

SCIENCE

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; R. H. THURSTON, Engineering; IRA REMSEN, Chemistry; J. LE CONTE, Geology; W. M. DAVIS, Physiography; O. C. MARSH, Paleontology; W. K. BROOKS, C. HART MERRIAM, Zoology; S. H. SCUDDER, Entomology; C. E. BESSEY, N. L. BRITON, Botany; HENRY F. OSBORN, General Biology; C. S. MINOT, Embryology, Histology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; J. MCKEEN CATTELL, Psychology; DANIEL G. BRINTON, J. W. POWELL, Anthropology.

FRIDAY, FEBRUARY 4, 1898.

CONTENTS:

The Biological Problems of To-day :—
Paleontology: PROFESSOR HENRY F. OSBORN.
Botany: PROFESSOR WILLIAM TRELEASE.
Anatomy: PROFESSOR BURT G. WILDER. *Psychology*: PROFESSOR J. MCKEEN CATTELL.
Physiology: PROFESSOR JACQUES LOEB. *Developmental Mechanics*: PROFESSOR T. H. MORGAN.
Morphogenesis: PROFESSOR CHARLES B. DAVENPORT.....145

Current Problems in Plant Morphology :—
Relationship between Pteridophytes and Gymnosperms: PROFESSOR CONWAY MACMILLAN.....161

Paleontological Notes: H. F. O.....164

Current Notes on Anthropology :—
Deformed Skulls from Guatemala; Native American Stringed Instruments: PROFESSOR D. G. BRINTON.....165

Notes on Inorganic Chemistry: J. L. H.....166

Scientific Notes and News :—
International Congress of Zoology; General.....167
University and Educational News.....172

Discussion and Correspondence :—
'Wild Neighbors.' ERNEST INGERSOLL, VERNON BAILEY.....172

Scientific Literature :—
La Cellule et les protozoaires: GARY N. CALKINS. *Sleep*: PROFESSOR G. T. W. PATRICK.....174

Societies and Academies :—
New York Academy of Sciences—Section of Biology: GARY N. CALKINS. *Section of Geology*: PROFESSOR RICHARD E. DODGE. *Sub-section of Anthropology and Psychology*: PROFESSOR CHARLES B. BLISS. *The Chemical Society of Washington*: DR. V. K. CHESNUT. *The Biological Society of Washington*: F. A. LUCAS. *Boston Society of Natural History*: SAMUEL HENSHAW.....176

New Books.....180

THE BIOLOGICAL PROBLEMS OF TO-DAY.*

Paleontological Problems. PROFESSOR HENRY F. OSBORN, Columbia University.

THE chief paleontological problems of the present day are involved in the phylogeny of the Mammalia, for upon this depend both Embryology and Comparative Anatomy, as well as Paleontology. The last decade has been one of a rapid succession of brilliant discoveries in South America and in southern Africa, and of a very great expansion of our knowledge of the North American fauna, together with some single discoveries of great importance, chief among which is the discovery of the foot structure of *Psittacotherium* by Wortman, leading to his exposition of the order Ganodontia as ancestral to the Edentata. Of great interest also is the hypothesis recently advanced by Matthew, that *Mixodectes*, of the Basal Eocene, is the ancestor of the Rodentia, instead of being connected with the Primates, as Cope supposed.

As regards the South American forms they are mainly important as revealing the existence of a new life center upon a continental scale; as tending to demonstrate a continental union between South America and Australia, and as exhibiting Marsupials which are more nearly allied to Placentals than any hitherto known. As Lydekker

*Discussion before the annual meeting of the American Society of Naturalists held at Ithaca, N. Y., December 28, 1897.

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N. Y.