

SCIENCE

FRIDAY, DECEMBER 15, 1911

PRINCIPLES OF WATER-POWER
DEVELOPMENT¹

CONTENTS

<i>Principles of Water-power Development: DR. W J MCGEE</i>	813
<i>University Extension and the State University: PROFESSOR LOUIS E. REBER</i>	825
<i>An Opportunity for the Spirit of Research in Laboratory Instruction in Physics: PROFESSOR G. W. STEWART</i>	833
<i>A New Gas Volcano in Trinidad: ROBERT ANDERSON</i>	834
<i>The Future of the London Zoological Gardens</i>	835
<i>Scientific Notes and News</i>	836
<i>University and Educational News</i>	840
<i>Discussion and Correspondence:—</i>	
<i>“Genotype” and “Pure Line”: PROFESSOR H. S. JENNINGS. Mosquito Romance: KONOPF. How a Falling Cat turns over in the Air, How to throw a Curved Ball: PROFESSOR W. S. FRANKLIN. Seed Distribution by Surface Tension: HENRY S. CONARD. Models of Vorticella and Cyclops: PROFESSOR HENRY F. NACHTRIEB. Siphon Springs and Sink Holes: PROFESSOR H. F. CLELAND. The Rôle of Salts in the Preservation of Life: PROFESSOR JACQUES LOEB</i> .	841
<i>Scientific Books:—</i>	
<i>Observations and Investigations made at the Blue Hill Observatory: PROFESSOR R. DEC. WARD. Iddings’s Rock Minerals: DR. GEO. P. MERRILL. Alder and Hancock on British Nudibranchiate Mollusca; Antarctic Expedition of the Duke of Orleans: DR. WM. H. DALL. Newbigin’s Modern Geography: PROFESSOR RICHARD W. DODGE</i>	846
<i>The Convocation Week Meetings of Scientific Societies</i>	851

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

1. The development of water-power involves artificial regulation of streams. Proper regulation of running water for the several uses of water supply, irrigation, power and navigation can be effected only in the light of the physical relations, the relations in equity, and the more salient legal relations of water in streams.

PHYSICAL RELATIONS

2. The fresh water of the land is derived directly from rainfall (including snow) and indirectly through evaporation from the sea. The mean annual rainfall on mainland United States ranges from less than 5 to over 100 inches, averaging 30 inches; the quantity aggregates about 5,000,000,000 acre-feet.² The distribution is unequal; over the eastward two fifths of the country the mean is about 48 inches, over the median fifth some 30 inches, and over the westward two fifths about 12 inches.³

3. In humid lands the water of rains and melting snows tends to gather into streams, generally taking the shortest and easiest paths to the sea, while in arid lands

¹ Presented at a hearing of the National Waterways Commission, November 21, 1911.

² The acre-foot is a convenient unit not only because in common use throughout arid America, but because large enough to measure water in its national aspect without use of incomprehensibly large figures. It equals 43,560 cubic feet, 326,047 gallons, or 1,359.6 tons; it is something over a kilostere (equaling 1.2335 ks.), or cube of 10 meters.

³ “Soil Erosion,” Bureau of Soils Bulletin 71, 1911, p. 17.

Science

34 (885)

Science **34** (885), 813-852.

ARTICLE TOOLS

<http://science.sciencemag.org/content/34/885.citation>

PERMISSIONS

<http://www.sciencemag.org/help/reprints-and-permissions>

Use of this article is subject to the [Terms of Service](#)

Science (print ISSN 0036-8075; online ISSN 1095-9203) is published by the American Association for the Advancement of Science, 1200 New York Avenue NW, Washington, DC 20005. The title *Science* is a registered trademark of AAAS.

Copyright © 1911 The Authors, some rights reserved; exclusive licensee American Association for the Advancement of Science. No claim to original U.S. Government Works.