The journal 'Languages' (published in London) stated in June last that the British consul in Bolivia had discovered some hitherto unknown native idioms in that country; but no further information about them has appeared.

THE DIMINUTION OF NATALITY.

This subject occupied a prominent place in the discussion of the anthropological section of the French Association for the Advancement of Science at its last meeting. More than elsewhere, it deserves attention from the scientists of that nation, for out of the 86 departments into which France is divided, in 51 the deaths exceed the births. The annual natality for the whole country is only 23.7 for each 1,000 inhabitants, and this number includes the still-born!

To remedy this progressive depopulation, its causes must be ascertained. Dr. E. Maurel brought forward an interesting theory. He pointed out that the birth rate is lowest in those departments where food is most abundant and cheapest. The relation between these two facts he held to be the prevalence of hereditary arthritic diathesis (uric acid diathesis), leading to diminution of reproductive vigor in both sexes, this diathesis arising from excessive alimentation. Another speaker, Dr. Pommerol, attributed the diminished natality to voluntary restriction, while others suggested the increase of religious celibacy, the laws relating to the division of property, the lateness of marriages, and the decreased reproductiveness of women.

D. G. Brinton.
University of Pennsylvania.

SCIENTIFIC NOTES AND NEWS.

VIVISECTION IN THE DISTRICT OF COLUMBIA.

During the recent session of the National Academy of Sciences a report was prepared with reference to the proposed legislation interfering with the practice of vivisection in the District of Columbia. The report states that physiology must be studied by experimental methods. The physiologist, no less than the physicist and the chemist, can expect the advancement of his science only as the result of carefully planned laboratory work. If this work is interfered with medical science will continue to advance by means of experiment, for no legislation can affect the position of physiology as an experimental science. But there will be this important difference: The experimenters will be medical practitioners and the victims human beings. That animals must suffer and die for the benefit of mankind is a law of nature, from which we cannot escape if we would. But the suffering incidental to biological investigations is trifling in amount and far less than that which is associated with most other uses which man makes of the lower animals for purposes of business or pleasure. The men engaged in the study of physiology are actuated by motives no less humane than those which guide the persons who desire to restrict their action, while of the value of any given experiment and the amount of suffering which it involves they are, owing to their special training, much better able to judge. When the men to whom the government has intrusted the care of its higher institutions of research shall show themselves incapable of administering them in the interest of science and humanity, then, and not till then, will it be necessary to invoke the authority of the national legislature.

RADIATION FROM URANIUM SALTS.

In an important artiticle in *Nature* (Apr. 23), Prof. J. J. Thomson states that the investigations of M. Henri Becquerel on the radiation emitted by certain salts of uranium have shown the existence of a kind of radiation intermediate in its properties between light and the Röntgen rays. These investigations are exceedingly interesting on account of the differences as well as the analogies they disclose between the uranium radiation and the Röntgen rays. M. Becquerel has shown that the radiation from the double sulphate of uranyle and potassium is analogous to Röntgen rays, inasmuch as it can affect a photographic plate after penetrating substances such as aluminium, copper, wood, etc., which are opaque to ordinary light; it also resembles

these rays in being able to discharge an electrified body, whether the charge be positive or negative. On the other hand, it differs from Röntgen rays and resembles ordinary light, inasmuch as it can be refracted and polarized. It is also much more easily reflected than Röntgen rays. The radiation from the uranium salts is thus intermediate in properties between ordinary light and Röntgen rays; and as there can be no question but that this radiation consists of transverse vibrations, inasmuch as it can be polarized, it affords strong presumptive evidence that the Röntgen rays are also due to transverse vibrations.

The persistence of the radiation from the potassium uranyle sulphate is very remarkable. M. Becquerel found that crystals which had been kept in the dark for 160 hours continued to radiate vigorously. This radiation is absorbed almost equally by aluminium and copper, so that it does not show the same dependence upon the atomic weight of the absorbing medium as that of the Röntgen rays; on the other hand, the radiation resembles Röntgen rays in not being homogeneous.

GENERAL.

THE Council of the American Association for the Advancement of Science at the Springfield meeting instructed the sectional committees hereafter to prepare a programme for their sectional meetings and transmit the same to the Permanent Secretary at least one month before the annual meeting. The Buffalo meeting opens on Monday, August 24th, and titles and abstracts of papers should be sent by members to the Secretaries of the sections at as early a date as is convenient.

THE German Society of Naturalists and Physicians will meet at Frankfort-on-Main from the twenty-first to the twenty-sixth of September.

WITH the last issue of the Proceedings of the Royal Society an index slip is issued giving the details needed for an author and subject catalogue of the contents. In the case of one paper there are as many as eleven entries for the subject catalogue. The index slip is printed on one side of thin paper so that the entries can be conveniently attached to cards.

The Physical Review for May–June will contain articles on 'Solids and Vapors,' by Wilder D. Bancroft; 'On the Heat Effect of Mixing Liquids,' by C. E. Linebarger; 'The Influence of Heat, of the Electric Current, and of Magnetism upon Young's Modulus,' by Mary Chilton Noyes,' and 'A Photographic Study of Arc Spectra,' by Caroline W. Baldwin.

THE prize founded by M. and Mme. Victor Saint Paul for the discovery of a remedy for diphtheria will be divided by the French Academy of Medicine and has been divided between Dr. Roux and Prof. Behring.

IT is unofficially announced that the local committee in charge of the International Medical Congress to be held at Moscow this year has reversed its decision to exclude English from the languages to be used.

LONGMANS, GREEN & CO. have issued a reprint of Tyndall's *Glaciers of the Alps.*

THE Metric System is being actively discussed by correspondents in the London *Times.* Those opposing the Metric System seem to be in the majority, but the arguments used seem to be mostly trivial or absurd.

GOV. MORTON has nominated Charles A. Weiting, of Cobleskill, N. Y., to succeed Frederick C. Schraub as New York State Commissioner of Agriculture.

PROF. H. LANDES, of the State University of Washington, has been appointed State Geologist.

THE semi-annual meeting of the American Antiquarian Society was held in Boston on April 29th. Among the papers presented was one by Rev. Stephen D. Peet on the history of archæological explorations in the Mississippi Valley. Prof. J. W. White, of Harvard University, was elected President.

IT is reported in the *British Medical Journal* that those working with the X-rays are likely to suffer from a variety of skin affections said to be similar to the results of sunburn.

THE London *Times* states that a recent sale of birds' eggs included a specimen of the egg of the great auk (*alca impennis*). This specimen, except for a small fracture on one side, is in good preservation. It was purchased in 1841 from Mr. Hugh Reid, of Doncaster, who bought

it in the same year from Frederich Schutz, of Dresden, and has now been sold by order of the executors of the late Mr. James Hack Tuke, of Hitchin, and was sold for 160 guineas. It may be interesting to point out that six or seven years ago there were only 68 specimens of the egg recorded. The highest price of £300 was paid for a duplicate for the collection of Baron d'Hamonville, of Meurthe, France, two years ago. Shortly after this event two very good specimens were detected among a collection of eggs purchased at a sale in the country for 30s., and were subsequently sold by Mr. Stevens last year for 275 guineas and 185 guineas respectively. A third specimen, Sir. W. Milner's, came into the auction room during last season and fetched 180 guineas. A few years ago a number of exceedingly clever forgeries of the egg were manufactured. Two other interesting eggs were sold immediately after the above mentioned great auk's egg—a very fine specimen, slightly cracked, but otherwise in first-rate condition, of an egg of *æpyornis maximus* realized 40 guineas; and the only example of an egg of *æpyornis grandidieri* ever offered for sale in this country sold for 35 guineas.

The New York State Fish, Game and Forest Commission recommends that an amendment be made to the State Constitution giving the commission power to lease at a nominal price small tracts of the Adirondack preserve to citizens of the State for the erection of cottages or camps. The Commission states that New York owns about 1,000,000 acres of land in the counties constituting the forest preserve (the greatest park in the world), all of which is practically within the Adirondack park. These campers or cottagers would make the very best guardians of the forest, as they would at all times be oresters, game protectors and fire wardens.

The death is announced of Prof. Anatoly Petrovich Bogdanoff in Moscow. *Nature* states that he was born in southern Russia in 1834, and after studying at the Moscow University, and writing, in 1858, his first dissertation on the colors of birds, he became professor of the same University in the year 1863. In connection with this work he wrote an excellent text book of zoölogy, and a still better work, unique in its kind, namely, a *Chrestomathy of Zoölogy*, in three volumes, in which the reader obtains a thorough scientific acquaintance with the different classes of the animal kingdom by means of admirably chosen abstracts from the best authors, considerable attention being given to purely biological questions, and especially to the lowest animals, as well as to their manners of life. In the sixties, Bogdanoff founded, at Moscow, the well-known 'Society of Lovers of Natural Sciences, Anthropology and Ethnography,' whose numerous quarto volumes of *Memoirs* rank among the best scientific publications in Russia, and whose expeditions included the well-known Turkestan expedition of the late Fedchenko and Madame Olga Fedchenko. The chief anthropological work of A. P. Bogdanoff was on the inhabitants of the grave-mounds of the Moscow region. The full list of his nearly forty anthropological, and nearly thirty zoölogical works is given in 'Materials for the History of Zoölogy, pure and applied, in Russia, chiefly for the last Thirty Years,' of which he was the editor, and of which three volumes have already been published. His works for popularizing biology, especially on Darwin's ideas, and for extending the interest in anthropology, are also numerous.

Macmillan & Co. have made arrangements for the issue in New York and London of a *Dictionary of Philosophy and Psychology* under the editorial supervision of Prof. Baldwin, of Princeton University. The work will contain concise definitions, such historical matter as may be necessary to justify the definition given and to show that the usage suggested is the outcome of the progress of philosophy, and full bibliographies. The following contributors are already announced: *General Philosophy and Metaphysics*, Prof. Andrew Seth, Edinburgh; Prof. John Dewey, Chicago. *History of Philosophy*, Prof. Josiah Royce, Harvard. *Logic*, Prof. R. Adamson, Glasgow. *Ethics*, Prof. W. R. Sorley, Aberdeen. *Psychology*, Prof. J. McK. Cattell, Columbia; G. F. Stout, W. E. Johnson, Cambridge; Prof. E. B. Titchener, Cornell; The Editor, Princeton. *Mental Pathology and Anthropology*, Prof. Joseph Jastrow, Wisconsin. *Biology*, Prof. C. Lloyd Morgan, Bristol. *Bibliography*, Dr. Benjamin Rand, Harvard.

WE learn from the London *Times* that the resolution of the Government of India on the annual report of the Geological Survey for the past official year mentions that, although survey work was continued in Rewah, the Central Provinces, and Beluchistan, the amount of work of this kind done was much less than usual, owing to officers being withdrawn for inquiries on economic subjects. The Rewah survey has led to some modification of the views hitherto held in regard to the Vindhyan system, the chief point established being the separation of the lower from the upper Vindhyans. On the northwestern frontier the survey extended to the range between the Luni plain and the Zhob country to the Tochi valley and to the country lying between Dera Ghazi Khan and Zarat. The publications of the Survey during the year include a fresh volume of the 'Palæontologica Indica,' dealing with the fossils from the ceratite beds on the lower trias of the Salt Range, and part of a volume on Himalayan fossils descriptive of the Cephalopoda of the Muschelkalk. This is said to be the first and a very important instalment of the special monographs now being prepared in Europe, for which a special grant has been made by the Government of India. Certain miocene fossils of upper Burma were also treated in a publication of the Survey. As to the economic side of the work of the department, the oil-boring operations at Sukkur were continued without success; in Burma Dr. Noeting brought to a close his inquiries into the occurrence and nature of earth oil; and in various other districts mineralogical surveys have been made, and existing gold and coal mines in Mysore, the Central Provinces and Hyderabad have been visited, while proposals for the regulation of the working of mines in India have been drawn up.

JAMES MERCUR, assistant professor of natural and experimental philosophy at West Point Military Academy, died on April 22d, at West Point. He had been assistant engineer on the survey of the northern lakes and assistant engineer in the removal of Hallet's Point and Flood Rock, Hell Gate, and had charge of various other engineering works.

WE have received from *The Engineering and Mining Journal* advance sheets of Volume IV. of *The Mineral Industry*, giving statistics for the year 1895, from which it appears that the United States last year took the first rank as a producer, not only of the precious metals, but also of the most important of the useful metals, iron and copper, while in coal it is second only to Great Britain. The production of iron in 1895, as compared with that of 1894, showed the remarkable increase of 42 per cent. Steel showed an increase of over 10 per cent. and copper nearly an equal increase. Coal shows an increase of ten per cent. Silver is the only important product showing a decrease.

THE London *Times* states that important alterations are in progress in the Natural History Museum. Many of the less important specimens have been removed to store rooms, leaving space free in the exhibition galleries. The marsupials have been entirely rearranged and maps have been prepared showing their geographical distribution. A gallery in the western corridor has been set aside for the antelopes, and the unrivalled series of British birds has been removed to the ground floor. Space has been found for the birds through the rearrangement of the reptile gallery. Other changes are also in contemplation, as, for instance, in the first gallery, where the larger fishes are now seen suspended from the roof, so as not to cumber valuable floor space; while on the geological side there are signs of the approaching abolition of the hard-and-fast division which has so long separated paleontology from zoölogy and botany. Thus there may now be seen in the gallery of fossil mammalia skeletons of the Indian elephant, Indian rhinoceros and musk ox, placed for comparison with the fossil forms. 1,225 separate gifts, many of them comprising a large number of specimens, such as the Seebohm bequest, were received by the Museum last year.

IN his address, as President, before the Lincoln Microscope Club, Prof. Bessey stated, according to the *Microscopical Journal*, that microscopes are extensively used in the public schools of Nebraska, most of the high schools owning at least six.

Popular Astronomy states that at the last ses-

sion of the Illinois Legislature an appropriation was made for the erection and equipment of an Observatory for the State University at Champaign. The designs for the building were made, under direction of Prof. Ira O. Baker, by the Architectural Department of the University. The instrumental equipment, consisting of a 12-inch equatorial, a 3-inch combined transit and zenith telescope and a chronograph, will be made by Warner & Swasey, the optical parts being made by Brashear. This makes four universities which have established observatories within the past year, all of which have ordered telescopes from Warner & Swasey, with optical parts by Brashear. The list is as follows: University of Pennsylvania, Philadelphia (18-inch aperture); University of Ohio, Columbus (12-inch aperture); University of Minnesota, Minneapolis (10½-inch aperture); University of Illinois, Champaign (12-inch aperture).

A CATALOGUE of the types and figured specimens of fossil animals in the United States National Museum has been recently completed, and comprises type material representing 3,644 species, distributed as follows: Invertebrates, Palæozoic, 1,155; Mesozoic, 1,024; Cenozoic, 1,312; Vertebrates, 163. The fossil plants are not yet fully catalogued, but it is known that they represent more than 2,000 species, over 500 of them being contained in the 'Lacoe Collection' alone. There are in round numbers 500 Palæozoic, and 1,500 Mesozoic and Cenozoic species. Every type or figured specimen is made conspicuous by attaching to it a small, green, diamond-shaped ticket, or a white ticket bearing the word type. Should any specimen be separated from its label this ticket will draw attention to the fact that the specimen is a type and must be cared for.

UNIVERSITY AND EDUCATIONAL NEWS.

JOHNS HOPKINS UNIVERSITY has published on the occasion of its twentieth anniversary statements concerning the university which bear witness to the important part it has taken in the advancement of higher education and research in America. The University has conferred 358 degrees of Doctor of Philosophy, and of these graduates 175 hold college professorships. Eight hundred students of the University have engaged in teaching, and nearly every university and college in America numbers among its faculty a student of Johns Hopkins University. The following institutions have had in their faculties ten or more of its students: Chicago, 23; Wisconsin, 19; Bryn Mawr, 18; Stanford, 17; Michigan, 17; Pennsylvania, 16; Cornell, 14; Columbia, 13; Massachusetts Institute of Technology, 11; Nebraska, 11; Northwestern, 11; Harvard, 10; Woman's College of Baltimore, 10. There are now in the University 403 graduate students of which 150 are candidates for the degree of M. D. or physicians attending special courses.

THE catalogue of the University of Minnesota for 1895–96 shows the following enrollment for the year:

Graduate Students, all departments,	137
Undergraduates:	
College Science, Literature and Arts,	822
College Engineering, Metallurgy and the Mechanic Arts,	192
College of Agriculture:	
Collegiate Course in Agriculture,	10
School of Agriculture,	223
School of Dairying,	97
School for Women,	46
College of Law,	369
Department of Medicine:	
College of Medicine and Surgery,	243
College Homœopathic Medicine and Surgery,	31
College of Dentistry,	90
College of Pharmacy,	33
Summer School,	234
	2527
Students enrolled in more than one department,	38
Total,	2489

THE Massachusetts Institute of Technology has issued a circular calling attention to the opportunities it offers to college graduates. There are this year 80 such students in the Institute, 69 of whom are from other institutions. The summer courses offered by the Institute are especially planned for advanced students.

AT the celebration of Founder's Day of New