

SCIENCE

VOL. 77

FRIDAY, MARCH 10, 1933

No. 1993

The Historical Development of Response Psychology: PROFESSOR HERBERT S. LANGFELD 243

Obituary:

John Belling. Recent Deaths 250

Scientific Events:

The Faculty of Medicine of Paris; Revision of the International Electrical Units; The Priestley Lectures at the Pennsylvania State College; The Sixteenth Session of the International Geological Congress 251

Scientific Notes and News 254

Discussion:

University Patents: DR. ALAN GREGG. *The Co-efficient of Correlation*: JOSEPH BERKSON. *Attempt to Confirm the Existence of a Filtrable Cycle of Bacteria by the Use of "K" Medium*: C. V. SEASTONE and MARY B. LAWRENCE. *Univalent Chromosomes of Tradescantia virginiana*: THE LATE DR. JOHN BELLING 257

Special Correspondence:

University Expedition to Study the Natives of Central Australia: PROFESSOR J. B. CLELAND 260

Scientific Apparatus and Laboratory Methods:

A Universal Dilatometer: R. HOLCOMB. *Permanent Slides for Use in Teaching the Howard Method*: J. D. WILDMAN 261

Special Articles:

The Distribution of American Men of Science in 1932: DR. J. McKEEN CATTELL 264

Science News 8

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.

THE HISTORICAL DEVELOPMENT OF RESPONSE PSYCHOLOGY¹

By Professor HERBERT S. LANGFELD

PRINCETON UNIVERSITY

THERE are, I venture to say, few psychologists of the present day so thoroughly mentalistic that they do not incorporate some form of motor response in their psychological system. Where they differ is in the importance they attach to such responses and in the relation they believe exists between response and consciousness. The prevailing, and what might be considered the conservative view, is that response follows perception or ideas either as an effect or as an accompaniment and that such conscious states are only affected by response in so far as such response stimulates proprioceptors, which in turn set up an afferent impulse. According to this view, then, consciousness lies, as it were, between the afferent and efferent impulses and consequently occurs before the response. In a previous paper I have described a view which makes response an essential factor of

consciousness.² It follows from this position that without response there would be no consciousness. No matter how many or how strong are the stimuli and the resulting afferent impulses, without the efferent impulses and specific response, either incipient or overt, an organism would have no awareness of a world; so far as that organism is concerned there would be no experience.

This view undoubtedly seems extreme to many scientists, but it does not in the least break with the past, nor is it new in any of its essential features. It is my purpose, then, in this paper to sketch briefly its historical development and to describe some of the more recent experimental findings which seem to support it. I should say, at the outset, that many of the authors of the past, especially those who wrote before the birth of experimental psychology, made but brief reference to such a view, and no one of them devel-

¹ Address of the vice-president and chairman of Section I—Psychology, American Association for the Advancement of Science, Atlantic City, December, 1932.

² H. S. Langfeld, "A Response Interpretation of Consciousness," *Psychol. Rev.*, 38: 87-108, 1931.

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 coöperation 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.

BOSTON UNIVERSITY SCHOOL OF MEDICINE

ORGANIZED IN 1873

ANNOUNCEMENT

may be obtained by application to

THE REGISTRAR

80 East Concord Street

Boston

Massachusetts

If you teach

Anatomy—Zoology—Botany

The following Catalogs will gladly be sent upon request.

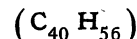
- ☐ No. 50—Brendel Botanical Models and Mounts.
Riker Mounts
- ☐ No. 51—Zoological Life Histories:
Embryological Mounts
Entomological Mounts
- ☐ No. 53—Skeletons, Skulls and other Bone Preparations:
Human and Zoological
- ☐ No. 54—Charts—Physiology, Human Anatomy—
Physical Education
- ☐ No. 54X—Charts—Zoological and Botanical
- ☐ No. 55—PROMI and PROMAR Microscopic Pro-
jection and Drawing Apparatus
- ☐ No. 56—Spalteholz Transparent Preparations
- ☐ No. 57—Models, Anatomical
- ☐ No. 58—Zoological Dissections, Plain and In-
jected
- ☐ No. 59—Microscopic Prepared Slides
- ☐ No. 61—Obstetrical Models, Phantoms, Charts,
etc.
- ☐ No. 62—New Biological Teaching Material
- ☐ Kappers Comparative Neurology Charts
- ☐ Strumpell and Jakob Neurological Charts

Visit our Display Rooms and Museum

CLAY-ADAMS COMPANY
25 East 26th Street, New York

CAROTENE

Primary Vitamin A



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