tion from two of four human stools tested by the method described.

ROSALIE J. SILVERBERG
DEPARTMENT OF PEDIATRICS,
STANFORD UNIVERSITY SCHOOL OF MEDICINE,
SAN FRANCISCO

NEW PROTECTION FOR FIELD DATA

MAPPING of vegetational types on the U. S. Fish and Wildlife Service's Patuxent Research Refuge, Bowie, Maryland, led to a search for a protective covering for field maps. The problem was solved by a commercially available acetate sheeting treated with a pressure sensitive adhesive. Developed as an easily applied protection for maps for the Army and Navy and commended after ample trial overseas, this material promises to be a boon to scientists who have long suffered with muddy maps and dog-eared data sheets. Easily peeled from the backing attached in manufacture, the film is simply smoothed with thumbnail pressure onto aerial photos, topographic or vegetational maps, relative humidity tables and other data subjected to repeated use, furnishing a transparent and waterproof covering.

While two types are available, clear and matte, the matte variety is quite transparent enough for most purposes and has the great advantage that it can be marked with pencil, crayon or ink (in washes as well as lines). Such marks adhere well but can be easily erased without damaging the surface. In this way, numerous changes can be made without defacing the original beneath. At the Patuxent Research Refuge, the matte finish was found excellent for covering aerial photos, eliminating the glare from glossy prints without appreciably obscuring the details. When these photos were used for mapping vegetation, probable cover-types were speedily delineated in the laboratory, using an ordinary pencil. Then a relatively small amount of field work, using a red lead, sufficed to confirm or amend the boundaries and to delimit sub-types indistinguishable on the photographs.

When one area is under continuous scientific study, as at the Patuxent Research Refuge, wildlife census data or other observations can be recorded in the field on a map thus protected. After being copied and/or tabulated, the data can be erased leaving the map ready for use again.

Brief preliminary tests indicate many other uses for this material. For instance, the clear variety cut in strips can be used as a herbarium mounting tape in conjunction with the usual type of tape. Not requiring moistening and being transparent, it seems admirable for securing the more delicate plant parts. Its initial adhesion is not adequate to hold the more refractory parts, but where it does stick, it is claimed to form a permanent bond with the paper. Also, in the classroom, the sheeting can be used as a protective covering for illustrative material handed around for student use.

JOHN W. BRAINERD,
Collaborator

U. S. FISH AND WILDLIFE SERVICE,
PATUXENT RESEARCH REFUGE,
BOWIE, MD.

DISCUSSION

THE BUSH REPORT AND SENATE BILLS

IN compliance with a request from President Roosevelt, dated November 17, 1944, Dr. Vannevar Bush undertook to advise the Government how science might be organized to serve our country in future days of peace as effectively as it was serving our armed forces during the war. In particular, the President inquired (a) what could be done, consistent with military security, to make known to the world the contributions to scientific knowledge during the war; (b) how a program might be organized to continue the scientific advances that had been made in the fields of medicine; (c) what the Government might at once and in the future do to aid research by public and private organizations; and (d) whether an effective program might be set up for discovering and developing scientific talent in American youth.

Dr. Bush appointed large committees of distinguished men to study and report on the four principal subjects enumerated above. After months of labor these committees presented comprehensive reports, on the basis of which Dr. Bush made his report in compliance with the President's request. The report is developed under six chapter headings as follows: I, Introduction, a statement of the reasons that progress in science is essential and the relations of the Government to it; II, The War Against Disease; III, Science and the Public Welfare; IV, Renewal of Scientific Talent; V, A Problem of Scientific Reconversion; and VI, The Means to the End.

Under Chapter VI the report proposes a "National Research Foundation," including its purposes, its membership, its organization, its functions and duties, its patent policy, provisions for special authority, and its budget for five years. In short, it is a report that states a general problem of great importance, dissects it into its major components, sets up principles and outlines machinery for its administration, and proposes a financial budget, all fortified by comprehensive analyses and supporting data by very competent committees.

In spite of the excellence of the Bush Report, spe-

cialists in the fields of the biological sciences and of the social and economic sciences, not to mention the humanities, on reading the recommendations would be conscious of serious gaps in it. They would find no references to biological sciences, except as they may be involved in medicine, and no direct recognition of the possible importance of social and economic sciences. The nearest to such recognition is the oblique statement, "It is our hope and belief that the provision of funds for the natural sciences would, in some measure, free university funds for use in the other fields." This statement echoes faintly, too, the pressure from many universities and colleges for support from the Federal Government, and indeed violates some of the principles enunciated earlier in the report.

The Bush Report is probably at least partly responsible for four bills relating to governmental support of science which have been introduced in the United States Senate and referred to the Subcommittee on War Mobilization of the Committee on Military Affairs, of which Senator Elbert D. Thomas, of Utah, is chairman; and for one bill introduced in and passed by the House of Representatives but not acted on by the Senate. These bills are: S. 825, sponsored by Senator Byrd; S. 1248, sponsored by Senator Fulbright; S. 1285, sponsored by Senator Magnuson; and S. 1297, sponsored by Senators Kilgore, Johnson and Pepper. The House bill was sponsored by Congressman May. By arrangement among the sponsors these bills will be considered at joint hearings with the hope that out of them a new bill may be drawn that will be acceptable to all who are interested.

It is at the hearings that scientists may most effectively present their views. The sponsors of the bills desire the views of scientists so that the final result shall be as advantageous for the country as possible. Unfortunately the pressures upon members of Congress are so great that they can not be expected to attend all or any considerable part of the hearings. It follows that all presentations of data and conclusions should be in writing, even if those making them appear in person.

According to present schedule, hearings of representatives in the fields of the biological sciences will be on October 24; in the fields of the physical sciences, on October 25 and 26; in the fields of the social sciences, on October 29; and in the fields of engineering, on October 30.

If it is impossible for any of the affiliated societies to send representatives to present their written statements, the Association will undertake to get them properly before the Senate Committee and into the records of the hearings.

F. R. MOULTON

PROPOSED UNIT FOR HIGH VACUUM

IN a recent letter[1] Dr. Paul E. Klopsteg has expressed himself in favor of adopting the suggestion made by F. H. Townsend,[2] of a unit for high vacuum which like the unit of sound intensity is based on a logarithmic scale. If we denote the pressure in *mm* of mercury by P, then the "units of vacuum" (u) are given by the relation

$$u = -10 \log P$$

Thus 1×10^{-3} mm = 30 u

2×10^{-5} mm = 47 u.

It should be observed that the reason for adopting a logarithmic scale in the case of sound intensity is based on the validity of Fechner's law. On the other hand, in the case of gases, it is extremely convenient to measure pressures by a direct-reading gauge, such as the McLeod type. Furthermore, at low pressures most properties of gases vary practically linearly with the pressure, so that it is possible to extrapolate to very low pressures by means of gauges calibrated at the higher range of pressure by means of a McLeod gauge.

The writer can see no advantage whatever that would be gained by adoption of the suggested "unit of vacuum." Rather, it would be a source of confusion in both laboratory and factory work, and would certainly be of no help in the application of any equations derived on the basis of the kinetic theory. We have a very logical unit of pressure, the dyne per cm^2 (1 microbar). Let us stick to c.g.s. units as much as possible.

SAUL DUSHMAN

RESEARCH LABORATORY,
GENERAL ELECTRIC COMPANY,
SCHENECTADY, N. Y.

MYCOFLORA OF BUDS

No reports on the occurrence of fungi and bacteria in the tissues of normal foliar buds have come to the writer's attention. Such organisms are known to occur in nectaries and other floral structures. Cultures from entire buds, bud scales and meristems from several species of trees were prepared on various media in this laboratory. In every instance, the materials were surface-sterilized, by accepted techniques, previous to implantation in the nutrients. The buds were selected from apparently healthy trees and from external appearances were perfectly formed and normal. Included in the investigation were species of *Aesculus, Cedrela, Fraxinus, Ginkgo, Magnolia, Populus* and *Robinia*. Several species of fungi and bacteria and a few actinomycetes were isolated. Most

[1] SCIENCE, 102: 208, 1945.
[2] *Nature*, 155: 545, 1945.