

whose index averages about 90. On the whole the broad-skulled type predominates, being, as compared to the long-skulled type, in the proportion of 8 to 3. The complete publication of these important results has not yet been made.

BIBLIOGRAPHY OF PERU.

THE 23d publication of the Field Columbian Museum is a 'Bibliography of the Anthropology of Peru,' by Dr. George A. Dorsey. It is a neat octavo of 206 pages and must contain nearly 3,000 titles. This is proof enough of its value to students, and we venture to hope that it will not be the last work of the kind by its author, though in his preface he says it will be.

How impossible it is, however, to reach completion in such a task! Confining myself to the works in my own library, I find that Dr. Dorsey does not mention the papers on Peruvian mummies by Schuch and Cornalia, nor that on Peruvian gems by Blondel, nor any by the distinguished collector, Dr. Contzen, nor the valuable archæological catalogue of Macedo, nor the essays on Peruvian mythology by Lafone, and, more painful to relate, he says nothing of my articles on the Puquina language, omitting also those of Grasserie on the same tongue. This merely shows that the greatest care sometimes fails.

THE LAMP OF THE ESKIMOS.

It has been noted that no form of lamp (with one doubtful exception) was known in ancient America south of the Eskimos. These possessed one from time immemorial. They could not, indeed, live without it. A study of it is presented in the *American Anthropologist* for April by Mr. Walter Hough. He considers it an independent invention. The rudest are merely stones collected on the beach with natural concavities in which the fats or oil can be poured and the wick laid at the side. Other stones were hollowed out to imitate

these. At St. Lawrence Island lamps of pottery are frequent. The size and form of the lamps curiously enough bear so distinct a relation to the isothermal lines that it is possible by comparison to assign the geographic position to any specimen.

D. G. BRINTON.

UNIVERSITY OF PENNSYLVANIA.

SCIENTIFIC NOTES AND NEWS.

SUMMER SCHOOL OF THE ILLINOIS BOTANICAL STATION.

A SUMMER school of biology will be held at the Illinois Biological Station, Havana, Illinois, under the auspices of the University of Illinois, adapted to the purposes of university students; the instruction will also be carefully adjusted to the needs of teachers of biology wishing an opportunity for personal studies, in field and laboratory, of the plants and animals of a peculiarly rich and interesting situation and of the methods of modern biological station work. Four regular courses will be offered to organized classes, two in zoology and two in botany; and in addition to these opportunity will be given to students of experience to take independent work on special subjects, and to visiting investigators to pursue their personal researches at the station with the use of its equipment. The regular courses will be open to all who satisfy the management of their ability to do the work. The session will begin June 15th and continue four weeks, but members of classes may continue their work independently until August 1st. Visiting investigators may come at any time and remain until September 15th, and teachers may enter at any date preceding July 1st.

Visiting investigators will be given tables on the floating laboratory of the biological station. They will find in the locality a very rich fauna and flora in a greatly varied environment. Exceptional opportunities are offered for work on the lower algæ and the fleshy fungi. Over ninety species of Mycetozoa occur at Havana during the summer months. The abundance of Protozoa, Rotifera, Entomostraca, aquatic insects, planarians, oligochaete and parasitic worms, Mollusca—especially Unionidæ and

Bryozoa—and the ease with which material can be obtained, greatly facilitate morphological, experimental or systematic studies upon these forms. Havana is also an important fishing point, and the common fish and turtles of the Mississippi Valley can be obtained in abundance. The library facilities of the University and of the State Laboratory of Natural History will be open to investigators. This makes available the leading morphological journals and an exceptionally complete collection of the literature of fresh-water fauna and flora. Necessary laboratory equipment of glassware and reagents will be provided, though visitors are requested to furnish their own microscopes, expensive reagents, and alcohol for collecting purposes. Lists of literature and other desiderata should be in our hands by June 10th. The equipment of the Biological Station—steam-launch, row-boats and collecting apparatus—will be available for field work.

For the general objects, methods and organization of the school the Director of the Biological Station, Professor S. A. Forbes, is primarily responsible. The session will be under the immediate management of Dr. C. A. Kofoid, Superintendent of the Station and assistant professor of zoology at the University, who will also supervise and provide for the work of advanced students and investigators. The regular zoological courses, major and minor, will be taught by Professor Frank Smith, assistant professor of zoology at the University, and the botanical courses by Mr. Charles F. Hottes, University instructor in botany. The services of other members of the Station staff and of the University biological departments will be drawn upon for instruction in the special lines with which they are most familiar.

A fee of \$10 a month will be charged each student and each occupant of a biological station table. Membership in the regular classes will be limited to fifty students and the number of visiting investigators to twelve. Those purposing to attend will secure their places and confer a favor upon the management by making early application, accompanied by a statement of their preparation for the work. Other things being equal, college and university students and teachers of biology in the public

schools will be given the preference. Further particulars may be obtained from Professor S. A. Forbes, Urbana, Ill.

THE THIRD INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

DR. H. W. WILEY, Chairman of the American Committee of Organization for the Third International Congress of Applied Chemistry, to be held at Vienna beginning on July 28th, writes that the Organization Committee requests the American chemists wishing to send contributions to that Congress, either papers or reports of any description, to transmit the full title, together with an abstract of the papers, as soon as possible, to Professor Dr. F. Strohmer, IV/2 Schönburgstrasse Nr. 6, Wien, Austria. It is desired to publish the full program of the papers to be presented in the near future, and American chemists are earnestly requested to send forward their contributions without delay.

A local committee has been formed at Vienna for the purpose of securing agreeable and cheap dwelling places for foreign members during the continuance of the Congress. Those wishing to engage such places should address: Wohnungscomite des III internationalen Congresses für angewandte Chemie, Wien IV/2 Schönburgstrasse 6.

American chemists are also informed that, on account of the Jubilee Exposition to be held in Vienna from the 7th of May to the 8th of October, this year, the Austrain railroads are prepared to furnish round-trip tickets to all points in Austria-Hungary at greatly reduced prices. A further communication from the Railroad Committee will be made to American chemists in a short time concerning this matter. The North German Lloyd Steamship Company has also made reductions in fares to members of the Congress, regarding which further information may be obtained from Dr. Wiley.

GENERAL.

ARRANGEMENTS have now been made for the day to be spent at Harvard University during the Boston meeting of the American Association for the Advancement of Science. The various buildings and departments of the University will be opened for inspection. A

luncheon will be served in Memorial Hall, and later in the afternoon the corporation will give a garden party and tea in the Hemenway Gymnasium. At eight o'clock in the evening President Eliot will address the Association in Saunder's Theatre.

A CIRCULAR has been issued by Professor Foster, President of the Fourth International Congress of Physiologists, which meets at Cambridge from August 21st to 26th, giving information regarding accommodations. Many of the colleges have offered rooms for the use of members which will be furnished free of charge, beyond a small sum for attendance. Ladies cannot, however, reside in the colleges, but lodgings in the town are provided at a cost of less than \$1.00, including light and attendance, and meals can be taken in the college halls. Those wishing to secure lodgings or hotel accommodation should address Dr. Shore, the Local Secretary, at the Physiological Laboratory, Cambridge.

THERE will be held, as we have already noted, a biological exhibition in connection with the visit of the British Association to the city of Bristol. It is proposed to hold this exhibition in the gardens of the Bristol and West of England Zoological Society, and to offer as complete an exhibition as possible of recent investigations into the life history of animals and plants. A working committee has been formed and Sir John Lubbock has consented to open the exhibition.

AT a meeting of the Washington Academy of Sciences, held on May 27th, nineteen new members were elected. Most of these were nominated by a committee acting on behalf of the Medical Society of the District of Columbia, recently added to the group of affiliated scientific societies represented in the Academy.

A TRIO of eminent German travelers and anthropologists are now in this country for the purpose of study. Dr. Karl von den Steinen, widely known through his travels in South America, and his two important works and minor publications relating thereto, has recently reached the eastern United States after a trip through the Southwest. Dr. Paul Ehrenreich, of Berlin, is now in New York en route to the

Pueblo country. Dr. Albrecht Wirth, of Frankfort, known through researches in Eastern Africa, and more recently through a work on Formosa, has just returned from the Far East, through Corea and Siberia. He is now in Washington.

DR. F. W. TRUE and Professor W. H. Holmes, of the United States National Museum, have recently gone to Omaha to supervise the final installation of the Smithsonian exhibit and to attend the formal opening of the Exposition. The Smithsonian exhibit at Omaha is rather more limited than were the displays at Nashville and Atlanta, owing to limitations in space and funds; but the arrangement is considered highly effective and satisfactory.

THE Geological Department of the Johns Hopkins University has just closed an encampment of several weeks near Cumberland, Maryland, in the heart of the Appalachian Mountains. Work was suspended in Baltimore during the period of the camp, special courses being given at Cumberland, both by the regular corps of instructors and by lecturers secured from the scientific bureaus in Washington. Complete instrumental outfits employed in geological, topographical, climatological, hydrographical and agricultural investigations were installed at the camp, special lectures being given upon their uses. In addition to practical work along geological and topographical lines, meteorological observations were taken twice daily by the students under the direction of an observer detailed by the United States Weather Bureau, the streams were gauged and the velocity and volume of their outflow determined, and the conditions of the soils in their temperature and moisture contents were examined daily under competent supervision. Among those who were present at the camp and who aided Professor Clark and his associates in the work of instruction were Messrs. Bailey Willis, H. M. Wilson, O. L. Fassig, E. G. Paul and C. W. Dorsey, of the Washington bureaus. It is planned to continue practical field work in this manner in subsequent years.

THE fourth annual address before the Botan-

ical Seminar of the University of Nebraska was given by Dr. Charles R. Barnes, of the University of Wisconsin, on Saturday evening, May 21, 1898. The Conjugatæ and higher Bryophyta were cited as illustrations of 'Evolutionary Failures,' the subject of the address. The Seminar will publish the address in the near future.

THE department of botany of the University of Nebraska has prepared two 'Laboratory Units' for high school botanical laboratories, for exhibition in the Trans-Mississippi Exposition. Each includes those pieces of apparatus which are absolutely necessary for the student in the high school who is preparing to enter the University. The first of the 'units' is supplied by an American maker for \$23.00, and the second is imported duty free by another dealer for \$20.00. School officers can thus readily determine what to purchase and what the expense will be.

DR. HERMANN SCHAPIRA, professor of mathematics at the University of Heidelberg, died at Cologne on May 9th, at the age of fifty-seven years. The death is also reported of Mr. Maurice Hovelacque, Secretary of the Geological Society of Paris.

MR. ARTHUR E. KENNELLY has been elected President, and Mr. Ralph W. Pope has been re-elected Secretary, of the American Institute of Electrical Engineers.

PROFESSOR KALKOWSKY has been appointed Director of the Mineralogical, Geological and Ethnological Museum in Dresden.

PROFESSOR MAX VON PETTENKOFER, of the medical faculty of the University of Munich, has been elected a corresponding member of the Berlin Academy of Sciences.

PROFESSOR W. ROUX, who holds the chair of anatomy at Halle, has been elected a corresponding member of the Turin Academy of Sciences.

DR. EDWARD STRASBURGER, professor of botany at Bonn, has been elected a foreign member of the Danish Academy of Sciences.

AN address and some valuable plate were presented to Sir William Stokes on May 7th, on the occasion of the completion of the twenty-

fifth year of his professorship at the College of Surgeons, Dublin. In the evening Sir William Stokes was entertained at dinner.

THE Philosophical Faculty of the University of Göttingen has awarded the Otto Vahlbruch prize for the greatest advance in science during the past two years to Professor Röntgen, of Würzburg. This prize was founded in 1896 and is of the value of 9,200 Marks.

DIE Senckenbergische Naturforschende Gesellschaft, of Frankfort, has awarded its Stroebe prize to Dr. Camerer, of Urach, for a book on the Metabolism of the Child.

THE Berlin Society for the Advancement of Industry offers several prizes for work to be submitted prior to November, 1898. One of these is a silver medal and six thousand Marks, for electrolysis applied to mining, and one a first prize of 4,000 Marks and a second prize of 3,000 Marks for a method of measuring the amount of steam passing through a pipe. The Society further offers in 1899 the Tornow prizes (5,000, 3,000 and 2,000 Marks) for a history of the metals, which must not exceed 200 pages in length.

WILLIAM WESLEY & SON, London, have issued a catalogue offering for sale a large number of works on astronomy from the libraries of Rev. A. Freeman, M.A., F.R.A.S.; A. Marth, F.R.A.S., and J. R. Hind, F.R.A.S., late Superintendent of the Nautical Almanac Office, London.

WE are glad to note that at the annual meeting of the London Anti-vivisection Society the Chairman said that many felt disheartened at the slow progress of the movement; that the society had to struggle against want of sympathy; that they deplored the apathy of the public in the matter, and a resolution was passed expressing unqualified dissatisfaction with the existing act regulating vivisection, and with its administration by the Home Office.

THE *Iowa Health Bulletin* publishes letters given by 'doctors of medicine' in support of applications for pensions, of which the following are examples:

—, June 8, 1896.

Dear Sir,

Yours received I tredit Wm. Akens after he cum Hoam from the serfis for polypup in his nosee and

Running soar in his pastur. The polypup from the nite are and exposure the wonde cum from the cick of a hoars. —, M.D.

—, February 30, 1897.

Sur,

I surtify I treted the sed sojer fum 18888 to Date — foarmly his stumik tub was jined to his nervious sistem but now it air rotted off cosing grate expectoring and hard of breth. Your Obt. servent —, M.D.

AN examination will be held to fill a vacancy in the grade of Chemist at the New York custom house on June 9th. The salary of this office is \$2,400.

THE New York Library Association held its annual meeting at Utica, N. Y., on May 25th and 26th.

THE 36th University Convocation will be held at Albany on June 27th, 28th and 29th. Among the subjects proposed for discussion are: Extension of elective system in high schools and academies. Should the four-year high school course be enforced as the minimum prerequisite for all degree courses? Should a minimum for conferring degrees be fixed by law? How low may admission requirements be made without forfeiting the right to the name college? What recognition should colleges and universities give to diplomas of State normal schools? What, if any, college studies should be regarded as constants to be pursued in every course? In courses leading to liberal arts degrees what credit should be given for studies in engineering, music and fine arts? Should high schools regularly offer instruction in domestic science and in business, or should this training for particular callings be relegated entirely to special schools? Educational functions of wall pictures, photographs and lantern slides as coordinate with books in giving either information or inspiration. The influence on boys and girls of reading daily newspapers. In connection with the reception in the State Library on June 27th a new Indian Museum will be opened for inspection.

IN noting the appointment of Professor Keeler to the Lick Observatory *The Revue Scientifique* pays the following compliment to the atmosphere of Pittsburg:

L'Observatoire d'Allegheny ayant un ciel plus

transparent que celui du Mont Hamilton, M. Keeler avait offert de rester à la tête du premier de ces établissements si de généreux amis de la science souscrivaient un million de francs pour agrandir et doter l'Observatoire.

THE third meeting of the Pan-American Medical Congress is to be held in Caracas, Venezuela, in Christmas week, 1899.

IN an interesting article in the *May Forum*, Professor Willis L. Moore states that the Weather Bureau intends to establish tentatively fifteen or twenty stations between the Alleghanies and the Rocky Mountains during the present spring, and to make special effort to secure observations at the same hour at a high level from all the stations, so that the meteorological conditions at that altitude may be compared with those prevailing at the surface of the earth. If we are successful in attaining the desired altitude at enough of our stations each day to give the data from which a synoptic chart can be constructed we shall then be able to map out not only the vertical gradients of temperature, humidity, pressure and wind velocity, but also the horizontal distribution of these forces at two levels—one at the earth's surface and the other at the height of one mile. It may be that after this work is done only negative knowledge will be acquired, but even then the work will not have been in vain. It will be an instructive study to note the development and progression of storms and cold waves at this high level. At that altitude the diurnal variations cease; there is but little change between the heat of midday and that of midnight, so that storm conditions may be measured without the confusing effects due to immediate terrestrial radiation.

THE Botanical Club of Barnard College has handed to the Treasurer \$500 to form the nucleus of a fund for the equipment of a botanical laboratory to be known as the Emily L. Gregory Botanical Laboratory.

MR. JOHN NICHOLS has added the sum of \$45,000 to the \$200,000 which he gave about two years ago for a library building for the city of Providence.

THE State Institute for Serum Research is being removed from Berlin to Frankfort, that

city having undertaken to erect a building for the Institute at a cost of 125,000 Marks.

THE annual horticultural exhibition was held in Paris from the 18th to the 25th of May and a Congress of Horticulture met in conjunction with the Exposition on May 20th and 21st. The Royal Botanic Society, London, held an exhibition of plants and flowers in their gardens at Regent's Park on May 11th.

WE learn from *Natural Science* that Mr. Edouard Foa has travelled across Africa by the basin of the Zambesi, Lake Tanganyika and the Congo, and has brought back numerous specimens of anthropological interest from the region of the great lakes. Dr. Hugo Bücking and Dr. L. van Werneke have started for an eight months' expedition to the Netherland East Indies on behalf of a Dutch Society.

WE receive monthly the *Sei-i-kwai Medical Journal*, edited and published by the Society for the Advancement of Medical Science in Japan, the articles of which, partly in English and partly in Japanese, are doubtless instructive to the Japanese, while those in English are certainly amusing to the English reader. The general style may be gathered from the following:

"Diseases of the animal sphere (or the nerves, senses and muscles). Regarding Japanese pathological constitution the writings of medical and ethnographic authors are not lacking in general remarks which are meant to express in the usual sense. * * * * It would also be an essential task of the surgeon to separate such easings of the treatment of wounds as really are due to constitutional causes, from the consequences of the possibility that perhaps the causes of infection working against the healing art is some way different extra European countries. * * * * The spleen is all malarial, typhus, variola diseases and in those called *και εζοκνυ* splenetid diseases, the seat of strong swelling and all corresponding symptoms. Let us observe here that unusually great swellings of the spleen are seldom found, either in post-mortem or clinical examination."

UNIVERSITY AND EDUCATIONAL NEWS.

It is said that Mrs. Phoebe Hearst will erect a building for mining engineering for the University of California at a cost of \$300,000.

MR. HENRY WILDE, F.R.S., has proposed to

endow in Oxford University a readership and a scholarship in mental philosophy. They are to be designated the Wilde readership and the John Locke scholarship.

HOBART COLLEGE, Geneva, N. Y., received \$6,000 for a scholarship by the will of Mrs. Augusta M. Williams, of Newport, R. I.

THE appointments for the coming year in the botanical department, Cornell University, are as follows: Dr. E. J. Durand is reappointed instructor in botany and assistant curator of the Cryptogamic Herbarium, and Mr. K. M. Wiegand, assistant in botany and assistant curator of the Phaneogamic Herbarium. Mr. B. M. Duggar, now assistant cryptogamic botanist to the Experiment Station, has been appointed instructor in botany, with special reference to experimental plant physiology, his time to be divided between instruction and work in the Experiment Station. Two graduate assistantships in botany have been established, the holders to divide their time between assistance and investigation. Mr. W. A. Murrill, B.S., A.M., the present scholar, and Mr. G. T. Hastings have been appointed to these positions for the coming year. Besides these, a fellow, or scholar, is appointed in the department.

THE second summer session of the New York State Library School, Albany, of which Mr. Melvil Dewey is Director, began this year on May 30th, and will continue in session for five weeks.

AMONG the docents who have recently qualified are Dr. Fischer in anatomy and Dr. Mayer, of Vienna, in chemistry at the German University at Prague; Dr. Formanek in applied medical chemistry in the Bohemian University at Prague, and Dr. Haussner in mathematics in the University at Giessen.

DISCUSSION AND CORRESPONDENCE.

COLOR-VISION.

It is not often that a letter appears in SCIENCE that presents the particular combination of characteristics of one of the recent communications on Color Vision. Professor Titchener says expressly that until the recent papers of Müller in the *Zeitschrift für Psychologie* on Her-