

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.

FRIDAY, SEPTEMBER 30, 1904.

CONTENTS:

<i>The Unity of Physical Science:</i> PROFESSOR R. S. WOODWARD.....	417
<i>Micro-organisms of Soil and Human Welfare:</i> PROFESSOR T. J. BURRILL.....	426
<i>Scientific Books:—</i>	
<i>Rendle on the Classification of Flowering Plants:</i> PROFESSOR CHARLES E. BESSEY....	434
<i>Discussion and Correspondence:—</i>	
<i>Currents of the North Pacific:</i> DR. WM. H. DALL	436
<i>Special Articles:—</i>	
<i>On the Pupation of Ants and the Feasibility of Establishing the Guatemalan Kelep or Cotton-Weevil Ant in the United States:</i> DR. WILLIAM MORTON WHEELER.....	437
<i>Current Notes on Meteorology:—</i>	
<i>General Circulation of the Atmosphere; Japanese Meteorological Observatory; Vi- enna Meteorological Observatory; Mountain Sickness:</i> PROFESSOR R. DEC. WARD.....	440
<i>Notes on Inorganic Chemistry:—</i>	
<i>Condition of Helium in Pitchblende; He- lium in Minerals from Greenland; Con- ductivity of Radium Solutions; Metals in Mineral Waters; Action of Metals on Fer- mentation; Biochemical Reactions for Tel- lurium and Selenium; Source of Normal Arsenic in the Body:</i> J. L. H.....	441
<i>Botany at the Cuban Experiment Station:</i> DR. F. S. EARLE.....	444
<i>The International Congress of Arts and Science</i>	445
<i>Scientific Notes and News.....</i>	446
<i>University and Educational News.....</i>	448

MSS. intended for publication and books, etc., intended
for review should be sent to the Editor of SCIENCE, Garri-
son-on-Hudson, N. Y.

THE UNITY OF PHYSICAL SCIENCE.*

THERE is a tradition, still tacitly sanc-
tioned even by men of science, that there
have been epochs when the more eminent
minds were able to compass the entire range
of knowledge. Amongst the vanishing
heroic figures of the past it seems possible,
indeed, to discern, here and there, a
Galileo, a Huygens, a Descartes, a Leibnitz,
a Newton, a Laplace or a Humbolt, each
capable, at least, of summing up with great
completeness the state of contemporary
knowledge. Traditions, however, are gen-
erally more or less mythical, and the myth
in this case seems to be in flat contradiction
with the fact that there never was such an
epoch, that the great masters of our dis-
tinguished predecessors were, after all,
much like the masters of to-day, simply the
leading specialists of their times. But
however this may be, if we grant the pos-
sibility of the requisite attainments, even
in a few individuals at any epoch, we shall
speedily conclude that there never was an
epoch so much in need of them as the im-
mediate present, when the divisional speak-
ers of this congress are called upon to ex-
plain the unities which pervade the ever-
widening and largely diverse fields of their
several domains.

The domain of physical science, concern-
ing which I have the honor to address you
to-day, presents peculiar and peculiarly
formidable difficulties in the way of a sum-
mary review. While we may not be dis-

* Address before the Division of Physical Sci-
ence, International Congress of Arts and Science,
St. Louis, September 19-25, 1904.