of Another Surface,' by L. P. Eisenhart; 'On Groups Generated by Two Operators,' by G. A. Miller; 'A Curious Approximate Construction for π,' by G. Peirce; Review of Manning's Non-Euclidean Geometry, by J. L. Coolidge, and of Bianchi's Differential Geometry, by J. K. Whittemore; 'Notes'; 'New Publications'; 'Tenth Annual List of Papers Read before the Society and Subsequently published'; and a sixteen-page Index of the Volume.

The Popular Science Monthly for July opens with an important article on 'The Transmission of Yellow Fever by Mosquitoes,' by George M. Sternberg, detailing the long and careful series of experiments which seem to clearly point out the mosquito as the active agent in the spreading of this disease. Incidentally it may be noted that no less than eighteen men voluntarily exposed themselves to the disease in order to test the theory of its diffusion. Under 'Climate and Carbonic Acid,' Bailey Willis discusses the evidence in favor of the theory that the glacial epochs have been caused by the absorption of carbonic dioxide from the atmosphere, permitting the radiation of heat and lowering the temperature of the earth's atmosphere. A translation is presented of the article on 'The Peopling of the Philippines,' by Rud. Virchow, and Havelock Ellis continues his 'Study of British Genius,' this instalment being devoted to pathology, from which it appears that there is a special connection between genius and gout. Edward L. Thorndike treats of 'The Intelligence of Monkeys,' deciding that they carry the animal method of learning beyond a point reached by any other of the lower animals. 'Cocaine Analgesia of the Spinal Cord' is discussed by Smith Ely Jelliffe, and Henry A. Pilsbry considers 'The Evidence of Snails on Changes of Land and Sea,' while Frank Waldo describes the work of 'The Blue Hill Meteorological Observatory,' which he considers the most successfully conducted meteorological observatory in America. The final article is on the organization and aims of 'The American Association for the Advancement of Science' apropos of its coming meeting in Denver. There is much interesting reading to be found in 'The Progress of Science.'

In *The American Naturalist* for June, W. M. Wheeler presents the first part of a paper on 'The Compound and Mixed Nests of American Ants.' Glover M. Allen describes 'The Louisiana Deer' as a subspecies under the name of *Odocœlus virginianus louisianæ*. It is a rather curious fact that the antlers of the type of the subspecies and of the two forms shown for comparison are all abnormal. R. W. Shufeldt gives an excellent paper 'On the Osteology and Systematic Position of the Screamers' (Palamedea: Chauna), in which their points of agreement and disagreement with the ducks and fowls are well shown. 'Normal Respiration and Intramolecular Respiration' are discussed by George J. Peirce, and Abram V. Mauck contributes an article 'On the Swarming and Variation in a Myriapod' (*Fontaria virginiensis*). The fifteenth instalment of the fine series of 'Synopses of North American Invertebrates' is by Hubert L. Clark and is devoted to the Holothurioidea. 'Editorial Comment' and the customary reviews complete the number.

The Auk for July is mostly devoted to systematic papers: 'Bendire's Thrasher,' by Herbert Brown; 'Birds of the Black Hills,' by Merritt Cary; 'Unpublished Letters of William MacGillivary to John James Audubon,' by Ruthven Deane; 'The Resident Land Birds of Bermuda,' by Outram Bangs and Thomas S. Bradlee, containing descriptions of several new species; 'A New Ground Dove from Western Mexico,' by Outram Bangs; 'The Monterey Hermit Thrush,' by Joseph Grinnell; 'The Winter Birds of Pea Island, North Carolina,' by Louis B. Bishop, a list of 42 species, and 'A New Sharp-tailed Finch from North Carolina,' by Louis B. Bishop. The 'General Notes' and 'Reviews of Recent Literature' are very full.

SOCIETIES AND ACADEMIES.

PHYSICS AT THE AMERICAN ASSOCIATION.

The officers of section B, Physics, Professor De Witt B. Brace, chairman, and Professor John Zeleny, secretary, have received the following titles of papers for presentation at the

joint meetings of Section B of the A. A. A. S. and the American Physical Society, to be held in Denver:

'Note on the Transmission of Radiation by Thin Films of Asphalt': Professor E. L. Nichols, Cornell University.

'The Visible and Infra-red Absorption Spectrum of Iodine in Solution': Professor E. L. Nichols and W. W. Coblentz, Ithaca, N. Y.

'Results of the Recent Magnetic Work of the U. S. Coast and Geodetic Survey': Dr. L. A. Bauer, Washington, D. C.

'The Physical Decomposition of the Earth's Permanent Magnetic Field': Dr. L. A. Bauer, Washington, D. C.

'Discharge of Electrification by Glowing Platinum and Velocity of the Ions': Professor E. Rutherford, McGill University, Montreal.

'The Absorption Spectrum of Colloid Ferric Hydrate Solutions': Professor B. E. Moore, University of Nebraska.

'Index of Refractions and Dispersion of Dilute Aqueous Solutions': Professor B. E. Moore, University of Nebraska.

'On the Calorimetric Properties of the Ferro-Magnetic Substances with Special Reference to Nickel-Steel': B. V. Hill, University of Berlin.

'Note on Strains in very Dilute Solutions of Gelatine': B. V. Hill, University of Berlin.

'On Electro-Striction': Professor Z. S. Shearer, Cornell University.

'The Distribution of Energy in the Spectrum of the Acetylene Flame': George W. Stewart, Ithaca, N. Y.

'The Visible Spectrum of the Incandescent Lamp at Various Temperatures': Ernest Blaker, Ithaca, N. Y.

'The Heat of Combustion of Acetylene': H. A. Rands, Ithaca, N. Y.

'The Radiant Efficiency of Vacuum Tubes': Edward E. Roberts, Ithaca, N. Y.

'The Fall of Temperature through a Wedge-shaped Wall of Glass': Albert Ball, Ithaca, N. Y.

'Notes on the Supposed Elongation of a Dielectric in an Electrostatic Field': Professor L. T. Moore, University of Cincinnati.

'On the Cavendish Experiment and the Law of Inverse Squares in Electrostatics': Professor S. J. Barnett, Stanford University.

'On Gauss's Flux Theorem': Professor S. J. Barnett, Stanford University.

'The Diminution of the Potential Difference between the Electrodes of a Vacuum Tube Produced by a Magnetic Field': Dr. John Almy, University of Nebraska.

'The Discharge Current from a Surface of large Curvature': Dr. John Almy, University of Nebraska.

'Experiments on a New Form of Standard High Electrical Resistance': H. C. Parker, Columbia University.

'Variation of Contact Resistance with Change of E.M.F.': H. C. Parker, Columbia University.

'On the Demagnetization of a Discharge in Iron when Electromagnetically Compensated': Zeno Crook, Lincoln, Nebraska.

'On the Forces produced on Adjacent Spherical Surfaces by the Flux of a Viscous Fluid': S. R. Cook, Lincoln, Nebraska.

'On the Determination of Dispersion by Means of Channeled Spectra with the Concave Grating': P. J. Antes, University of Nebraska.

'On the Faraday Effect during Hydrolysis of Ferric Chloride': F. G. Bates, University of Nebraska.

'The Absorption and Dispersion of Fuchsin': W. B. Cartmel, University of Nebraska.

'On Conditions controlling the Drop of Potential at the Electrodes in Vacuum Tube Discharge': Professor C. A. Skinner, University of Nebraska.

'The Influence of Temperature upon the Photo-electric Effect': Professor John Zeleny, University of Minnesota.

'On the Resolution of the Faraday 'Effect' in the Case of Liquids': Professor D. B. Brace, University of Nebraska.

'On the New Method of determining the Curve of Luminosity by Homogeneous Comparisons': Professor D. B. Brace, University of Nebraska.

SECTION OF BIOLOGY OF THE NEW YORK ACADEMY OF SCIENCES.

AT a regular meeting of the Section held on May 13, Professor C. L. Bristol presiding, the following program was offered:

R. WEIL: 'A Contribution to the Problem of the Ear-Bones.'

A. G. MAYER: 'On the Variation of Snails of the genus *Partula* in the Valleys of Tahiti.'

O. S. STRONG: 'A Case of unilateral Atrophy of the Cerebellum.'

Dr. Weil's paper was a critical discussion of the theory of the ear-bones, as embodied in the recent articles of Kingsley and Gaupp. Two main contentions were considered: first, that the malleus and incus of mammalia were homologous with the quadrate and articular of lower forms, while the temporo-maxillary articulation is a new formation; second, that the ossicles of mammalia cannot possibly have de-

scended from those of Sauropsida. The first contention is based upon the embryonic connection of malleus and incus with the Meckelian bar, upon the embryonic situation of the last anterior to the Eustachian tube, and upon the innervation of the muscle of the malleus by a branch of the trigeminus. Embryonically, however, the malleo-incudal complex, in addition to its continuity with the Meckelian bar, arises from the auditory capsule, which contributes to both malleus and incus, the stroma of the tympanic cavity, contributing to the manubrium mallei, and a membrane bone which forms the Fallopian process. Furthermore, as Gegenbaur points out, the continuity of malleus and incus, if they be the quadrate and articular, is itself in contradiction to the independent embryonic origin of these elements in the lower forms. The pre-trematic origin of the ossicles in the pig, as described by Kingsley, is contrasted with their post-trematic, or hyoidean, origin in lower forms. Dr. Weil stated that his studies of a full series of pig and opossum embryos did not enable him to decide whether the malleus, and still more, the incus, lay primarily in front or behind the tube. The bones cross the anlage of the tube in a transverse direction, lying above it; by the gradual absorption of the intervening stroma they come to occupy the cavity of the tympanum. Finally, the innervation of the tensor tympani muscle of the malleus by a branch from the otic ganglion of the trigeminus is taken to indicate the relation of the malleus to the mandibular arch. But lesions of the trigeminus at its root do not involve hearing, while the contrary is true of lesions of the facial. This fact would point to the origin of the above-mentioned nerve from the seventh nerve, and would make the malleus a part of the second arch. The second contention is supported, first by the difference in the embryonic relations of the bones to the Eustachian canal, an argument already considered, and second, by the differences in the relations of the chorda tympani nerve, which in Sauropsida crosses *above* the chain, and in mammalia *below* it. The speaker showed that the pathologists, from a comparison of a large number of lesions of the trigeminus and of the facial at the base of the brain, had demonstrated the exit of the chorda tympani in man with the roots of the former. But since it leaves the brain in lower forms with the seventh, its relations to bony structures are evidently not sufficiently constant to constitute a criterion of homologies. From these facts, it would appear that the homology of malleus and incus with the quadrate and articular has not yet been demonstrated.

Dr. Mayer showed that the snails in question are subjected to conditions of isolation very similar to those affecting the Achatinellidæ of Oahu in the Hawaiian Islands, occurring in valleys which are separated by comparatively barren ridges. The farther apart the valleys, the less intimate is the relationship between their snails. Although geographical isolation is probably the chief factor in determining the establishment of definite varieties, yet the differing environmental conditions obtaining in each valley may exert considerable influence.

Dr. Strong presented a preliminary report, illustrated by lantern slides, upon a case of unilateral atrophy of the cerebellum in a child which lived to the age of three years and four months. The principal external anomalies noted were the following: The left hemisphere of the cerebellum was almost entirely absent; the right olive was wanting and the transverse pontile fibers on the left side were deficient; the left half of the pons protruded more than the right; the right crus cerebri was much narrower than the left; the left restiform body was smaller than the right, and the superior cerebellar peduncle of the left side was deficient; the posterior corpora quadrigemina were asymmetrical, while the left anterior corpus quadrigeminum was apparently lacking; the median line of the fourth ventricle was curved with its convexity toward the left, and such structures of the medulla as the clava, cuneus, ala cinerea, and eminentia teres were located or extended further cephalad on the left side than on the right. Preliminary transverse sections cut at various levels through the medulla, pons, isthmus and posterior corpus quadrigeminum showed the following points: only small parts of the right olive and the left corpus restiforme were present, and there was a corresponding deficiency of the cerebello-olivary fibers; the transverse pontile

fibers on the left side were reduced, but the nuclei pontia were larger on the left side; the longitudinal pontile fibers were deficient on the right, as shown by the smaller crus cerebri of this side; the left lemniscus was the smaller, and the left superior cerebellar peduncle was reduced. Other deficiencies were noted, which, however, require further study. Full discussion of the case was postponed, as the research is as yet uncompleted.

HENRY E. CRAMPTON,
Secretary.

DISCUSSION AND CORRESPONDENCE.

THE WASHINGTON MEMORIAL INSTITUTION.

TO THE EDITOR OF SCIENCE:

A curious incongruity appears in the plan for the Washington Memorial Institution as outlined in the report on 'A National University' in the current number of SCIENCE, as well as elsewhere. The first paragraph in the platform of the new institution provides that 'it will be independent of government support or control' (p. 51). Yet the seventh paragraph assumes that the institution will depend on the governmental departments (including the Smithsonian Institution, the Library of Congress, etc.) for its facilities, or in other words for the essential part of its support; and it also provides that 'students working in government laboratories or collections will be subject to the rules and regulations there prevailing,' *i. e.*, will be under governmental control. It should be pointed out that this unfortunate incongruity is much more glaring in statement than in thought; the projectors of the enterprise merely desired to emphasize the independence of the prospective institution from direct federal appropriation. Nevertheless, the incongruity has given rise to criticism in various influential quarters; it would seem, indeed, to have been one of the factors leading to the rejection of the report made by the committee of the National Educational Association.

As a matter of fact, the publications hitherto made concerning the Washington Memorial Institution have been of preliminary character, and have emanated from committees and individuals rather than from the Institution. Accordingly, criticism might well be withheld pending the issue of official statements by the Institution itself. W J MCGEE.

WASHINGTON, D. C.,
July 13, 1901.

ROYAL SOCIETY OF CANADA. SUPPLEMENTARY NOTE.

IN the account given of the twentieth meeting of the Royal Society of Canada held in May, 1901, and published in the June 28 issue of SCIENCE, the writer inadvertently omitted to mention Professor T. Wesley Mills's paper presented to Section IV. (geological and biological sciences). The title of the paper was: 'The Anatomy and Physiology of the Brain of the Bird.' It was a continuation of a former one presented to the Society two years ago. The author outlined his plan of investigation which was somewhat extensive and which, for its execution, would require much time yet. He showed that the anatomical results would probably modify the views of conduction in the nervous centers until recently prevailing, and that the entire subject would require reconsideration in view of his own and other researches in various directions. The effects of ablation of portions of the brain on the psychic condition of birds were traced in brief outline with their general implications. This part of the subject had already been worked out by the author pretty fully, but was also being continued at the present time. Remarks were made by Professor R. Ramsay Wright, of Toronto University, by Professor E. E. Prince, Commissioner of Fisheries for Canada, Dr. F. Slater Jackson, and Dr. A. M. Mackay. H. M. AMI.

OTTAWA, July 9, 1901.

A HORNED LIZARD AT A HIGH ALTITUDE.

ON June 30, at the head of John's Cañon, Las Vegas Range, N. M., I was somewhat surprised to find a horned lizard in the uppermost part of the Canadian Zone, above 10,000 feet (the aneroid indicated 10,500, but is not quite reliable at that altitude). The species is *Phrynosoma hernandes* (Girard), and the specimen is dark gray, beneath white mottled with gray. The top of the range is Hudsonian, and no lizards are found there. T. D. A. COCKERELL.

E. LAS VEGAS, N. M.,
July 2, 1901.