most primitive. The most important factors in the development of the various forms are temperature and isolation.

A Preliminary Note on the Snake's Tongue: EDITH M. BRACE, Western Maryland College.

The chief function of the snake's tongue seems to be connected with a sense of feeling that does not require the stimulus of contact, and may be a finer development of the sense that enables some people to avoid obstacles in the dark without touching them. The bifid tip and the numerous folds that lie behind the forking of the tongue serve to greatly increase the surface exposure. Beneath the epidermis and extending out into the folds there is a deep nerve plexus composed of multipolar cells whose ends are frayed out into extremely fine fibrils that interlace in every direction. From this plexus nerve fibers extend out between the cells of the epidermis.

C. JUDSON HERRICK,
Secretary.

DENISON UNIVERSITY.

SCIENTIFIC JOURNALS AND ARTICLES.

Palæontologia Universalis.—The third fasciculus of this important republication of old or obscure species of fossil organisms has arrived. These three parts of 75 species, figured and described on 161 sheets. This completes the first annual subscription, which is eight dollars. The first fasciculus of the second series will soon appear, and subscriptions should be sent to G. E. Stechert and Co., 129–133 West 20th Street, New York City. The editorial work is in the hands of D.-P. Œhlert, of Laval, France, secretary to the International Commission appointed by the International Geological Congress, at its eight meeting.

CHARLES SCHUCHERT.

THE contents of *The Journal of Comparative Neurology and Psychology,* for January, is as follows:

'On the Areas of the Axis Cylinder and Medullary Sheath as seen in Cross Sections of the Spinal Nerves of Vertebrates.' By Henry H. Donaldson and G. W. Hoke.

'On the Number and Relations of the Ganglion Cells and Medullated Nerve Fibers in the Spinal Nerves of Frogs of Different Ages.' By Irving Hardesty.

Editorial: 'Psychology and Neurology,' 'The International Commission on Brain Research.'

Literary Notices.

SOCIETIES AND ACADEMIES.

THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

THE New York Section of the American Chemical Society held its fourth regular meeting of the season at the Chemists' Club, Friday evening, January 6. The following papers were presented before the section:

The Application of Bismuth Ammonium Molybdate to Gravimetric Analysis: F. V. D. CRUSER and E. H. MILLER.

Portions of a standardized bismuth nitrate solution were precipitated by acid ammonium molybdate, under varying conditions. In order to get the solution barely acid, the use of congo red was found to be preferable to methyl orange. In washing the precipitate of bismuth ammonium molybdate, ammonium nitrate gave better results than ammonium sulphate. It was found that bismuth may be determined correctly by the ignition of bismuth ammonium molybdate to $Bi_2O_3 : 4MoO_3$, when the temperature of ignition is kept below a dull red heat, and that this method gives as good results as those obtained by the reduction and re-oxidation of the molybdium by potassium permanganate.

In determining bismuth by the evaporation of a nitric acid solution of bismuth nitrate, the operation must be conducted in porcelain, otherwise some bismuth trioxide is reduced by unburned gases passing through the platinum.

Recent Progress in the Chemical Department of the Geological Survey: F. W. CLARKE.

The Work of the Bureau of Standards: W. A. NOYES.

The work of the National Bureau of Standards is organized under three divisions and the first two of these divisions are subdivided into six sections each. The bureau is, first of

all, custodian of the legal standards of weights and measures for the United States, these being, in accordance with an act of Congress passed in 1893, a standard meter and a standard kilogram. In addition to the verification of weights and measures for state and United States officials and for private parties, a large amount of testing of thermometers, of pressure, gas and air meters, of electrical instruments for measuring resistances and other electrical quantities, and of electric lamps, is done. In connection with this work many researches are necessary, and the most important of those now in progress pertain to methods of measuring high and low temperatures, the development of standard sources of monochromatic light for use with the interferometer, the study of polarimeters with reference to their use in examination of sugars imported into the United States, the study of the Clark and Weston cells as standards of electromotive force, the study of the silver voltameter and electro-dynamometer for an absolute measurement of electrical currents, the measurements of inductance and capacity in their bearing upon the measurement of alternating currents, and the development of an integrating photometer for the measurement of mean spherical illumination by electric lamps. The chemical division expects to take up the subjects of standards of purity for chemical reagents and of standard methods of technical analysis.

Last Year's Work and Future Plans of the Bureau of Chemistry: H. W. Wiley.

The lines of investigation relating to problems connected with the applications of chemistry to agriculture were pursued with little change during the year ending June 30, 1904. In order to secure economy as well as efficiency in this work an endeavor has been made for many years to collaborate with other scientific investigators in the problems which are under consideration. This has been particularly true in connection with investigations undertaken to determine the effect of environment upon chemical composition in sugar-producing plants. This work was confined for a long time to the evolution of a sorghum plant containing a high content of sugar and a low content of melassigenic substances. Later the same lines of investigations were applied to the sugar beet in a general way.

For lack of funds similar experiments authorized by Congress in the study of the effect of environment upon the composition of the cereal grains have not been pushed as vigorously as could be hoped. Nevertheless, numerous comparative determinations have been made of the effect of the environment on the protein content of wheat. These data, which have been collected over a period of several years, have for their chief purpose to indicate the general character of the study necessary to determine more accurately those conditions which affect so seriously the composition of the wheat kernel. The purposes which should be kept in view in the growth of wheat include those relating to the possibilities of panification. While it is generally true in the case of wheat that the gluten content increases *pari passu* with the content of protein, such is not always the case. The causes which disturb the equilibrium existing between the gluten and the protein are worthy of serious and careful study. The ultimate object of the studies which the bureau has now in hand is to indicate the conditions which are favorable to the production of a grain of any desired quality.

During the past year the demand which has been made upon the Bureau of Chemistry for information in regard to technical problems of a chemical character relating to the production of paper and leather has been very great. The diminishing supplies of raw material in the production of paper and the consequent increase in price have made the agricultural problem of the production of this material one of great importance. Forests suitable for the production of paper pulp are rapidly disappearing and the deficiency of the material which arises from this cause must be supplied from other agricultural sources. The fibers of many plants which have heretofore been used only as waste material offer promising sources of supply. Among these may be mentioned the Indian corn stalk, the cotton stalk, and the bagasse

resulting from the manufacture of sugar and syrup from sugar cane. The importance of the supply of tanning materials and of the study of leathers in regard to strength, appearance and durability is also growing, and constant demands are made upon the Bureau of Chemistry for information on these points.

Most important of the new work which was undertaken during the past year is the inspection of imported food products. Problems connected with the use of artificial colors, glucoses and preservatives have also been studied with a view of making the law more efficient. In the food laboratory important studies have been made during the year on the composition of tropical fruits and fruit products.

In the road material laboratory extensive tests have been made of all the materials used in road construction, both physical and chemical. The relations of colloidal structure to plasticity have been made the subject of especial research, the results of which were communicated to the society at the Philadelphia meeting by Dr. Cushman.

In the insecticide and agricultural water laboratory investigations of insecticides and fungicides, in connection with the Division of Entomology and the Bureau of Plant Industry, have been continued and an elaborate investigation of the character of mineral waters offered for sale has been partially completed. The work on the arsenic content of papers and fabrics sold on the American market has been completed and published as Bulletin No. 86.

F. H. POUGH,
Secretary.

DISCUSSION AND CORRESPONDENCE.

'BERYLLIUM' OR 'GLUCINUM.'

THERE is apparently little difference of opinion between Dr. Howe and myself as to the facts upon which a claim to priority of 'beryllium' over 'glucinum' as a name for the element under discussion is based, and I am willing to leave the interpretation of those facts to chemists at large.

It has, I think, been supposed, by those of the profession who have not personally looked into the matter, that the oxide was named 'glucine' by Vauquelin himself. I understand that Dr. Howe in his reply to me in SCIENCE, for January 6, admits that Vauquelin did not name the element or the oxide; that he in fact would probably have liked to name it 'beryllia,' really adopting glucine in his fourth publication under virtual protest, and that the clause 'la terre du Béril' used by Vauquelin in place of a name was literally translated into German as 'Berylerde,' becoming a definite name, used to this day, before Vauquelin consented to the use of 'glucine.' I think also that he will not question the fact that when it came to the actual use of the terms themselves Wohler separated and described 'beryllium'* before Bussy prepared 'glucinium'† although they were but a few weeks apart. With this summary I am perfectly willing to leave the question of priority to the 'ninety and nine' who are already using the more preferable term.

As to usage, it is quite evident that Dr. Howe's closing remarks are intended as a pleasantry, as I hardly think he wishes to give the impression that kalzium, kolumbium, etc., are the custom in German chemical literature. He does not question that the major part of the literature is German nor that the Germans, Swedes, Danes, Russians, Dutch and Italians use 'beryllium' exclusively. Next to the Germans the French have the most articles to their credit and use 'glucinium' exclusively, but the impression which Dr. Howe seems to wish to convey, that this is the customary term in England and America, is not correct. He made a lucky find in the index of the *Journal of the Chemical Society* (London) for 1903, which does read 'Beryllium, see Glucinum,' for some unknown reason, for the one abstract to which it refers uses 'beryllium' solely both in title and in subject matter, and 'glucinum' does not appear in this journal in index or abstracts on the subject for several years previously, although the abstracts are frequently from the French. This journal apparently leaves the matter to the wishes of the author, for Pollock in 1904 uses again 'glucinum.' For at least five years

* *Ann. der Phys.*, 13, 577.

† *Journal de chim. medical*, 4, 453.