THE AMERICAN MORPHOLOGICAL SOCIETY.

I.

THE ninth meeting of the Society was held at Columbia University, New York City, on December 28th, 29th and 30th. Professor H. F. Osborn was in the chair; Dr. G. H. Parker, Secretary. In the course of his introductory remarks, Professor Osborn welcomed the Morphologists to the new zoological laboratories at Columbia, and especially congratulated the Society upon the rapid progress which morphology in all its branches is making in this country. He spoke of the important part which had been played by the *Journal of Morphology* during the past eleven years, and the debt owed by American zoologists to Mr. Allis for his generous support. This journal now requires for its maintenance the financial support of all morphologists of this country, all of whom should assist by subscribing. One of the marked features of recent progress is the rapid development of fresh-water and marine biological stations, all of which are contributing to our detailed knowledge of American fauna, and in some cases extending even to the study of important foreign types. The greatest defect in recent work is the tendency to prolixity. 'Brevity is the soul of wit,' and the very expansion of zoological literature necessitates as condensed a style of writing as is consistent with completeness and clearness. The recently collected papers of Huxley prove that it is possible to present the most important results in very condensed form.

In the business session the following are the more important transactions: A resolution expressing the grateful acknowledgments of the Society to Mr. Edward Phelps Allis, Jr., for his munificent gifts towards the founding and maintenance of the *Journal of Morphology* during the first ten years of its existence; the election to membership of F. W. Bancroft, C. L. Bristol, G. N. Calkins, J. J. Hamaker, Samuel Henshaw, C. F. W. McClure, C. B. Wilson and M. A. Wilcox; and the election of officers: President, E. G. Conklin; Vice-President, W. M. Wheeler; Secretary and Treasurer, Bashford Dean; Executive Committee, J. P. McMurrich and G. H. Parker.

Forty-five papers were presented before the scientific sessions, of which the greater number are here given in summary in the order in which they were read.

Notes on the Development of a Myxinoid. BASHFORD DEAN.

PARTICULAR reference was made to the horn-like egg membrane as maternal in origin; it is traversed by pore-canals analogous to those of the radiata of teleostomes. The anchor filaments represent the greatly specialized end-bulbs of the radial elements of the shell. Early segmentation is confined to a small but definite hillock of germinal protoplasm subjacent to the micropylar canal. In early blastula stages the cell cap extends downward to the region of the opercular ring. Gastrulation is noted when a downgrowth takes place on one side; here the head of the embryo shortly appears, and the trunk is laid down longitudinally as the blastoderm progresses, now symmetrically, toward the vegetative pole. Neural folds are early apparent, and the brain is tubular and relatively of great length. In some cases the tail buds out when the downgrowth of the blastoderm has enveloped scarcely more than the anterior half of the egg. In others the outgrowth of the tail is notably retarded. A primitive streak is present, terminating behind in an ovate yolk plug; the latter is latest apparent near the vegetative pole. There is no evidence of a greater number of gill slits than the normal number.

On the Reproductive Habits and Development of the Californian Land Salamander, Autodax. W. E. RITTER. (Presented by G. H. Parker.)

The subterranean egg-burrow of this saltatory urodeles resembles somewhat closely that of *Ichthyophis*. The eggs are retained in a cluster and attended and kept moistened, probably with urine, by the female. A series of embryos taken from a single burrow will shortly be described.

New Facts regarding the Development of the Olfactory Nerve. W. A. Locy.

The early embryonic history of the olfactory nerve is known. There has been little advance in this direction since the appearance of Marshall's paper in 1878, who gave the history of the nerve prior to the formation of the lobe and anticipated by suggestion most of the views since expressed regarding its nature and relationships. The chief advances have been made in determining the source of the fibers (His, Disse and others), and in the minute structure of the olfactory lobe, ganglion, etc. (Cajal, Retzius and others). But, in the meantime, the early embryonic history has not been elucidated, and, even to-day, we do not possess the complete history of this nerve in any one animal.

This paper presented in outline the history of the olfactory nerve in *Acanthias* from its earliest appearance to adult conditions, embracing (*a*) the embryonic history of the olfactory nerve prior to the formation of the lobe, and (*b*) the formation of the olfactory lobe, its various transformations, and the subsequent history of the nerve. The chief point of interest consists in demonstrating a hitherto unrecognized olfactory nerve, and determining its history and relationships to the olfactory bundle. The new nerve arises from the summit of the forebrain near the median plane, and passes laterally into communication with the main olfactory and thence into the olfactory cup. It is the first one to appear and may, therefore, be primitive. It is ganglionated. It was discovered by dissections of very small embryos—it lies in such a position that its relationships would not be appreciated by study of sections made in any of the conventional planes.

There are two distinct, widely separated connections existing simultaneously between the olfactory epithelium and the brain-wall, one is dorsal and median (the new nerve) and the other is lateral. The latter is complex, consisting of two main divisions. The new nerve can be demonstrated in specimens, as early as 6–8 mm. in length. The two brain connections are well seen in embryos 16 mm. and upwards; they are very evident from 20mm. forwards. The lobe begins in specimens about 25mm. long; it is still small at 38mm., but well developed at 44 mm. and upwards. The fibers of the new nerve were traced into the olfactory epithelium. It was also shown to perish in the adult.

Review of Recent Evidence on the Segmentation of the Primitive Vertebrate Brain. W. A. Locy. (Read by title.)

The Metameric Value of the Sensory Components of the Cranial Nerves. C. Judson Herrick.

The primary segmental or branchiomeric nerve is conceived as comprising four components: somatic motor, viscero-motor, somatic sensory (general cutaneous) and viscero-sensory (communis). No cranial nerve of any gnathostome vertebrate has retained all these components.

In the head each sensory component, as a physiological adaptation, has been concentrated so that all its fibers tend to be related to a single center in the brain—the fasciculus communis (f. solitarius) and chief vagus nucleus in the case of the visceral sensory and the spinal fifth tract and related nuclei, chief sensory trigeminal n. and n. funiculi, in the case of the somatic sensory. This involves reduction of each component in some segments and hyper-