



see overleaf

Paper Chromatography

Paper chromatography is a method for the separation and identification of minute amounts of chemical substances. To carry out a separation, the scientist places the mixture, for example, a biological extract, near the edge of a piece of filter paper and dips the edge into a suitable solvent. The solvent gradually passes over the mixture and carries the individual components of the mixture, depending on their solubility, a certain distance on the paper. Complicated mixtures are thereby separated into individual components and their identity can be established by comparison, under similar conditions, with known chemical compounds. The position of colorless substances on the paper may be revealed by the use of a suitable color reagent.

Paper chromatography has proved to be of tremendous value in solving a large variety of research problems. Amino acids, sugars, vitamins, and hormones have been identified and measured in various biological extracts. At the National Institutes of Health, methods based on paper chromatography have been developed to permit the identification and measurement of minute quantities of steroids, including the steroid hormones.

Steroids of pharmacological interest, for example, a raw material for the synthesis of cortisone, occur in various plants and especially in the seeds of certain rare African plants. An expedition, sponsored by the National Institutes of Health and the Department of Agriculture, collected seed specimens in Africa. The seeds were analyzed by scientists using the paper chromatography technique at the National Institutes of Health. Those seeds which showed promise for pharmaceutical purposes are being used by the Department of Agriculture for cultivation in the United States.

frontispiece

A technician of the National Institute of Arthritis and Metabolic Diseases, Public Health Service, sprays a chromatogram with reagent as a step in the process of paper chromatography.

PUBLIC HEALTH REPORTS



G. ST. J. PERROTT
Chief, Division of Public Health Methods
Managing Director

ARTHUR P. MILLER
Acting Executive Editor

TAFT S. FEIMAN
Managing Editor

WINONA E. CARSON
Asst. Managing Editor

BOARD OF EDITORS

EDWARD G. MCGAVRAN, M.D., M.P.H., *Chairman*
Chapel Hill

GAYLORD W. ANDERSON, M.D., Dr.P.H.
Minneapolis

LLOYD FLORIO, M.D., Dr.P.H.
Denver

JUSTIN M. ANDREWS, Sc.D., LL.D.
Washington

RUTH FREEMAN, R.N., Ed.D.
Baltimore

HALBERT L. DUNN, M.D., Ph.D.
Washington

VICTOR H. HAAS, M.D.
Bethesda

MARTHA M. ELIOT, M.D., Sc.D.
Washington

BASIL C. MACLEAN, M.D., M.P.H.
New York City

HAROLD M. ERICKSON, M.D., M.P.H.
Portland, Oreg.

SEWARD E. MILLER, M.D.
Washington

M. ALLEN POND, M.P.H.
Washington

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

OVETA CULP HOBBY, *Secretary*

PUBLIC HEALTH SERVICE

LEONARD A. SCHEELE, *Surgeon General*

PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
SCIENTIFIC REPORTS BR, CHIEF
1 52 BUILDING #1
569 BETHESDA 14 MD

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE
WASHINGTON 25, D. C.

PENALTY FOR PRIVATE USE TO AVOID
PAYMENT OF POSTAGE, \$300
(GPO)

OFFICIAL BUSINESS

If you do not desire to continue receiving this publication, please CHECK HERE ;
tear off this label and return it to the above address. Your name will then be
promptly removed from the appropriate mailing list.

PHR