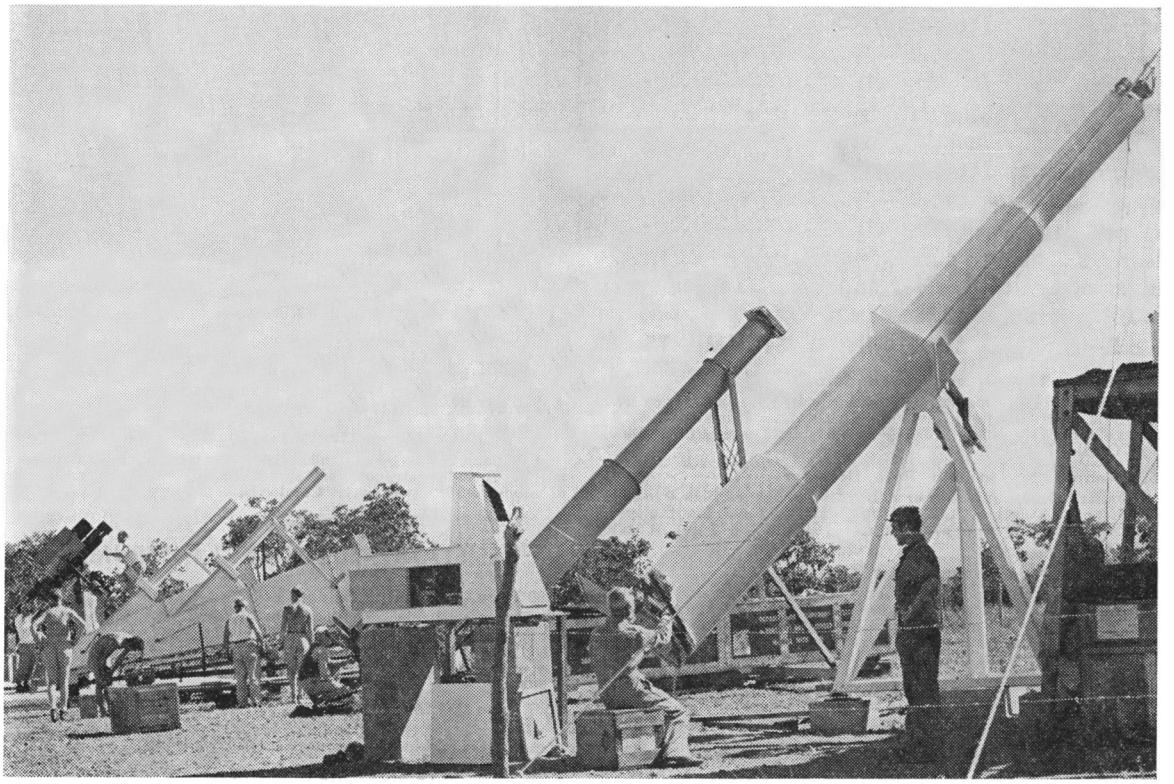
Vol. 105
No. 2737

Pages 607-626

June 13, 1947

Science

THE SCIENTISTS NEWSWEEKLY



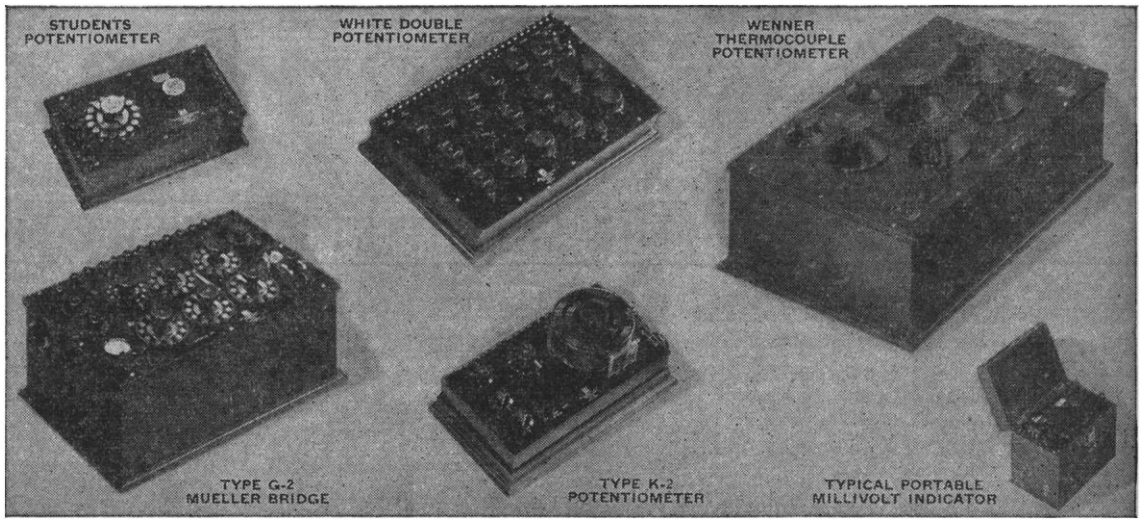
Telescopic cameras of the U. S. Army Air Forces-National Geographic Society Eclipse Expedition being prepared for use during the total eclipse of the sun at Bocayuva, Brazil, May 20. The camera at the right was devised by Dr. George Van Biesbroeck (seated), of the Yerkes Observatory, to determine the Einstein shift.

Published by the
AMERICAN
ASSOCIATION
FOR THE
ADVANCEMENT
OF SCIENCE

Chromosome Structure Under the Electron Microscope

J. T. Buchholz

A Quick Look At Some L&N Instruments For Measuring Lab Temperatures



Out of the varied lines of L&N temperature instruments, you can pick one for almost any lab temperature you want to measure. Every instrument has excellent convenience and dependability for the purpose it serves. Likewise, the limit of error is always adequate for the service—ranging from the degree suitable to general pupose and educational use, up to the highest attainable precision. Here are some typical L&N Temperature Indicators.

POTENTIAL-MEASURING INSTRUMENTS

7559 Wenner Thermocouple Potentiometer

For highly precise measurements of low voltages. Two ranges: high, 0 to 0.11111 volt in steps of 1 μv; low, 0 to 0.011111 volt in steps of 0.1 μv. Limits of error: high range, $\pm(0.01\% + 0.5\ \mu v)$; low range, $\pm(0.01\% + 0.1\ \mu v)$. Catalog E-33A(1).

7558 Wenner Standardizing Potentiometer

Similar to 7559, but for higher voltages. Two ranges: high, 0 to 1.9111 volts in steps of 10 μv; low, 0 to 0.19111 volt in steps of 1 μv. Limits of error: high range, $\pm(0.01\% + 5\ \mu v)$; low range, $\pm(0.01\% + 1\ \mu v)$. Catalog E-33A(1).

7620 White Single Potentiometer

For precision temperature measurements in calorimetry and other low-voltage applications. Range: 0 to 0.01 volt in steps of 1 μv. Limit of error: $\pm(0.02\% + 0.5\ \mu v)$. *7622* similar, but has two dials for quickly measuring two temperatures which are appreciably different and both changing rapidly. Catalog E-33A(2).

7621 White Single Potentiometer

Same purpose as 7620. Range: 0 to 0.1 volt in steps of 10 μv. Limit of error: $\pm(0.02\% + 1\ \mu v)$. *7623* similar, but has two dials. Catalog E-33A(2).

7552 Type K-2 Potentiometer

Triple-range precision potentiometer for general lab use. Ranges: high, 0 to 1.61 v; medium, 0 to 0.161 v; low, 0 to 0.0161 v. Limits of error: high range, $\pm$0.1 to 0.01%; medium range, $\pm$0.1 to 0.015%; low range, $\pm$0.1 to 0.025%. Catalog E-50B(3).

7651 Students' Potentiometer

Simplified, moderate-precision, for educational and general lab use. Two ranges: high, 0 to 1.6 volts in steps of 1 mv; low, 0 to 0.016 volt in steps of 10 mv. Limit of error: dial resistors and total slidewire resistance alike within $\pm$0.04%; slidewire uniform within $\pm$0.5 division. Catalog E-50B(1).

Portable Volt, Millivolt Indicators

Available in many single- and double-range types, for all usual measurements. Include galvanometer, standard cell and battery. Smallest divisions from 0.1 mv to 1 mv. Catalog E.

RESISTANCE-MEASURING INSTRUMENTS

8069 Type G-2 Mueller Bridge

For extremely high-precision temperature measurements by the electrical resistance thermometer method. Range: 0 to 111.111 ohms in steps of 0.0001 ohm. Limit of error: subject to conditions in Catalog E-33C(1), a few hundred-thousandths of an ohm, or a few parts per million, whichever is larger.

8067 Type G-1 Mueller Bridge

Range: 0 to 81.111 ohms in steps of 0.0001 ohm. Limit of error: $\pm$0.02% or $\pm$0.0001 ohm, whichever is greater. Catalog E-33C(1).

8016 Portable Temperature Indicator

Primarily for body-temperature measurements. Range: 90 to 110 F. Limit of error: of indicator only, $\pm$0.1 F; with thermometer, $\pm$0.3 F. Catalog E.

Any of the above catalogs sent free on request. Write to Leeds & Northrup Company, 4926 Stenton Ave., Philadelphia 44, Pa.

MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

LEEDS & NORTHRUP CO.

Jrl. Ad E-33(1)

Of Interest To All Concerned With the Medical and Allied Sciences

100-YEAR HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

Now the complete history of the American Medical Association is told dramatically and with authority, by Dr. Morris Fishbein and others.

What part did the A.M.A. play in suppressing the patent medicine craze; in opposing the antivivisectionists; in taking the quackery out of medical advertising? What are the reasons for the phenomenal growth of the A.M.A. How did it fight the many libel suits against it and its agents? These and many other interesting topics are presented. In addition, there are the Biographies of the Presidents of the A.M.A. by Dr. Walter L. Bierring; useful reference sections on the Councils, Bureaus and Publications of the A.M.A., etc.

The material presented has been drawn from the Official Transactions of the Association; the files of the Journal A.M.A.; proceedings of the House of Delegates; Minutes of the Board of Trustees and other authoritative sources.

By MORRIS FISHBEIN, M.D., With Biographies of the Presidents of the American Medical Association, by Walter L. Bierring, M.D.; and with Histories of the Publications, The Councils, the Bureaus and Other Official Bodies. 1229 pages, 6½″ × 9½″, with more than 200 unusual illustrations. ***Just Ready***

NEW (1947) MAYO CLINIC VOLUME

The *New (1947)* Collected Papers of the Mayo Clinic and Mayo Foundation is the 38th annual volume eminating from these great centers of medical science. To the medical profession, and to all others concerned with the teaching and study of subjects related to medicine, this book serves as a unique reference volume on the latest advances and developments that have taken place at the Mayo Clinic and Mayo Foundation during the past year.

Diseases of the entire body are discussed, being arranged according to the systems in which they are manifest. A number of miscellaneous articles are also included to make this a work of great scope and broad interest. The New (1947) Volume is of special value because of the significant progress being made in so many fields of medicine and surgery.

As usual, the edition is strictly limited and it is never reprinted. Prompt placing of orders is therefore urged.

By THE STAFF OF THE MAYO CLINIC, Rochester, Minnesota, and The Mayo Foundaton, University of Minnesota. About 890 pages, 6″ × 9″, illustrated. ***Ready Soon***

W. B. Saunders COMPANY

West Washington Square **Philadelphia 5**

Editor: Willard L. Valentine (*deceased*)
Assistant Editor Mildred Atwood
Business Manager Theo. J. Christensen
Publications Committee
Roger Adams, John E. Flynn, Kirtley F. Mather, Walter R. Miles, W. J. Robbins, Malcolm H. Soule

Science

Vol. 105 No. 2737 Friday, June 13, 1947

CONTENTS

(Cover photo by the National Geographic Society.)

Science a weekly journal, is published each Friday by the American Association for the Advancement of Science at Mt. Royal & Guilford Avenues, Baltimore 2, Maryland. Founded in 1880, it has been since 1900 the official publication of the AAAS. Editorial, Advertising, and Circulation Offices, 1515 Massachusetts Avenue, N.W., Washington 5, D. C. Telephone, EXecutive 6060 or 6061. Cable address SCIMAG, Washington, D. C.

Articles offered for publication should be sent to the Editor, 1515 Massachusetts Avenue, N.W., Washington 5, D. C.

Membership correspondence for the AAAS should be sent to the Administrative Secretary, 1515 Massachusetts Avenue, N.W., Washington 5, D. C.

Change of address. Four weeks notice required for change of address. When ordering a change, please furnish an address stencil label from a recent issue. Address changes can be made only if the old as well as the new address is supplied.

Annual subscription, $7.50; single copies, $.25; foreign postage (outside the Pan-American Union), $1.00 extra, Canadian postage, $.50 extra. Remittances and orders for subscriptions and for single copies, notices of changes of address, and claims for missing numbers should be sent to the Circulation Department.

Entered as second-class matter January 17, 1947, at the postoffice at Baltimore, Maryland, under the act of March 3, 1879.