Comments and Communications

Distribution of Funds for Medical Research

In a recent leading article (*Science*, February 6, pp. 127–130) Clarence A. Mills, of the University of Cincinnati, severely criticizes the present manner of distribution of funds for medical research, thus bringing into the open a matter which has been the subject of a vigorous whispering campaign for a year or more.

The basis of Dr. Mills' criticism is that although the northeastern group of states, including Maryland and the District of Columbia, contain slightly less than 30% of the population of the United States, universities and other institutions in that area receive approximately 40% of Federal funds allocated for medical research and considerably more than 40% of funds allocated by privately endowed foundations and those supported by voluntary contributions from the public.

Moreover, a relatively few large privately endowed universities, notably Harvard, Yale, Columbia, and Johns Hopkins, now receive, in the opinion of Dr. Mills and those who share his point of view, a disproportionately large share of these funds; the serious charge is made that large funds are received because the memberships of consulting committees which recommend the grants are heavily weighted with faculty members of these same universities.

Phrases in Dr. Mills' article, such as "long-term dominance exerted over medical research by the older institutions of the eastern seaboard," "disturbing inequalities in the granting of such funds," "pernicious in end-results," tend to obscure two basic considerations: (1) that disbursing bodies would seem to be under obligation to place medical research funds where they believe the most productive research will ensue; (2) that the results of research benefit not primarily the institution or the locality in which it is carried on, but the country as a whole.

Men make discoveries, not institutions; in general, the more gifted the individual, the more will be his contribution to society. It has been my privilege to serve at various times on committees responsible for recommending research grants. These committees work hard, for it is not easy to spend research funds wisely. Invariably, discussion centers around the qualifications of the individual who is to be the responsible investigator, with little or no consideration being given to the university in which that person happens to be working.

Important among secondary factors favorable to productive research are believed to be the amount of time free of teaching or private practice available to the responsible investigator and his principal assistants, adequate laboratory space, basic equipment, and various ancillary services. It so happens that these favorable factors are found more abundantly in some medical schools than in others. Moreover, several universities include not one large group devoted to teaching and research, but two—a school of medicine and a school of public health, each with largely a full-time faculty, independent study body, and separate physical facilities. On the other hand, in many medical schools faculty members are heavily loaded with teaching and private practice, leaving little time for research.

In Volume 5 of *Science and public policy*, the report of the President's Scientific Research Board, the desirability of encouraging the development of medical research in the smaller and less well-known institutions is recognized. The National Advisory Health Council and the consulting committees of the National Institute of Health responsible for the allocation annually of approximately $7,000,000 of Federal funds for research in medicine and related sciences are keenly aware of this problem and are consciously making grants designed to support new groups in this field. But it is asking too much for research funds to bolster the whole structure of medical education throughout the country. Until medical schools are in a position to support a substantial portion of their faculty on a full-time basis, with sufficient free time for research, merely making grants to those institutions for specific research projects will not solve this important problem. The responsibility of the Federal Government with respect to medical education is another matter, which is beyond the scope of this letter.

At the present time therefore, allocation of Federal research funds on a strictly population basis, even within states, as Dr. Mills recommends, would lead to waste of public money and to shortchanging the people as a whole, who stand to benefit from medical research.

Research should be widely encouraged and supported wherever the opportunities seem promising. But to grant funds far beyond the capacity of an institution to use them to advantage is of questionable value, while to withhold funds from institutions where men and facilities are available appears to be contrary to the best interests of the country.

THOMAS B. TURNER

The Johns Hopkins University

Growth of Stumps

A view is presented here on the problem of stump growth. It is suggested that fluctuating temperatures during the winter and early spring initiate the cambial stimulus in the buds and everywhere in the bole, and that the downward course of its passage is governed by increasing diameter of the axis. This suggestion holds for stumps as well as standing trees. From the aspect of this thesis, the cambial stimulus is considered as enzyme activation and the change of stored foods to soluble products.

Stumps differ in behavior. Those of hemlock (W. J. O'Neil. *J. Forestry*, 1928, 26, 244–245), larch, and white fir increase in diameter, but those of spruce and most pines do not (J. H. Priestley. *New Phytol.*, 1930, 29, 316–