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Address of the Chairman of the Social Science Research Council: DR. EDWIN B. WILSON 169

The American Institute of Physics: DR. HENRY A. BARTON and DR. GEORGE H. BURNHAM 172

Obituary:

Dr. Howard Atwood Kelly: DR. LEWELLYS F. BARKER. *Recent Deaths* 176

Scientific Events:

Pure Mathematics in Russia; New and Rare Instruments; Meteorological Training for the Army Air Forces; Philadelphia Meeting of the Industrial Research Institute; The American Institute of Electrical Engineers; Award of the Willard Gibbs Medal 178

Scientific Notes and News 180

Discussion:

What Price Glory? DR. WARREN T. VAUGHAN. *A Need for More Uniform Usage of Words of Indefinite Meaning:* FERDINAND JEHL. *Avian Malaria:* DR. T. P. NASH 183

Scientific Books:

Differential Fertility: DR. WARREN S. THOMPSON 185

Special Articles:

Purification and Properties of the Second Antibacterial Substance Produced by Penicillium Notatum: DR. WALTER KOCHOLATY. *Some Chemical and Pharmacological Observations on "Low Nicotine" Tobacco:* DR. H. B. HAAG and DR. P. S. LARSON 186

Scientific Apparatus and Laboratory Methods:

Dry Stripped Replicas for the Electron Microscope: VINCENT J. SCHAEFER 188

Science News 10

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ADDRESS OF THE CHAIRMAN OF THE SOCIAL SCIENCE RESEARCH COUNCIL¹

By Dr. EDWIN B. WILSON
HARVARD SCHOOL OF PUBLIC HEALTH

I AM very glad to greet the guests and members of the council assembling for our annual meeting in this historic building of the oldest, broadest and most distinguished learned society of our country and I have to express to the American Philosophical Society the thanks of the council for permitting us to gather here.

It was fifteen years ago come New Year's that the American Statistical Association elected me to the council. I have attended most of the fifteen annual and spring meetings since that time with pleasure and profit, and have missed the few others only for the most compelling reasons. There are some few connected with the council who have a longer record.

My experience over these fifteen years has con-

vinced me that our constituent societies are often quite ignorant of the aims and the opportunities of the council whose regular members they elect. Some of the societies seem at times to think they are sending us representatives whose duty it is to maintain close contact between us and their societies for their benefit. This certainly is not the case. It is not necessary and indeed it is scarcely possible that the council should be of any direct and immediate use to the individual constituent societies or to their individual disciplines. Those elected by the societies are here with the opportunity of viewing social science as a whole and of determining how best to serve it.

In the past fifteen years with which I am acquainted and in the preceding five of which I have heard the council has tried to help in a number of ways. When

¹ Given at the opening session of the annual meeting, held in Philadelphia, September 17, 1942.

and blood pressure determinations in the dog showed that the toxic and vasopressor effects of the smoke from this tobacco was proportional to the amount of nicotine present and relatively independent of the normicotine content of the tobacco. On man the smoke from these low nicotine cigarettes produced very much less pronounced effects on blood pressure and pulse rate than that produced by ordinary cigar-

ettes. These results indicate that this type of tobacco is sufficiently low in nicotine to make it practically deserving of much further study.

H. B. HAAG
P. S. LARSON

DEPARTMENT OF PHARMACOLOGY,
MEDICAL COLLEGE OF VIRGINIA,
RICHMOND

SCIENTIFIC APPARATUS AND LABORATORY METHODS

DRY STRIPPED REPLICAS FOR THE ELECTRON MICROSCOPE

THE use of the electron microscope to study the fine structure of the surface of etched metals or other materials has been shown to be a fairly simple process^{1,2} when the direct replica method is used. A still simpler process than those previously described for removing the replica film has now been devised by the writer. It lends itself to a study of practically any flat surface which is free of re-entrant angles or other structure that might prevent the removal of the replica film. The method should be particularly adaptable in permitting the microscopist to make a comparison of identical structures as seen in the optical and electron microscopes.

The replica film of polyvinyl formal dissolved in dioxane is formed on the specimen in the manner previously described. A standard electron microscope, 200 mesh nickelscreen, is then centered above the region to be studied. This positioning process may be carried out with a jig which slips over the objective of the light microscope used for obtaining a photomicrograph. With the screen in place a bit of moist air is applied to the coated surface and immediately a piece of scotch tape is pressed into light contact with the screen and the surrounding film. Holding the scotch tape against the specimen, on one side of the positioned screen, the tape is held rigidly and lifted away from the surface. When this is done the replica leaves the specimen and will be found in contact with the under surface of the screen ready for mounting in the specimen holder of the electron microscope.

The scotch tape is easily removed from the mounting screen by placing the tape holding the screen in contact with a flat surface. The tape is then turned through 180°, a finger placed on the sticky surface and the tape slowly peeled from the surface until the edge of the screen becomes visible. A razor blade or similar thin flat object held against the screen prevents it from becoming bent as the tape is peeled away from it.

The entire process of replica formation, removal

and mounting may be carried out in less than two minutes. Perhaps the most attractive feature of the process described is the fact that the specimen is not injured in any way. For example, from a specimen of 1.1 C Steel (used for developing the technique) at least fifty replicas have been obtained without injuring the surface in any way.

In preparing surfaces of metals for electronographic study it is important that the distance in elevation between high and low spots on the sample does not exceed 400–600 ÅU. To obtain this property and still have a uniform metallographic etch it was found that the standard solutions (such as Nital) should be diluted from four to ten fold, and applied with a swab.

Some evidence has been noted which indicates that conditioning metal surfaces with surface active molecules such as tricresyl phosphate and oleic acid greatly facilitates the removal of replicas. Not more than a monolayer is needed for this purpose. Excess molecules and other contaminations are readily removed by coating the specimen with a film three or four times thicker than that used for making replicas and peeling it off with scotch tape. This thicker film also affords excellent protection to the prepared surface against corroding vapors and moisture.

VINCENT J. SCHAEFER

GENERAL ELECTRIC COMPANY,
SCHENECTADY, N. Y.

BOOKS RECEIVED

- ALBEE, FRED H. *A Surgeon's Fight to Rebuild Men. The Autobiography of Dr. Fred H. Albee.* Pp. 349. E. P. Dutton. \$3.50.
- CLARK, JOHN A., FREDERICK RUSSELL GORTON, FRANCIS W. SEARS and MAJOR FRANCIS C. CROTTY. *Fundamentals of Machines.* Illustrated. Pp. xi + 300. Houghton Mifflin Company. \$1.24.
- COTTON, C. A. *Climatic Accidents in Landscape-Making.* Illustrated. Pp. xx + 343. Whitcombe & Tombs, Ltd. 30 Shillings.
- FRISON, T. H. *Studies of North American Plecoptera.* Illustrated. Pp. 120. Illinois Natural History Survey.
- MARCUS, ABRAHAM and WILLIAM MARCUS. *Elements of Radio.* Illustrated. Pp. xiii + 699. Prentice-Hall. \$4.00.
- SWIETOSLAWSKI, W. *Coke Formation Process and Physico-Chemical Properties of Coals.* Illustrated. Pp. viii + 145. Herald Square Press.
- TEHON, LEO R. *Fieldbook of Native Illinois Shrubs.* Illustrated. Pp. 307. Illinois Natural History Survey.

¹ V. J. Schaefer and D. Harker, *Jour. App. Phys.*, 13: 427, July, 1942.

² V. J. Schaefer, *Phys. Rev.*, 62: 495, 1942.

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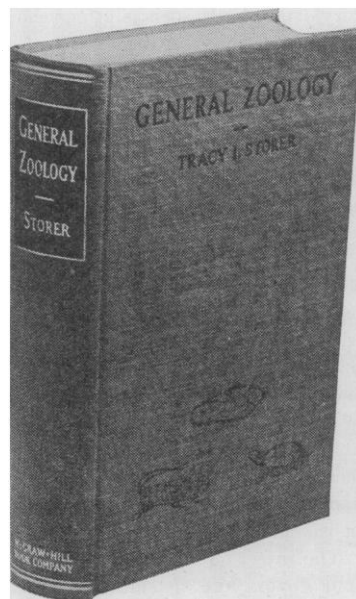
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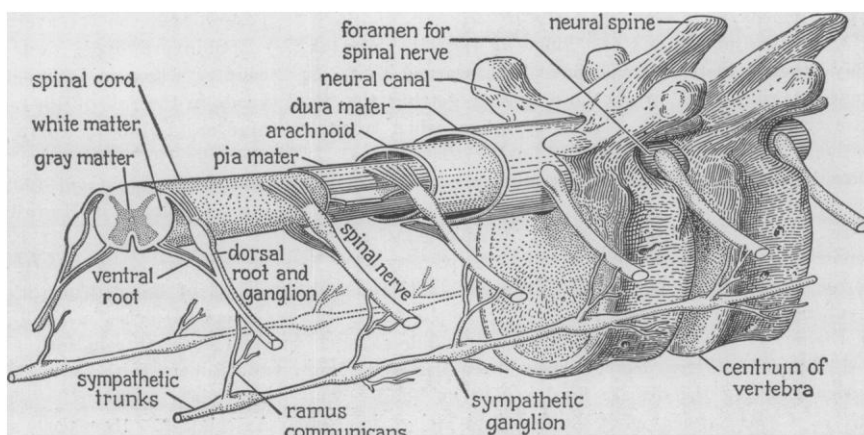
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