

A very interesting feature was an exhibit, by Mr. Ernest LeSueur, of living turtles (some of which were exotic), salamanders and tree-toads. There were four of the last mentioned, and two of them (probably females) took on, early in the evening, the green colour of the electric-light shade.

Mr. Halkett showed a number of specimens of various fishes preserved in museum jars.—A. H.

INSTINCT AND EDUCATION.

An abstract of an Address read before the Ottawa Field Naturalists' Club, January 4th, 1910, by
Mr. A. E. Attwood, M.A.

Foreshadowings of Instinct in its mechanical manifestations are observable in inorganic nature in the phenomena of gravitation, magnetism and crystallization. The movements and behavior of plants resemble the instinctive actions of animals. Plants are animate objects, *i.e.* objects with mind. Heredity, a distinctive characteristic of instinct, is also a characteristic of plants. Vitality implies mentality.

Reflex action so closely resembles instinctive action that Herbert Spencer defines instinct as complex reflex action. Instinct is, however, a broader term as it is observable in the lowest of animals, whereas reflex action implies a more or less developed nervous system.

Instinct is racial memory; it is inherited habit; it is complex reflex action; it is capitalized experience. A series: an action, a repeated action, a habit, an inherited habit or an instinct, an intuition. Instincts are faculties which are innate, hereditary, semi-automatic and semi-conscious. They attain results without the necessity of previous individual instruction, reason, or experience.

There are two classes of instincts: primary or congenital instincts, and secondary or acquired instincts. The latter are evolved from the exercise of a rational intelligence. The brain is the organ of reason. The evolution of instincts was promoted by the development of a brain in the animal kingdom. The brain is the school-master in the work of evolving instincts, it is a short-cutting device for the development of the race.

The progress of the race depends upon the constant accretion of secondary instincts. The work of education should be to develop desirable habits which shall be transmitted as instincts to subsequent generations. We should begin the training of a child many generations before he is born.