

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES. SECTION OF BIOLOGY.

THE December meeting was held at the American Museum of Natural History, Professor Underwood presiding. Papers were presented by Professor H. F. Osborn and Professor F. B. Sumner.

Professor Osborn exhibited newly prepared skulls of *Diplodocus*, *Morosaurus* and *Creosaurus*, from Wyoming. The skull of *Morosaurus* is new to science.

Under the title 'Recent Discoveries of Extinct Animals in the Rocky Mountain Region and their Bearings on the Present Problems of Evolution,' Professor Osborn exhibited a series of skulls of the Eocene ancestors of the Oligocene Titanotheres, stating as a result of recent investigations that the Oligocene Titanotheres were found to represent four distinct lines of descent in each of which horns independently developed, and that the Eocene forms also represented four distinct lines of descent, two of which became extinct, while the others gave rise to Oligocene forms. As bearing upon the general problem of evolution, it was pointed out that the paleontologist enjoys the peculiar advantage of following a series through the origin and development of organs to their subsequent progression or decline. As early as 1888 the speaker had taken the ground that various paleontological series demonstrate the *definite or determinate variations* of certain kinds. In 1892 he connected with this the idea that certain series of animals related by descent from a common stem form exhibit the *potential of similar evolution*, describing this as a law of latent or potential homology. It is now found in this series of Titanotheres that there is more than a potential of similar evolution; there is evidence of a predisposition to similar evolution as shown in the wholly independent development in two distinct series of horns from hornless types at exactly similar points on the skull, namely, at the lateral junction of the frontals with the nasals. (The communication had been in part presented before the Brooklyn Institute

of Arts and Sciences, and before the Zoological Congress at Berne.)

Professor Sumner's paper was a preliminary note on 'Experimental Studies of Elimination and Selective Adaptation in Fishes.' Many experiments with the three common species of *Fundulus* tested the relative effect of asphyxiation and of gradual and abrupt changes of density in transferring from sea to fresh water and *vice versa*. Extended biometric studies point to the following conclusions: (1) the more and the less resisting individuals of a given species are different in type and in variability; (2) different methods of elimination result in selection with reference to different characters; (3) two closely related species were selected with reference to the same characters; (4) *Fundulus heteroclitus* from brackish water differ in all measured characters from those taken from the sea; (5) the differences of type in the three species of *Fundulus* are not due to natural selection acting with reference to the particular conditions which they are fitted to withstand.

M. A. BIGELOW,
Secretary.

DISCUSSION AND CORRESPONDENCE.

STYLE IN SCIENTIFIC COMPOSITION.

PROFESSOR EASTMAN has recently (SCIENCE, XX., 807) criticized certain new terms in physiography, saying they are not in good taste. This, being interpreted, means that his esthetic judgments are different from those of the inventors of the terms; and I find too that my own judgments have individual peculiarities. Such discordance is surely regrettable; except for the entertainment of his graceful fault-finding we should all be happier if we thrilled or shuddered in unison. But how can harmony be attained? I question the efficacy of ridicule, which tends to strengthen rather than remove prejudices. The late Colonel Ingersoll, who made great use of ridicule, held that it had no power to convince, but could only confirm; and it was a favorite saying that he 'came not to convert sinners, but to comfort the faithful.' Is there not some way in which reason may be brought to bear

on the sins of terminology? Is it not possible by discussion to discover or develop principles of scientific nomenclature the establishment of which may make the canons of good taste general instead of personal? I have a suspicion that there are heavy battalions of argument back of Dr. Eastman's skirmish line of assertion; and so venture a few suggestions in the hope of drawing them to the front.

One suggestion is that utility may have an important bearing on our sense of fitness, or even elegance; that there may be a deep philosophic basis for the maxim 'handsome is that handsome does.' Is there not a tendency gradually to adjust esthetic judgments into conformity with rational judgments? Is not expressiveness, after all, the most admirable and the most admired quality of literary composition? And will not the system of technical nomenclature best adapted to practical needs become in the end most grateful to the esthetic sense?

In deprecating the belief of physiographers 'in the penury of the English language, and unsuitability of Saxon epithets,' and in stigmatizing the introduction of 'alien' words, Dr. Eastman seems to oppose the introduction of foreign words for the purposes of scientific terminology. As a large majority of new terms in science are either direct importations or else rearrangements of foreign material, and as the somatic growth of all languages is largely from alien sources, this view is, to say the least, radical, and should not be accepted without good reason. Have I possibly misunderstood him? Or is there a substantial basis for such an opinion?

He objects vigorously to the use of the humanistic analogy, and here I follow him so far as to admit that it has sometimes been carried too far. That is a danger to which all figurative language is exposed, but it is the ordinary danger from excess, and I would not therefore condemn the use of figures. Purely as a matter of literary taste I like the humanistic analogy in Eastman's 'rabble of words recruited from the uttermost parts'; and from the same point of view I like also Davis's characterization of the stages of the topographic

cycle in terms of the cycle of human life. Eastman says the physiographic figure is founded on a 'false analogy,' but this I do not admit. The rhetorical quality of good analogy is close resemblance in some striking particular, coupled with difference in other respects; and that is precisely the relation between the topographic and human cycles. The stream valley resembles the human being in that from an early stage it evolves normally through a definite sequence of stages; and in most other respects the two differ.

But the characterization of topographic stages as 'youthful,' 'mature' and 'senile' is not a mere literary flower, the transitory decoration of a sentence; it is a part of technical terminology in continuous employment; and in that capacity its utility is of primary importance. In my judgment there are few groups of terms which serve better than does this group the purpose of concisely expressing an idea. Its strength inheres, first, in the aptness and completeness of the analogy, and, second, in the perfect familiarity of the group of facts to which the unfamiliar facts are likened. The physiographic stages have no precise limits, but grade one into another as parts of a continuous development; each one is so complex in its phenomena and so variable from individual to individual that sharp-cut definition is impossible; and in these respects they are strictly paralleled by the life stages. The aptness and the familiarity make the terms permanently mnemonic, so that the use of any one of them brings to mind not only the sequence, but relative position within the sequence. Davis's generalization had such merit that it would probably have found eventual appreciation, whatever its mode of expression, but I think that the promptness and universality of its acceptance and assimilation were in large measure due to the felicity of the associated terminology.

G. K. GILBERT.

WASHINGTON, D. C.

L'ANNÉE BIOLOGIQUE.

TO THE EDITOR OF SCIENCE: We learn that the annual *L'Année biologique* is in danger of being discontinued unless it receives addi-