), the subject, I understand, has created no little comment in other quarters. Indeed, so thoroughly has it been discussed that I should have entirely disregarded this additional notice of it, had it not been that the attention thus called to it by this theosophist of the Smithsonian institution, placed it before your readers as 'a most extraordinary structure.' Surely it must be a structure most extraordinary to have excited any wonder in the eyes of a Smithsonian theosophist, when, in view of the fact that the published researches of Prof. Elliott Coues, another theosophist of the Smithsonian, called for no comment whatever. The succinct account of the researches I refer to, were published by Professor Coues in the *New York Nation* (Dec. 25, 1884), wherein this author in referring to his examination of ghosts, says "I myself, personally, have repeatedly by physical, chemical, and microscopical examination studied detached portions of them [ghosts], as hair, nails, or pieces of any substance which may envelop them more or less completely."

The fact of the matter is this, in both the figure and text I described the right humerus of a humming bird for the left. Mr. F. A. Lucas the osteologist of the Smithsonian discovered the error and courteously pointed it out for me. But Mr. Lucas did not write the letter in *Science* signed 'a theosophist,' and notwithstanding the fact that I am personally acquainted with the members of the staff of that institution, I know of no theosophist there who has