

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; HENRY F. OSBORN, Paleontology; W. K. BROOKS, C. HART MERRIAM, Zoology; S. H. SCUDDER, Entomology; C. E. BESSEY, N. L. BRITTON, Botany; C. S. MINOT, Embryology, Histology; H. P. BOWDITCH, Physiology; J. S. BILLINGS, Hygiene; J. McKEEN CATTELL, Psychology; J. W. POWELL, Anthropology.

FRIDAY, SEPTEMBER 1, 1899.

CONTENTS:

<i>The American Association for the Advancement of Science:—</i>	
<i>The Columbus and New York Meetings.....</i>	265
<i>Address of Welcome: DR. W. O. THOMPSON...</i>	267
<i>Address of the President: DR. EDWARD ORTON.</i>	268
<i>Proceedings of the Association: PROFESSOR FREDERICK BEDELL</i>	272
<i>The Definition of the Element: PROFESSOR F. P. VENABLE</i>	274
<i>Engineering Education as a Preliminary Training for Scientific Research Work: PROFESSOR STORM BULL.....</i>	282
<i>Fauna and Flora of Puerto Rico: DR. MARK W. HARRINGTON.....</i>	286
<i>The Botanical Society of America: DR. ARTHUR HOLLICK.....</i>	288
<i>Scientific Books:—</i>	
<i>Ward's Naturalism and Agnosticism: PROFESSOR W. K. BROOKS. Ripleys on the Races of</i>	

<i>Europe: PROFESSOR FRANZ BOAS. Quarry Industry and Quarry Geology: F. J. H. M. The Depopulation of France: J. McKEEN CATTELL. General. Books Received.....</i>	288
<i>Scientific Journals and Articles</i>	297
<i>Discussion and Correspondence:—</i>	
<i>The Schedule for Psychology of the International Catalogue: PROFESSOR J. MARK BALDWIN, PROFESSOR J. McKEEN CATTELL. Pot-hole vs. Remolino: DR. GEORGE P. MERRILL.....</i>	297
<i>Notes on Physics:—</i>	
<i>The Transmission of Light through Absorbing Media; Spreading and Reversal of Spectral Lines; Lecture Experiments with the Wehnelt Interrupter; Velocity of Electric Waves in Air: W. S. F.....</i>	298
<i>Notes on Inorganic Chemistry: J. L. H.....</i>	299
<i>Return of the Wellmann Expedition.....</i>	300
<i>Scientific Notes and News.....</i>	300
<i>University and Educational News.....</i>	304

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

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE second half century in the history of the American Association was begun worthily last week at Columbus. It might have been feared that a meeting following the celebration of the fiftieth anniversary at Boston and held at some distance from the Atlantic seaboard would witness a small attendance and perhaps a lack of interest. This was by no means the case. The attendance was larger than at Detroit, Buffalo, Madison and Cleveland, and about the same as at Springfield, Indianapolis and Ann Arbor, while it was the unanimous opinion of those present that the meeting was in every respect profitable and enjoyable.

It seems evident that the Association has now entered upon a new era. In the course of fifty years the environment has altered greatly and for a little while there seemed to be some danger lest the Association might fail to adjust itself to the new condi-

importance. Only fifty years ago Malthusianism reigned. But applied science showed that the means of subsistence could be increased far more rapidly than the population. Now, in spite of the lowered death rate, the native population is actually decreasing in France and in New England, and is probably tending in this direction everywhere. The causes are not physiological, but psychological and social. M. Dumont blames the selfishness of democracies; he thinks that they are really aristocracies in which everyone wants to be an aristocrat and live in luxury. But it would probably be just as correct to blame our altruism. Our improved means of production, our improved hygiene, our charities and our sentimentalism have interfered with the struggle for existence, and fertility—physiological or psychological—has no longer a high selective value. It is doubtful whether M. Dumont will accomplish anything by preaching the patriotism and morality of large families. M. Bertillon's recent suggestion that an inheritance tax be imposed inversely proportional to the number of children is more reasonable, but it would only give a slight and temporary alleviation. The State would be more likely to succeed by the encouragement of early marriages, especially in the case of children from large families. But the whole problem is extremely difficult.

J. McKEEN CATTELL.

GENERAL.

W. SCHMIDT'S *Heron von Alexandria* (B. G. Teubner; 15 pp., 3 plates; .80 M.) is a review of the first volume of a new edition of Heron's works. The article contains 39 figures (partly conjectural) illustrating the many curious and ingenious automata designed by Heron for public amusement in gardens and theaters. The article gives a good idea of the subject and is interesting to the philologist as well as to the mechanic and physicist.

NUMBER VI. of the *Studies from the Yale Psychological Laboratory* has just been issued. It contains: 'A color-illusion' (with colored plate), by Professor G. T. Ladd; 'Researches in cross-education,' by Professor W. W. Davis, and 'Researches in practice and habit,' by Dr. W. Smythe Johnson. A number of copies has been

set aside for gratuitous distribution to persons who may be interested; a copy can be obtained by application to Dr. E. W. Scripture, New Haven, Conn.

BOOKS RECEIVED.

Proceedings of the U. S. National Museum. Published under the Direction of the Smithsonian Institution. Washington, Government Printing Office. 1899. Vol. xxi. Pp. xiii + 933.

Analyses électrolytiques. AD. MINET. Paris, Gauthier-Villars. 1899. Pp. 176.

Magnetical and Meteorological Observations made at the Government Observatory, Bombay, 1897, under the Direction of N. A. F. Moos. Bombay, Government Central Press. 1898. Pp. xviii + 12 tables. Price, 2s. 6d.

SCIENTIFIC JOURNALS AND ARTICLES.

Appletons' Popular Science Monthly for September opens with an article on the plague by Professor C. V. Vaughan, of the University of Michigan. In discussing recent legislation against the drink evil, Dr. Appleton Morgan argues that high licenses, damage laws and laws against adulteration are a sufficient remedy. Among the other articles is one on the milk supply of cities by Professor H. W. Conn; on the influence of the weather on crime by Dr. Edwin G. Dexter; on the survival of African music in America by Mrs. Jeanette R. Murphy, and a sketch of the zoologist Oscar Schmidt with a portrait as frontispiece.

DR. L. V. PIRSSON, professor of physical geography in Yale University, succeeds the late Professor O. C. Marsh on the editorial board of the *American Journal of Science*.

THE *Atlantic Monthly*, 'devoted to literature, science, art and politics,' but not in equal measure, has again changed editors. Mr. Walter H. Page has accepted a position in a New York publishing house and is succeeded by Professor Bliss Perry, of Princeton University.

DISCUSSION AND CORRESPONDENCE.

SCHEDULE FOR PSYCHOLOGY OF THE INTERNATIONAL CATALOGUE.

TO THE EDITOR OF SCIENCE: Professor Cattell is right in saying (SCIENCE, Aug. 11) that no scheme of classification for psychology