

# SCIENCE

VOL. 78

FRIDAY, NOVEMBER 17, 1933

No. 2029

*Flood and Erosion Control as Possible Unemployment Relief Measures*: DR. L. E. FREUDENTHAL ..... 445

*Research with a Hen*: PROFESSOR F. B. HUTT ..... 449

## Scientific Events:

*The Algernon Firth Pathological Institute at the University of Leeds; Junior Science Clubs of the American Institute; The Third Technical and Chemical International Congress of Agricultural Industries; The Cincinnati and Boston Meetings of the American Physical Society; The New Chief of the Bureau of Plant Industry; Recent Deaths* ... 452

*Scientific Notes and News* ..... 455

## Discussion:

*Paleospondylus; A Nematode Parasite in Myxinioids*: THE LATE DR. HOWARD AYERS. *The Thickness of the Glacial Deposits in Ohio*: PROFESSOR KARL VER STEEG. *Biological Isomerism of Water Made of Protium and Deuterium*: DR. ISAY BALINKIN. *The Spiral Habit*: DR. CHARLES SKEELE PALMER ..... 458

## Special Correspondence:

*Academic Freedom in Germany* ..... 460

## Scientific Apparatus and Laboratory Methods:

*A Sorting Stage for Foraminifera*: DR. BROOKS F. ELLIS. *Colorimetric Method for Determination of CO<sub>2</sub> in Gas Mixtures*: DR. PERRY W. WILSON ..... 461

## Special Articles:

*A Virus Encountered in the Study of Material from Cases of Encephalitis in the St. Louis and Kansas City Epidemics of 1933*: DR. LESLIE T. WEBSTER and GEORGE L. FITE. *The Existence of Non-chromosomal Influence in the Incidence of Mammary Tumors in Mice*: DR. C. C. LITTLE and Staff ..... 463

*Science News* ..... 6

SCIENCE: A Weekly Journal devoted to the Advancement of Science, edited by J. McKEEN CATTELL and published every Friday by

## THE SCIENCE PRESS

New York City: Grand Central Terminal

Lancaster, Pa.

Garrison, N. Y.

Annual Subscription, \$6.00

Single Copies, 15 Cts.

SCIENCE is the official organ of the American Association for the Advancement of Science. Information regarding membership in the Association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

## FLOOD AND EROSION CONTROL AS POSSIBLE UNEMPLOYMENT RELIEF MEASURES<sup>1</sup>

By L. E. FREUDENTHAL

CHAIRMAN, INSTITUTE OF IRRIGATION AGRICULTURE, AMERICAN FARM BUREAU FEDERATION,  
LAS CRUCES, N. M.

FLOOD control and erosion control are national problems because the extent and magnitude of losses caused and control measures involved are beyond the powers of the individual states to cope with successfully. That the water problem, of which these are part, is of national scope can be shown in various ways.

Many large cities are seriously affected by the problem of getting and maintaining domestic and industrial water supplies; Boston plans to tap a stream sixty miles away; New York brings part of its supply over 92 miles; the Hetch-Hetchy Reservoir, built at a cost of \$126,500,000, will furnish part of San Francisco's water supply from a distance of 200

miles; the water system of southern California will cost \$350,000,000.

Irrigation water is a commodity of enormous importance to 19 states west of the Mississippi River, involving an area of 19,547,544 acres and a value in 1930 of lands, building and machinery, reservoir and distributing systems of nearly \$6,000,000,000.

Water power is being utilized in practically every state. Twenty-six states, by 1931, scattered from Maine to California, have each developed over 100,000 horsepower.

The inland waterways of the country, exclusive of the Great Lakes and interior and intra-coastal canals, carried 130,000,000 short tons of freight in 1929. The War Department has spent tremendous sums in the deepening and widening of natural channels and in engineering works to make navigation possible during

<sup>1</sup>Address at the thirteenth annual meeting of the Southwestern Division of the American Association for the Advancement of Science, Las Cruces, New Mexico, May 1 to 4, 1933.

## School of Medicine and Dentistry University of Rochester

Medical School, Strong Memorial Hospital, School of Nursing and Out-Patient Department of the University of Rochester and the Municipal Hospital of the City of Rochester, all under one roof. Medical, Surgical, Obstetric, Pediatric, Dental, Contagious and Neurological patients admitted. Unusual opportunities for school and hospital cooperation in medical and graduate dental teaching.

### Admission

Medical candidates must have completed three years of college work with special requirements in chemistry, physics and biology. The entering class will not exceed 50, men and women being admitted on equal terms.

### Tuition

Charge for tuition will be \$400 per annum, payable in equal installments at the beginning of each semester.

For information address

### THE DEAN

School of Medicine and Dentistry  
Crittenden Boulevard, Rochester, N. Y.

## CAROTENE

Primary Vitamin A

( $C_{40}H_{56}$ )

For your vitamin A investigations, carotene (primary vitamin A) of known potency and definite purity is now available at minimum cost in the following products:

**Smaco Crystalline Carotene**

**Smaco Caritol (0.3% carotene in oil)**

\* \* \*

Carotene satisfies the minimal vitamin A requirements of the rat when fed at a level of one-half gamma (0.0000005 gram) daily. One gram of pure carotene, therefore, supplies two million Sherman units of vitamin A.

Price of crystalline carotene—\$5.00 a gram  
Special quotations for large quantities.

**100 milligram vacuum-packed tubes of carotene are available for demonstration purposes at 75c each.**

For further information, write  
to Department H.

**S.M.A. Corporation**

E. 46 & Prospect Avenue

Cleveland, Ohio



## THE WISTAR INSTITUTE BIBLIOGRAPHIC SERVICE

### ISSUES

### AUTHORS' ABSTRACTS

of all papers appearing in the journals listed below prior to publication of the articles in full. By this advance information biologists may familiarize themselves with *contemporary research* in a minimum of time.

**Advance Abstract Sheets** are issued twice a month, each sheet containing ten or more authors' abstracts. Subscription rate is \$3.00 per year.

**Bibliographic Service Cards**, following the Advance Abstract Sheets, also are issued twice a month. In addition to the authors' abstracts, the cards provide subject headings and complete bibliographic reference. The cards are convenient for filing and library records. Price, \$5.00 per year.

At regular intervals the authors' abstracts are assembled and published in book form with complete authors' and analytical subject indices. Price, \$5.00 per volume. Liberal discount to subscribers to the Bibliographic Service Cards.

JOURNAL OF MORPHOLOGY  
THE JOURNAL OF COMPARATIVE NEUROLOGY  
THE AMERICAN JOURNAL OF ANATOMY  
THE ANATOMICAL RECORD  
THE JOURNAL OF EXPERIMENTAL ZOOLOGY  
AMERICAN ANATOMICAL MEMOIRS  
AMERICAN JOURNAL OF PHYSICAL ANTHROPOLOGY  
JOURNAL OF CELLULAR AND COMPARATIVE PHYSIOLOGY  
PHYSIOLOGICAL ZOOLOGY (Chicago, Illinois)  
PUBLICATIONS OF THE BIOLOGICAL SURVEY OF THE MOUNT DESERT REGION

### The Wistar Institute of Anatomy and Biology

Philadelphia, Pa., U. S. A.

Second Edition: Revised and Enlarged

### THE RAT; DATA AND REFERENCE TABLES

Memoir No. 6: 458 pages. Bibliography: 2206 titles

HENRY H. DONALDSON

Published by THE WISTAR INSTITUTE

Philadelphia, Pa., U. S. A.

Price, \$5.00

### The Rat: A bibliography, 1924-1929.

L. E. DRAKE and W. T. HERON

1353 titles—with subject index.

Price—50 cents

Orders may be sent to

The Wistar Institute, 36th Street & Woodland Ave.,  
Philadelphia, Penna.



Best Results  
Assured with

**GOLD**

Non-Corrosive

**SEAL**

Non-Corrosive

MICROSCOPIC

**SLIDES AND COVER GLASSES**

Do Not Fog

At your dealer— or write (giving dealer's name) to

**CLAY-ADAMS COMPANY**

25 East 26th Street

NEW YORK