SCIENCE

Vol. LXI JUNE 26, 1925 No. 1591

CONTENTS

A Consideration of the Clinical and Didactic Methods	
of Teaching Medicine: Professor J. H. Musser	641
On Cytomorphosis in Bacteria: PROFESSOR A. T.	
Henrici	644
Three Letters bearing upon the Controversy over	
Evolution: Professor W. C. CURTIS	647
Scientific Events:	
The Museum of Scientific Instruments at Oxford	
University; The National Museum of Engineering	
and Industry; Fisheries Conservation Conference;	
The Lake Placid Meeting of the Metric Associa- tion: Field Work of the Victoria Memorial	
Museum; The Distinguished Service Professorship	
at the University of Chicago	648
Scientific Notes and News	
University and Educational Notes	
-	000
Discussion and Correspondence: The Excessive Politeness of American Botanists:	
Dr. D. H. Rose and Dr. Neil E. Stevens. On	
the Daylight Visibility of Stars from a Mine	
Shaft: CHARLES CLAYTON WYLIE. Twinning in a	
Mollusc: Dr. Richard P. Hall	656
Scientific Books:	
Baumgartner's Laboratory Manual of the Foetal	
Pig: Professor H. H. LANE	658
Scientific Apparatus and Laboratory Methods:	
A Simplified Method of Micro-combustion:	
CASIMIR FUNK and STANISLAS KON	659
Special Articles:	
Basin Range Structure at Jerome, Arizona: PRO-	
FESSOR F. L. RANSOME	659
The American Mathematical Society: Professor	000
ARNOLD DRESDEN	
Science News	x

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

THE SCIENCE PRESS

Lancaster, Pa. Garrison, N. Y. New York City: Grand Central Terminal.

Annual Subscription, \$6.00. Single Copies, 15 Cts. SCIENCE is the official organ of the American Association for the Advancement of Science. Information regard-

ing membership in the association may be secured from the office of the permanent secretary, in the Smithsonian Institution Building, Washington, D. C.

Entered as second-class matter July 18, 1923, at the Post Office at Lancaster, Pa., under the Act of March 8, 1879.

A CONSIDERATION OF THE CLINICAL AND DIDACTIC METHODS OF TEACHING MEDICINE

BEFORE undertaking to expatiate upon the main thesis of this essay, it might be well to explain briefly what is meant by the term "the teaching of medicine." Broadly speaking, what is understood by this term is the application of the science of biology, anatomy, physics and physiology, chemistry and biochemistry, pathology and bacteriology, to the study of disease as presented by the patient. It is the correlation of the sciences related to medicine, to the art of achieving a diagnosis of the morbid process from which the patient suffers and to the art of relieving the patient after the presenting symptoms and signs have been interpreted properly. Medicine as distinguished nowadays is further delineated by the adjective "internal," implying that the disease to be recognized and treated lies within the three larger cavities of the body, the cranium, thorax and abdomen, in contradistinction to some of the smaller offshoots from the main stem of medicine which are recognized as the specialties and which deal with lesions of the skin, the nerves or the special senses.

Having defined what is the usual conception of medicine in its broad sense, it should now be possible to trace the development that has taken place in the methods of teaching students in the undergraduate medical schools within the past few years. In the United States, a hundred years ago, the teaching was almost entirely individualistic. A student attached himself to a preceptor, who in theory at least was qualified to guide the neophyte through the intricacies of a medical training. On the one hand, such a method of training had the advantage of permitting the student to come into intimate contact with disease from the start of his training; on the other hand, the great bulk of the preceptors were little qualified to teach and to instruct. In the beginning of the past century such a method of training gradually was succeeded and replaced by the springing into being of more or less inadequate medical schools whose training of the student was almost entirely dogmatic and didactic and who depended for their very existence upon the fees that were collected from the students. Towards the end of the nineteenth century at Harvard, Johns Hopkins and the University of Pennsylvania, as Garrison relates, "medical teaching began to be true university teaching, in the sense of

P. BLAKISTON'S SON & CO., PUBLISHERS Practical Clinical Psychiatry

This illustrated volume has been prepared by well known psychiatrists who have accomplished much of permanent value in this special field. It gives definite procedures in the various cases presented, the non-essential and highly theoretical eliminated and emphasis on those points which constitute the real problems.

By EDWARD A. STRECKER, A.M., M.D.

Medical Director, Pennsylvania Hospital, Department for Mental and Nervous Diseases

and FRANKLIN G. EBAUGH, A.B., M.D.

Professor of Psychiatry, University of Colorado Foreword by CHARLES W. BURR, B.S., M.D.

Professor of Mental Diseases, University of Pennsylvania

Illustrated. Cloth \$4.00 Postpaid

Insanity and Law

A practical account of conditions with complete reference to Insanity Types; legal decisions on insanity questions; glossary of technical terms, etc.

> By H. DOUGLAS SINGER, M.D., M.R.C.P. University of Illinois,

and WILLIAM O. KROHN, M.D., PhD. Formerly Head, Department of Psychology, Western Reserve University

Imitation Leather Binding. \$6.00 Postpaid

Types of Mental Defectives

Types are graded, notes on heredity and environmental conditions are given and general intelligence, behaviour, education, etc., are given in each case.

> By MARTIN W. BARR, M.D. Penna. School for Feeble-Minded Children and E. F. MALONEY, A.B.,

Girard College, Philadelphia

Illustrated. Cloth \$3.00 Postpaid

Mentally Deficient Children

Their Treatment and Training

It presents salient peculiarities and ameliorative measures found most useful. By G. A. SHUTTLEWORTH, M.D. (Lancaster, Eng.), and W. A. POTTS, M.D. (Birmingham, Eng.)

Cloth \$3.25 Postpaid

Forensic Medicine

The author has had much experience in a very populous country with material of great diversity. The book is authoritative, splendidly illustrated and well worth a study. By SYDNEY SMITH, M.D., D.P.H.

Principal Medico-Legal Expert, Egyptian Government Service · 117 Illustrations. Cloth \$6.00 Postpaid

P. BLAKISTON'S SON & CO., Ľ PHILADELPHIA



FREAS OVEN No. 100

WHY DO SCIENTISTS USE FREAS OVENS?

The Freas Constant Temperature Electric Ovens, Incubators and Water Baths are found in all leading government and scientific institutions because scientists the world over realize that Freas Equipment has stood the test of time.

For over fifteen years Freas Ovens have been in service and are still giving today that same degree of satisfaction that they gave the first day they were placed in use.

Write for our bulletins.

THE THERMO ELECTRIC INSTRUMENT CO.

14 JOHNSON STREET,

NEWARK, N. J.



OVENS AND INCUBATORS

Cambridge Instruments

Cambridge Thread Recorders



These instruments are designed to give a series of records of the instantaneous deflections of a galvanometer pointer. The method adopted has the advantages of avoiding all errors due to pen friction and of enabling charts with rectangular coordinates to be employed.

In this recorder, which is entirely clock driven, a silk thread, impregnated with ink, passes between the pointer and the chart, and once or twice every minute the pointer is automatically depressed so that it forces the thread down on the chart, making a small, sharp dot.

The charts are approximately 33 centimeters long and 10 centimeters wide, one complete revolution of the drum taking place in 25 hours, or by means of a simple change-speed gear, in 2 hours 5 minutes.

A recorder with a coil of 17 ohms resistance will give full scale deflection for 1 millivolt, whilst a recorder with a 2,000 ohm coil will give full scale deflection for 5 microamperes. The period is approximately 20 seconds.

Particulars will be sent on request.

