

SCIENCE

VOL. LVII MAY 11, 1923 No. 1480

<i>Dystrophic Morphology and its Significance:</i>	
PROFESSOR CLARENCE M. JACKSON.....	537
<i>A Research Career in Astronomy: DR. PAUL W. MERRILL.....</i>	
	546
<i>Scientific Events:</i>	
<i>Epidemic Diseases in Europe; Fellowships of the Rockefeller Foundation; Chemistry-Commerce Course at the University of Wisconsin; Standardization of Traffic Signal Colors; The Library of William James; The Swarthmore Chapter of Sigma Xi.....</i>	
	548
<i>Scientific Notes and News.....</i>	552
<i>University and Educational Notes.....</i>	556
<i>Discussion and Correspondence:</i>	
<i>Erythrodestrin in Maize: DR. J. H. KEMPTON; The Personal Equation and Reaction Times: PROFESSOR R. H. TUCKER, PROFESSOR KNIGHT DUNLAP; Aerobic? DR. ARTHUR W. DOX, DR. W. W. KEEN</i>	
	556
<i>Quotations:</i>	
<i>Park Conservation</i>	559
<i>Scientific Books:</i>	
<i>McKenzie's Exercise in Education and Medicine: PROFESSOR DUDLEY A. SARGENT</i>	
	560
<i>Special Articles:</i>	
<i>The Equations for Tortuosity in Thomson and Tait's Natural Philosophy: PROFESSOR CARL BARUS; The Soft X-rays—the M-Series for Iron: DR. GERHARD K. ROLLEFSON</i>	
	562
<i>American Chemical Society</i>	563

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, edited by J. McKeen Cattell and published every Friday by

THE SCIENCE PRESS

100 Liberty St., Utica, N. Y. Garrison, N. Y.
New York City: Grand Central Terminal

Annual Subscription, \$6.00.

Single Copies, 15 Cts.

Entered as second-class matter January 21, 1922, at the Post Office at Utica, N. Y., Under the Act of March 3, 1879.

DYSTROPHIC MORPHOLOGY AND ITS SIGNIFICANCE¹

AMONG the environmental factors which influence the structure and functions of the living organism, nutrition is of primary importance. One of the most fruitful methods of studying the process of nutrition is that of inanition. By withholding or decreasing the normal diet (total inanition) or merely one or more of the essential nutritional elements (partial inanition), we may observe effects which throw much light upon the normal process of nutrition from the standpoint of physiology, of pathology or of normal morphology. It is with the morphological aspect of the problem that we, as anatomists, are primarily concerned. We desire to learn the significance of the form and structure of the living organism and the factors concerned in its morphogenesis.

Experimental work by many investigators in this field during the past century has resulted in a large number of widely scattered data concerning the effects of inanition upon the growth and structure in numerous species. These effects of inanition have been extensively and carefully studied, not only in the vertebrates, but also among the lower organisms, the invertebrates and the plants. It may therefore be profitable to review briefly some of the principal results of inanition in these lower forms, partly because they are less well known to anatomists in general and partly because certain aspects of the problem are more clearly revealed in these simpler organisms. In general, only those phases will be considered which appear of most significance in comparison with the results in the higher animals, including man.

EFFECTS OF INANITION IN PLANTS

Plants in general, much more than animals, appear susceptible to modification by various

¹ Presidential address, American Association of Anatomists, Chicago, March 29, 1923.

Cornell University Medical College

First Avenue and Twenty-eighth St.
NEW YORK CITY

The first year of the course is also
offered at Ithaca, N. Y., subsequent
years, at New York City only.

For Information Address
THE SECRETARY

Johns Hopkins University Medical School

The Medical School is an Integral Part of the University
and is in the Closest Affiliation with the Johns Hopkins
Hospital.

ADMISSION

Candidates for admission must be graduates of approved colleges or scientific schools with at least two years' instruction, including laboratory work in chemistry, and one year each in physics and biology, together with evidence of a reading knowledge of French and German. Each class is limited to 75 students, men and women being admitted on the same terms. Except in unusual circumstances, applications for admission will not be considered after July 1st.

If vacancies occur, students from other institutions desiring advanced standing may be admitted to the second or third year provided they fulfill our requirements and present exceptional qualifications.

INSTRUCTION

The academic year begins the Tuesday nearest October 1, and closes the second Tuesday in June. The course of instruction occupies four years and especial emphasis is laid upon practical work in the laboratories, in the wards of the Hospital and in the dispensary.

TUITION

The charge for tuition is \$300 per annum, payable in three installments. There are no extra fees except for rental of microscope, certain expensive supplies, and laboratory breakage.

The annual announcement and application blanks may be obtained by addressing the

Dean of the Johns Hopkins Medical School,
Washington and Monument Sts., Baltimore, Md.

SUMMER WORK FOR GRADUATES IN MEDICINE

Beginning Monday, June 4th, and ending Saturday, July 14th, a course in medical diagnosis, including laboratory exercises in clinical pathology and demonstrations in pathological anatomy, will be offered. The course will be limited to thirty students, fee \$100. Applications should be made to the Dean's Office.

SCHOOL OF MEDICINE Western Reserve University of Cleveland, Ohio

HIGH STANDARD OF ADMISSION*
RESTRICTED CLASSES
THOROUGH INSTRUCTION
LARGE CLINICAL FACILITIES
HIGH STANDARD OF SCHOLARSHIP

*Admission confined to students
having academic degrees and to
Seniors in Absentia.

For information address:

THE REGISTRAR
1353 East 9th St., Cleveland, O.

YALE UNIVERSITY SCHOOL OF MEDICINE

Affiliated with the New Haven Hospital
and New Haven Dispensary

111TH SESSION

Reorganized on a full-time basis

Entrance Requirements: A minimum of three years (or its equivalent) of college including general biology, physics, general and organic chemistry, qualitative analysis, physical chemistry or laboratory physics, and either French or German.

ALL THE GENERAL FACILITIES
OF THE UNIVERSITY ARE AVAILABLE
TO MEDICAL STUDENTS

As the number admitted to each class is limited, applications must be made before July 1.

Dean, Yale University School of
Medicine

NEW HAVEN, CONN.

NEW YORK HOMOEOPATHIC MEDICAL COLLEGE AND FLOWER HOSPITAL

Entrance Requirements: A minimum of two years of college work, which must include certain specified courses.

Instruction: Four years' duration; broad in scope; adequate laboratory and clinical facilities. Active dispensary service.

For catalog address:

THE REGISTRAR

1183 Avenue A, New York City

BOSTON UNIVERSITY SCHOOL OF MEDICINE

ORGANIZED IN 1873

51st ANNUAL ANNOUNCEMENT

may be obtained by
application to

EDWARD E. ALLEN, Registrar

80 East Concord Street

BOSTON, MASSACHUSETTS

Marine Biological Laboratory Woods Hole, Mass.

INVESTIGATION

Entire Year

Facilities for research in Zoology, Embryology, Physiology, and Botany. Eighty-four private laboratories \$100 each for not over three months. Thirty tables are available for beginners in research who desire to work under the direction of members of the staff. The fee for such a table is \$50.00.

INSTRUCTION

July 3 to August
14, 1923

Courses of laboratory instruction with lectures are offered in Invertebrate Zoology, Protozoology, Embryology, Physiology and Morphology and Taxonomy of the Algae. Each course requires the full time of the student. Fee, \$75.00.

SUPPLY DEPARTMENT

Open the Entire
Year

Animals and plants, preserved, living, and in embryonic stages. Preserved material of all types of animals and of Algae, Fungi, Liverworts and Mosses furnished for classwork, or for the museum. Living material furnished in season as ordered. Microscopic slides in Zoology, Botany, Histology, Bacteriology. Catalogues of Zoological and Botanical material and Microscopic Slides sent on application. State which is desired. For catalogues and all information regarding material, address:

**GEO. M. GRAY,
Curator, Woods Hole, Mass.**

The annual announcement will be sent on application to The Director, Marine Biological Laboratory, Woods Hole, Mass.



"TURTOX" CATALOGS include

Aquaria	Microscope slides,
Bird glasses	(special for High
Charts	Schools)
Chemicals	Microtomes
Dissecting outfits	Models
Earthworms (special)	Museum Preparations
Entomological supplies	Preserved Material for Botany, Embryology and Zoology
Glassware	Insect Mounts
Lantern Slides	Skeletons
Life Histories	Syringes, Injecting
Microscopes	Vascula
Microscope slides, (General)	

and many other items.

Items in black type are our own special products. We are Manufacturers and Preparators of Biological Supplies.



Catalogues to Cover any or all of the above items will be sent on request.

GENERAL BIOLOGICAL SUPPLY HOUSE
1177 East 55th Street, Chicago, Ill.