CURRENT NOTES ON ANTHROPOLOGY.

RELATION OF THE BRAIN AND SPINAL CORD IN MAN.

Some interesting facts were developed by Prof. Ranke at the last meeting of the German Anthropological Society, in relation to the relative weights of the brain and spinal cord in man.

It is well known that man has not the heaviest brain of any animal; the whale and elephant have heavier. Nor has he the heaviest in proportion to his weight; some singing birds, various small apes, and the mole have proportionately heavier brains. What Ranke brings out is that the weight of the human brain is much greater in proportion to the weight of the spinal cord than in any other vertebrate; and this, therefore, constitutes an anatomical distinction of man, strongly contrasting him with all other animal forms.

The article of Prof. Ranke may be found in the 'Correspondenzblatt' of the Society.

THE MAN FROM GALLEY HILL.

So long ago as 1888 Mr. Robert Elliott exhumed some human remains from the 'diluvial' gravel at Galley Hill, Northfleet, Kent, England, in immediate contiguity to 'palæolithic' implements. The remains were first described by Prof. Newton before the Geological Society of London, last year. The skull is markedly dolichacephalic, its index being 64; the forehead is low and retreating, the supraorbital ridges prominent; the chin is also retreating; the individual's height, calculated from the femur, was about 1.60 meter. In some respects, the remains were noticeably similar to those found at Spy, Belgium.

It must be said, however, that little value can be attached to these relics. The gravel deposit where they were found is now destroyed; they may have been a later burial in the gravel; years have elapsed since their exhumation during which time the finder concealed the discovery. Mr. Elliott has no one but himself to blame if men of science decline to accept the accuracy of his observations at this date. Let it be a warning to others to be more careful and more liberal.

D. G. Brinton.

SCIENTIFIC NOTES AND NEWS.

A GIGANTIC ORTHOCERATITE FROM THE AMERICAN CARBONIFEROUS.

It is a well known fact that the straight-shelled cephalapod was an abundant form of life during Paleozoic times. This is attested by the large number of species that have been described, those of the Orthoceras group alone numbering upwards of twelve hundred. The culmination and greatest expansion of the group was in the Silurian, and from that period it appears to have gradually dwindled in number of species, size and abundance, until at the close of the Paleozoic the form was all but extinct. In the American Silurian some of the shells attained huge proportions; but with the general decline of the group the later ones have heretofore seemed to rapidly become dwarfed until only small unimportant individuals were recorded after the Devonian.

In the Carboniferous a few dimunitive species have been described, none of them being more than a few inches in length. In the Coal Measures of the Mississippi basin the remains found were of rather rare occurrence, imperfectly preserved and of very small size. Seldom did the shells exceed six inches in length, and half an inch in diameter.

Of late years, however, some unusually fine material has been obtained in the black shales of the Lower Coal Measures in the vicinity of Des Moines, Iowa. Several of these shells were so large as to excite considerable wonderment. They were over two feet long and one inch in diameter at the larger end. These were thought to be giants of their kind and day.

Recently there was found in one of the coal mines at Fansler, in Guthrie County, Iowa, about forty miles from Des Moines, an Orthoceras shell of gigantic proportions, by the side of which all the other Carboniferous species of

the genus are mere pigmies. This specimen is three inches in diameter; and as it is of the same very slender type as the associated forms it could not have been less than six feet in length, and probably was even longer. The species is *O. fanslerensis*.

CHARLES R. KEYES.

ASTRONOMICAL.

THE last German mail has brought copies of the report made by Prof. Albrecht, of Potsdam, at the last meeting of the International Geodetic Committee on the subject of Variation of Latitude. The report contains much interesting matter. There is a summary of all the observational material gathered since 1890 and arranged in the form of monthly means for each observing station. The results are then discussed in such a way as to lead to a final table in which the difference between the mean and instantaneous latitudes is given for every tenth of a year and for every thirty degrees of longitude. The results are stated to be provisional only, because several of the observatories have not yet furnished definitive reductions of their observations. This want will no doubt soon be supplied. The results of the observations made at Columbia College, New York, which are among those not yet reduced, are particularly needed, according to Prof. Albrecht, because they alone can raise the determination of the y-coördinate of the instantaneous pole to sufficient precision. The most important result reached by Prof. Albrecht is summarized in the following words: "The phenomenon of the polar motion proves to be too complicated to admit of complete representation by means of a formula containing several terms. This having been proved, we may regard it as settled that we have at the present time only reached the stage of a first approximation to a knowledge of the phenomena in question. We should regard the problem, therefore, as very far from solved, and must devote to it our full attention."

IT will, perhaps, be of interest to astronomers and others interested in complicated calculations to learn that it is possible now to obtain a computing machine of the very highest capability at a very small price. The 'Brunsviga' machine, made by Ernst Schuster, Schöneberger Ufer, Berlin, costs only seventy-five dollars, and gives a product of thirteen figures. That is to say, two numbers, each containing six figures, can be multiplied together. These machines can be imported duty free by educational institutions. Three of them are in continual use at the observatory of Columbia College, New York, where they give the greatest satisfaction. H. J.

PHYSICS.

UNDER the title *Ueber die Doppelbrechung der Strahlen Electrischer Kraft* (Wied. Ann. Vol. 56), p. 1, 1895, Mr. Lebedew describes the apparatus and methods of obtaining very short Hertz waves, $\lambda = 0.6$ cm., together with convenient arrangements for showing polarization, interference, rectilinear propagation, reflection and refraction. He was able even to obtain crystals large enough to show double refraction, and constructed Nicols prisms of sulphur crystals cut correctly and set together with a film of ebonite. Using these Nicols he was able to repeat the usual tests between crossed Nicols in light, even producing a plate of sulphur which showed phenomena similar to those with the $\frac{1}{4}\lambda$ mica plate. These very short waves make many experiments not only possible but simple.

MR. K. OLSZEWSKI has applied a method (Wied. Ann. Vol. 56, p. 133, 1895) which he calls the expansion method, to the determinations of low temperatures and has compared the results with those obtained with a hydrogen thermometer. The results are as follows:

Tension of oxygen	Temperature determined by hydrogen thermometer	Temperature of the liquid oxygen determined with the platinum thermometer, using the expansion method,
50.8 atm. (critical pressure)	—118°.8 C. (critical temperature)	—118.° to —119°.2 C. (critical temperature)
32.6 atm.	—130°.3	—130°.
19. atm.		—140°.5
10.2 atm.	—151°.6	—152°.
1.atm.	—181°.4 to —182°.7 (boiling point).	—181°.3 to —182°.5 (boiling point)

W. H.

THE HUXLEY MEMORIAL.

THE general committee report that since the first meeting on the 27th ult., which

was fully reported in this journal, two meetings of the executive committee have been held. At the first of these, at which Lord Shand accepted the office of chairman, it was reported that a number of foreigners of eminence had expressed a wish to be associated with the proposal to commemorate Mr. Huxley's distinguished services to humanity. It was resolved, in the first instance, to invite subscriptions from the members of the general committee. At the second meeting, held on Wednesday, it was reported that the subscription, which at the general meeting had amounted to £557, had been increased to about £1,400, and it was resolved that a wider appeal for subscriptions should now be made to the friends and admirers of Mr. Huxley amongst the general public. The honorary secretary stated that in America committees were in the course of being formed to promote the realization of an adequate fund. The committee resolved to communicate, by means of a sub-committee of their number, with Mr. Onslow Ford, R. A., who had the advantage of being well acquainted with Mr. Huxley, in reference to the statue, which it is proposed should be erected beside those of Darwin and Owen in the Natural History Museum, South Kensington. The extent to which the committee may be able to carry out the other intended objects of founding exhibitions, scholarships, and medals for biological research and lectureships, and possibly in assisting the republication of Mr. Huxley's scientific works, will of course depend on the subscriptions which may now be received. These may be sent to the treasurer, Sir John Lubbock, or the bankers, Messrs. Robarts, Lubbock and Co., 15 Lombard street, E. C.; or to the secretary, Professor G. B. Howes, Royal College of Science, South Kensington. The amount received to December 20 is £1,535.

CONCILIUM BIBLIOGRAPHICUM.

We have now received the official prospectus of the card catalogue of zoölogical literature, the plans for which have on several occasions been mentioned in this journal. The Bureau is located at Universitäts Str. 8, Zurich-Oberstrass, Switzerland, under the direction of Dr. H. H. Field and the control of an international committee nominated at the recent Congress of Zoölogy. The Bureau will print a prompt catalogue of all zoölogical papers, whether published separately, or as articles in scientific journals. For the first year a subscription rate has been chosen which would barely cover the cost of printing (not of compilation nor of sorting) on an estimate of 100 subscribers to the whole set of cards. If this number cannot be reached, then the Bureau will be obliged, not merely to pay for the work of sorting and sending, but must also advance money to pay the deficit on the printing. If, on the other hand, 200 subscribers for the whole series can be secured, the card catalogue division of the Bureau's work would probably be self supporting, and any further increase might be used towards improving the material or towards reducing the price. In no case, however, will any profit be realized on the operations of the Bureau.

The entire set of cards is offered for sale at the rate of $2 per 1,000 cards (not including transportation), and it is estimated that about 8,000 cards will be issued during the first year. Special groups of cards, systematic or morphological, may be subscribed for at increased rates.

The Card Catalogue constitutes a special edition of the *Bibliographia Zoologica*, itself a continuation of the bibliographical part of the *Zoologischer Anzeiger*. This latter journal forms the connecting link with the *Bibliotheca Zoologica* of Engelmann, Carus und Engelmann, and Taschenberg, constituting an unbroken bibliography from the earliest times down to the present day. By a most fortunate arrangement with the eminent director of the *Zoologischer Anzeiger*, Prof. Carus will remain editor-in-chief of the *Bibliographia Zoologica*.

The Bureau will begin issuing an Anatomical Catalogue, the *Bibliographia Anatomica*, early in 1896, and arrangements will also be made for physiology, provided these two first experiments meet with success. The Botanical Section of the A. A. A. S., impressed with the importance of founding a similar bureau for botany, appointed at its last session an influential committee to study the working of the Zoölogical Bureau and to make arrangements for the estab-

lishment of a federated Bureau for Botany. It is, moreover, almost certain that a similar step will be taken in Brussels for yet other sciences by a powerful organization founded under the patronage of the Belgian government. It is, therefore, not excessive optimism to predict that it may be possible to realize in 1900 the great project of the Royal Society of London.

GENERAL.

IN the December number of Entomological News, Mrs. Annie T. Slosson gives a list of insects and spiders captured on or near the summit of Mt. Washington, N. H. With two previous lists, already published, the number of species foots up to 830, all taken at or above 5,500 altitude. This number does not represent the total fauna of this interesting region, as a number of Coleoptera, collected there by Mr. F. C. Bowditch, are not included. At first sight it appears surprising that so many insects should be found at such an altitude. However, it appears that the list includes, besides those indigenous to the climate and found in Labrador and northward, many living throughout the New England States, and doubtless not breeding on the summit of the mountain. The peculiar position of the peak, isolated in the midst of a temperate climate and of small extent, must facilitate the frequent occurrence of almost any of the more active insects from the surrounding valleys. To this fact, as well as to Mrs. Slosson's industry in collecting, her success may be attributed.

HARRISON G. DYAR.

THE editorial board of the *Astrophysical Journal* has decided that the Roland scale of wave-lengths, the ten millionth of a millimeter as a unit in which wave-lengths shall be expressed, the kilometer as the unit to be used in measurements of motion in the line of sight, and the nomenclature proposed by Vogel and Huggins for the hydrogen series be adopted. It also favors printing maps of spectra with the red end on the right and tables of wave-lengths with the shorter wave-length at the top. These standards will be used in the *Astrophysical Journal*, and it is hoped that they will be generally adopted.

THE annual meeting of the New York Zoölogical Society was held on January 7th, and the following officers were re-elected: President, Andrew H. Green; First Vice-President, Charles E. Whitehead; Second Vice-President, J. Hampden Robb; Treasurer, L. V. F. Randolph; Secretary, Madison Grant. The committee on a site for the new zoölogical garden reported that D. G. Elliot, of the Field Columbian Museum; A. E. Brown, of the Philadelphia Zoölogical Garden, and Frank Baker, of the Washington Zolöogical Garden, had examined the eligible sites in the city parks and regarded most favorably Van Cortlandt Park. It is the intention of the society to establish a garden in which the animals will not be closely confined but placed as far as possible under natural conditions.

AT a meeting of the American Philosophical Society on October 3d, Frederick Fraley was re-elected President and E. Otis Kendall and J. P. Lesley were re-elected Vice-Presidents. William Pepper was elected one of the Vice-Presidents in place of the late W. S. W. Ruschenberger. The Secretaries elected are: George F. Barker, George H. Horn, Patterson DuBois and Persifor Frazer.

ARRANGEMENTS are being made for the annual reception and exhibition of the New York Academy of Sciences, which will be held at the American Museum of Natural History and probably early in March. Professor H. F. Osborn is chairman of the executive committee and seventeen sciences are represented on the committee of arrangements. It is hoped that the coöperation of institutions outside of the city of New York may be secured to a greater extent than hitherto in the exhibits.

WE have received a list of the prizes conferred by the Paris Academy of Sciences on December 23d. These are too numerous to give in detail in this journal, but it may be interesting to note that the number of prizes offered is as great as sixty-nine. Several of the prizes are of the value of 10,000 fr., and one, for a method of curing an epidemic disease, is 100,000 fr. This prize was not, however, awarded this year.

IT is stated in the daily papers that Dr. John S. Billings, director of the Department of Hygiene in the University of Pennsylvania, has

been elected librarian of the Consolidated Libraries of New York, representing the Lennox Library, the Astor Library and the Tilden Bequest.

THE Botanical Library and the Herbarium of Columbia College, will be placed in a building to be erected in the New York Botanic Garden, and in return the privileges of the garden will be accorded to students of the College.

MACMILLAN & Co. announce that they will begin in September next a 'Garden craft series,' the first volume of which will be *Plant Breeding* by Professor L. H. Bailey.

THE *British Medical Journal* states that the question of founding a medical faculty in the University of Odessa, which had been long under discussion, has finally been decided in the affirmative. The municipality of Odessa has generously offered to double its grant for the new faculty, raising it from 250,000 to 500,000 roubles, that is, to over $250,000.

THE opening article in *Appleton's Popular Science Monthly* for January is a description of the origin of the Smithsonian Institution by Dr. H. Carrington Bolton. The author describes Smithson's curious career, but scarcely attempts to assign his reason for making the United States his residuary legatee. The article reviews the formation and growth of the institution, and a second article will consider its present status and many activities.

THE election of officers of the Binghampton (N. Y.) Academy of Science, held on the afternoon of January 4th, resulted as follows:

President, PROF. E. R. WHITNEY (re-elected).
Vice-President, PROF. HERBERT J. JONES (re-elected).
Recording Secretary, WILLARD N. CLUTE (re-elected).
Corresponding Secretary, BURT E. NELSON.
Treasurer, JOSEPH K. NOYES.

A reception was tendered the members in the evening by the Young Women's Christian Association at their rooms in the Strong Building.

A NEW Russian journal, a *Review of Psychiatry, Neurology and Experimental Psychology*, edited by Dr. Bekhteret, will hereafter be published monthly.

THE deaths are announced of Cavaliere Dr. Alfonso Ademello, sanitary director of the hospital of Grossetto, and known for his excavations at Grossetto and for his writings on the Maremma, of Dr. Sickenberger, professor of botany and chemistry in the medical high school in Cairo; of Dr. A. de Cerqueira Paito, professor of organical chemistry in Bahia, and of Dr. Paul Reis, professor of physics at Mainz.

UNIVERSITY AND EDUCATIONAL NEWS.

THE new catalogue of Harvard University shows the total number of instructors to be 366 and the total number of students 3,600. The students are distributed as follows: 1,771, College; 340, Scientific School; 285, Graduate School; 41, Divinity School; 465, Law School; 531, Medical School; 102, Dental School; 55, Veterinary; 15, Bussey Institute. The number of students is 310 greater than last year as compared with a gain of 134 for that year.

AFTER 1901 only college graduates will be admitted to the Harvard medical school. Johns Hopkins University is the only American University now making this requirement.

THE departments of Physics and Mechanical Engineering at Brown University have been materially improved by the removal of the work shops that formerly occupied the basement of the Wilson Physical Laboratory to a building recently constructed for their reception. The new building has thirty-six hundred square feet of floor space, and is well equipped with all the machinery necessary for thorough courses of instruction in practical metal and wood working. Of the rooms thus rendered available in the physical laboratory two are to be fitted out for high temperature and pressure investigations, two for an electrical engineering laboratory, and one for a drawing room for the department of civil engineering.

THE late Franklin Baldwin, of North Grafton, Mass., has made the following bequests to take effect on the death of his wife: Wellesley College, $50,000 to found a chair in mathematics in memory of his daughter, Katie Emma Baldwin; Smith College, Northampton, $12,000 for scholarships; The University of Vermont, $10,000 for scholarships; Dartmouth College, $6,000