

Bumpus, on 'The Elimination of the Unfit.'¹—Professor Bumpus has availed himself of the opportunity to contribute to the establishment of the hypothesis of natural selection by the use of material furnished to his hands by the great storm of Feb. 1, 1898, at Providence, R. I., in the form of 136 House Sparrows which, as victims of the storm, were brought to the Anatomical Laboratory of Brown University. Of these 72 revived and 64 perished. A careful study of these birds by means of detailed measurement, as of length, alar extent, the length of head, humerus, femur, tibio-tarsus, etc., revealed the fact that in the birds that died a larger proportion departed from the average or normal standard in one or more ways than was the case among those that survived. Hence Prof. Bumpus concludes: (1) . . . that the birds which perished, perished not through accident, but because they did not possess certain structural characters which would have enabled them to withstand the severity of the test imposed by nature; they were eliminated because they were unfit. (2) The process of relative elimination is most severe with extremely variable individuals, no matter in what direction the variations may occur. It is quite as dangerous to be conspicuously above a certain standard of organic excellence as it is to be conspicuously below the standard. It is the *type* that nature favors. (3) Disregard of structural qualifications finally produces a throng of degenerates, whose destruction will follow the arrival of adversity." The data on which the conclusions rest are presented in detail, mostly in the form of tabulated measurements.—J. A. A.

Whitman on 'Animal Behavior.'²—In his very suggestive paper on 'Animal Behavior' Professor Whitman has made a most valuable contribution to the subject of Instinct and its relation to Intelligence. It is the outcome of elaborate and most careful study of the 'behavior of animals,' both of low and of high organization, as the leeches of the genus *Clepsine*, of the large fresh water salamander of the genus *Necturus*, and various species of Pigeons. The behavior of these different animals under varying conditions is detailed at length, and its meaning and bearing on the origin and relations of instinct and intelligence are most lucidly discussed, in connection with the leading hypotheses on the subject.

Not long since it was a more or less generally accepted theory that instincts were simply inherited habits. Recently, as Prof. Whitman notes, this theory has been abandoned as inadequate by some of its

¹The Elimination of the Unfit as illustrated by the Introduced Sparrow, *Passer domesticus*. A Fourth Contribution to the Study of Variation. By Hermon C. Bumpus, Biological Lectures delivered at the Marine Biological Laboratory of Wood's Holl. Session of 1897 and 1898 (1899) pp. 209-226.

²Animal Behavior. By C. O. Whitman. Biological Lectures of the Marine Biological Laboratory, Wood's Holl, Mass., 1898 (1899), pp. 285-338.