CANCER RESEARCH

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Cancer Research and the Public

GUEST EDITORIAL

Tennyson said that "In spring a young man's fancy lightly turns to thoughts of love." For many of us the spring of the year is principally marked as the time to report on investigations conducted during the preceding months. Although this rarely measures up to the possibilities suggested by Tennyson, it is nevertheless pleasant and instructive to tell and be told of work in progress. In recent years, however, a new factor has been introduced into research meetings—namely, the interpretation of research to the public. This latter aspect of our annual convening is of concern to all of us and merits continuing consideration.

The presentation of cancer research to the people has become a big business. This is understandable and justifiable. The citizens of this country through contributions to private agencies and through taxes have become partners with the scientists and with the clinicians on all phases of cancer work. Presumably the public wishes to be informed, and to this end there is a constant stream of explanation via radio, television, the public press, and magazine articles. Science writers, professional interviewers, and the ubiquitous public relations expert must tap the cancer researchers for stories. "What's new in cancer?"; "Where is the breakthrough developing?"; "Is the end in view?"; and "How does this bring us closer to the cure?" are the too frequent type of questions which may be put to the investigator in a public interview or in the drawing room. The honest student pursuing his work with the hope that his results may add one small fragment of knowledge which can ultimately be used in the definitive control of abnormal growth is sorely pressed by such "big and important" questions. He can be candid and say that he doesn't know what is significantly "new in cancer," that "breakthroughs" occur in war and don't have meaning when applied to cancer (at least at the present), and that although the "end" is in view, he doesn't know how to proceed to it in a straight line. One can well imagine the coolness with which such answers would be and are met. These are the straight replies to the questions; however, to give them repeatedly tends to lead to a sense of frustration or guilt. An alternative to this type of answer is the optimistic approach which is supposed to provide confidence and hope for an early solution. Since this is necessarily speculative rather than factual, an enthusiasm of the moment may be built up to heroic proportions even though the scientist, the interrogator, and the public audience may all be equally skeptical. This gives rise to disillusionment and a cynical attitude which is harmful and hurtful to all concerned.

In addition to the hazards of destroying faith in cancer research, there is another consequence of biased or uncritical interpretation of progress to the public. This is that lay persons may come to feel that they can see the best directions for cancer research and attempt to implement their convictions through the allocation of funds to certain very specific investigative areas. It is conceivable that the decision of nonscientific individuals or organizations may be wise; but the experience of the past is not encouraging, and some of the actions of the present are terrifying.

There are many examples in the history of medicine of the influence of lay concepts and mores on professional theory and practice. These have in some instances been conducive to brilliant advances, as in the golden age of Greek medicine when the political, cultural, and general intellectual attitudes of the people enthusiatically supported the search for knowledge of human disease characterized by the school of Hippocrates. Even more readily, however, can one cite the stultifying effects of national attitudes on the pursuit of knowledge. One which may have relevance to our times was the rise of the Methodists in Rome about 50 B.C. The climate in Rome at that time was one of complacency in which stress was placed upon formal organization. The Romans had been singularly successful in conquering much of the known world through the disciplined training of their armies together with careful attention to the supporting services for their military expeditions. This led to smugness and dogmatism which

affected intellectual endeavor in drama, art, literature, and architecture. Little encouragement was given to the wide observation of nature, because it appeared obvious that the Romans knew all that it was profitable to know. The questioning, skeptical philosophy of Hippocrates found little warmth in the constrained Roman atmosphere. The medical doctrine of Themison of Laodicea, on the other hand, met with wide public approval, reflecting as it did the prevailing philosophy. The Methodist concept of Themison reduced all diseases to two fundamental varieties: the condition of rigidity and tension—status strictus—or the condition of relaxation—status laxus. These two states, in turn, were dependent upon abnormal conditions of the pores, either too contracted and narrow or too loose and wide. The diagnosis of the state of the pores was made by inspection of the body and by the excess or deficiency of excretions and secretions. Therapeutic regimens were designed to remedy the strictum or laxum by means of blood-letting, warm baths, poultices, laxatives, diaphoretics, and so on for the condition of rigidity; and astringents, tonics, cold baths, mountain air, chilled wine for those diseases belonging to the relaxed condition. Because the Methodist doctrine of medicine was so facile and formalized, it was possible to reduce medical education to 6 months; in fact, the wealthy of Rome took up medicine as a hobby—obviously, the forerunners of those who avidly devour the daily lessons of the medical columnists in our newspapers. Almost incomprehensible as it may seem, medical science as conceived by Themison was dominant for more than a century until the reintroduction of rational and experimental observation by Galen. It is not surprising that progress in the understanding of disease ground to a halt during the heyday of the Methodists.

I have mentioned the Methodists in some detail to illustrate how the times can influence medicine. It would be foolhardy indeed to attempt to characterize comprehensively the contemporary intellectual and cultural atmosphere. It is nevertheless possible to observe one concept which has become popular in this country since the development of the atom bomb, namely, that anything can be done if sufficient money and manpower are mobilized. Obviously, these are primarily successful in developmental enterprises, and they are not necessarily effective in the discovery of new truths. It is time, I believe, that the public should receive information on cancer research which would lead to an understanding of advances in the field in proper perspective.

Cancer research has made steady progress in the past 50 years. This includes the demonstration of specific chemical, physical, and infectious initiators of tumor formation, the evaluation of the importance of heredity and environment in carcinogenesis, the still incomplete chemical and biochemical characterization of normal and neoplastic cells, and the proof that cancer can be cured by local extirpation and significantly modified by systemically administered chemical agents. The clinical application of these broad contributions to our understanding of unregulated growth has led to easily detectable advances in the control of cancer in man. To illustrate this, there may be mentioned the prevention of certain human tumors by control of environmental carcinogens, which leads to the hope that this phase of basic and applied research may well be as important in cancer as it has been in other problems of medicine. The systematic study of cancers in animals and man has increased the earlier recognition of these diseases, thus facilitating and improving definitive therapy. Effective treatment by surgery, radiotherapy, and chemotherapy has been rewarded by steady improvement in survival statistics. Although these advances may not appear dramatic when contrasted with the immediate pressing problems of human neoplastic disease, they have the compelling virtue of tested soundness. Would it not be wiser to emphasize these accomplishments to interested persons rather than to attempt to interpret the influence of our current investigations on the future solution of cancer?

The foregoing thoughts are so self-evident as to be trite. They are presented not because they are new or startling but to suggest that each one of us working on the problems of growth should be prepared to present to our colleagues in other fields and to the nonscientific community a realistic picture of cancer research as a part of man's continuing search for understanding. It is unrealistic to think that research in cancer can outstrip the developing knowledge in other fields no matter how much money may be made available; it is equally unsound to believe that cancer research will lag. It is inconceivable to me that eradication and complete understanding of cancer will not be achieved. Although these may come suddenly through a new discovery, it is equally probable that the end will be realized ultimately by the application of the orderly and systematic processes of scientific thought and knowledge. Public appreciation and acceptance of this probability would diminish disappointments and increase effective co-operation with the scientists.

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