the surf on sandy beaches it will be seen that viviparity is a necessary condition of existence with these forms. A full series of the eggs and embryos of *Cymatogaster aggregatus* and the adults of this and five other species of Embiotocidæ were exhibited. Attention was also called to a number of specimens of the singular little blind fish (*Typhlogobius californiensis*, which lives in the burrows of *Callianassa* under rocks at Point Loma, near San Diego.

WILLIAM MORTON WHEELER.

NEW YORK ACADEMY OF SCIENCES—SUB-SECTION OF PSYCHOLOGY AND ANTHROPOLOGY, APRIL 26, 1897.

THE Academy met with Professor Thomas R. Price in the chair. The following papers were presented: 'Mental Imagery,' by Mr. W. Lay. The paper was a brief report of the result of two years' study and research. Of one hundred and twenty-five New York artists, the speaker found but three or four who exhibited the extraordinary degree of the power of visualizing which might be looked for in individuals trained to observe things from a purely pictorial standpoint. One hundred and fifty college students gave the same result. The speaker described the methods and gave the results of his experiments on himself to determine in terms of what sense the content of his own train of thought was chiefly composed. He has studied also the elements of mental imagery to be discovered in language and the visual, auditory and other imagery in poetry.

'Visual After-images,' by Mr. S. I. Franz. The speaker first described a typical after-image and referred to the interest the phenomena had aroused, as shown by the number of prominent scientists that had discussed them. Their importance was shown both for a correct theory of color vision and epistemologically as connecting links between sensation and memory and imagination. Experiments on the production (*i. e.*, the threshold) and on the duration were then described, and curves showing the results obtained were exhibited. The psychic relations of the different physical variables (viz. time, area and intensity) were discussed. The great individual variations, particularly in the coloration, showed that the after-image is not simple but exceedingly complex, and that the present theories to explain the phenomena are inadequate.

LIVINGSTON FARRAND,
Secretary pro tem.

THE ACADEMY OF SCIENCES OF ST. LOUIS.

AT the meeting of the Academy of Science of St. Louis, held on the evening of May 3, 1897, 21 persons present, Mr. H. Von Schrenk spoke of the respiration of plants, with special reference to the modification of those growing with their roots submerged in water. The lecture was illustrated by a demonstration of the liberation of carbon dioxide in respiration, from the roots of an ordinary flowering plant and freshly gathered fungi, and the more usual ærenchyma structures were made clear by the use of lantern slides.

Professor F. E. Nipher described a simple means of measuring the resistance of a tube to the flow of a current of air, when compared with an accepted standard, by the use of a tubular device similar in principle to the Wheatstone bridge, used in electrical instruments; the apparatus, in the present instance, consisting of parallel tubes filled with air, connected by a tubular bridge, in the middle of which a drop of water was placed, so as to change position with the variations in the flow of air on the one hand or on the other.

WILLIAM TRELEASE,
Secretary.

NEW BOOKS.

The Development of the Frog's Eggs; an Introduction to Experimental Embryology. THOMAS HUNT MORGAN. New York and London, The Macmillan Company. 1897. Pp. x+192.

Navahoe Legends, collected and translated by WASHINGTON MATTHEWS. Boston and New York, Houghton, Mifflin & Co. 1897. Pp. viii+299.

Introductory Course in Differential Equations. D. A. MURRAY. New York, London and Bombay, Longmans, Green & Co. 1897. Pp. xv+234.

The Science of Speech. ALEXANDER MELVILLE BELL. Washington, D. C., The Volta Bureau. 1897. Pp. 56.