

SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.

EDITORIAL COMMITTEE: S. NEWCOMB, Mathematics; R. S. WOODWARD, Mechanics; E. C. PICKERING, Astronomy; T. C. MENDENHALL, Physics; A. H. THURSTON, Engineering; IRA REMSEN, Chemistry; CHARLES D. WALCOTT, Geology; W. M. DAVIS, Physiography; HENRY F. OSBOEN, 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; WILLIAM H. WELCH, Pathology; J. McKEEN CATTELL, Psychology; J. W. POWELL, Anthropology.

FRIDAY, JUNE 27, 1902.

THE UNIVERSITIES IN RELATION TO
RESEARCH.*

CONTENTS:

The Royal Society of Canada:—

The Universities in Relation to Research:
PRESIDENT JAMES LOUDON.....1001

Section of the Geological and Biological Sciences: DR. G. U. HAY.....1009

Section of the Mathematical, Physical and Chemical Sciences: PROFESSOR W. LASH MILLER1012

Problems in the Chemistry and Toxicology of Plant Substances: DR. V. K. CHESNUT....1016

Scientific Books:—

Reports on Plans for the Extermination of Mosquitoes on the North Shore of Long Island: PROFESSOR JOHN B. SMITH. *Cross and Bevan's Researches on Cellulose:* DR. A. F. WOODS.....1028

Scientific Journals and Articles.....1030

Societies and Academies:—

The American Association for the Advancement of Science. Biological Society of Washington: F. A. LUCAS. *The Academy of Science of St. Louis:* PROFESSOR WILLIAM TRELEASE.....1030

Discussion and Correspondence:—

The Explosive Force of Volcanoes: ROBT H. GORDON.....1033

Shorter Articles:—

Black Rain in North Carolina: PROFESSOR CHAS. BASKERVILLE and H. R. WELLER. *The Range of the Fox Snake:* MAX MORSE. 1034

A Proposed American Anthropologic Association: W J M.....1035

The American Association for the Advancement of Science.....1036

Scientific Notes and News.....1036

University and Educational News.....1040

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.

It is now many years since I came to the conclusion that the provision of adequate facilities for research is one of the prime necessities of university education in Canada; and it is with the object of accelerating the movement which has already begun in this direction that I have selected the relation of the universities to research as the topic of my remarks on this occasion.

It will perhaps be expedient for me at the outset to say that I propose to use the word research in its widest meaning, *i. e.*, as indicating those efforts of the human mind which result in the extension of knowledge, whether such efforts are exerted in the field of literature, of science or of art. It is a common mistake to apply the term research to what we somewhat erroneously denominate as 'science,' meaning thereby the physical and natural sciences. This limitation is comparatively modern, and science so defined is after all only a part of human knowledge.

The limits of research in its wider sense are coterminous with the knowable, and research itself is of very ancient date. The fund of knowledge accumulated even before the Christian era was enormous. This great fund, however, remained stationary,

* Address of the President of the Royal Society of Canada at the Toronto Meeting, May 27, 1902.