Increasing the Research Potential in Pathology

By HAROLD L. STEWART, M.D.

THE acute shortage of pathologists is an ever-recurring topic at national medical meetings. It is estimated that the total number of pathologists in the United States should be doubled to meet the needs of practice, teaching, and research. More and more hospitals have been adding pathologists to their staffs since World War II. The recognition of the important role of the pathologist in clinical medicine and residency training has placed the pathologist in a strategic position of great demand. Many new research programs involve tedious studies in pathology. The military services which have maintained essential large forces in this country and abroad require pathologists.

The magnitude of research and the great need for well-trained experimental pathologists are obvious. The late Dr. Byron C. Brunstetter, then executive secretary of the Pathology Study Section in the Division of Research Grants of the National Institutes of Health, Public Health Service, initiated a study of this problem. He proposed in August 1953 that a symposium be established under the auspices of the Pathology Study Section to analyze the problem of obtaining more experimental pathologists for research. The study section occupies a unique position for viewing the nature of this need. At its 1953 fall meeting, shortly after the tragic death of Dr. Brunstetter in an airplane crash on September 16, 1953, a 2-day symposium was authorized to be held in January 1954.

Dr. Stewart is the chief, Pathologic Anatomy Department, Clinical Center, National Institutes of Health, Public Health Service, Bethesda, Md., and was chairman of the symposium briefly reported here. *The full proceedings of the symposium are published in Laboratory Investigation, the official journal of the International Association of Medical Museums, September–October 1954 issue, p. 377. The symposium was held under the auspices of the Pathology Study Section, National Institutes of Health, in January 1954.*

Improving the Status of Pathology

At the symposium it was clearly realized that skilled medical candidates for a career in research pathology could be attracted to the field by improving the status of pathology in the medical profession and research. An impressive and stimulating discussion led the symposium to recommend that faculties of pathology in academic institutions lead the way in establishing greater opportunities for medical students and residents and interns to obtain more effective training in research and teaching programs. Lectures and research fellowships in pathology should be provided to encourage the interest of medical and dental students before and after the completion of their professional degree, and of doctor of philosophy can-

didates in related fields. The local, national, and international organizations of pathology actively engaged in research should write articles and prepare radio programs concerning the role of the pathologist in important medical problems.

It was recommended that new positions with proper academic standing and adequate financial salary be created in order to distribute the teaching and service responsibilities in better balance so that more time is available for experimental research. Realizing that a static histologic appraisal of structural alteration is not the chief goal of research pathology, the symposium suggested that the senior professional staff engage more extensively in experimental as well as descriptive pathology. Premedical training offers many opportunities to emphasize some aspects of the problems in abnormal biology and pathology. The following example is cited to illustrate a means of stimulating experimental studies in pathology at an early stage of training:

In 1886, Pierre Marie discovered a tumor of the pituitary gland in a man suffering acromegaly. This led to our knowledge of the function of the acidophilic cells in the production of the growth hormone. In 1929, a genetic strain of dwarf mice was found to lack pituitary alpha cells, but could be restored to normal size by transplanting normal pituitary gland. Now, a remarkable tumor of the anterior lobe of the pituitary gland has been discovered in a mouse radiothyroidectomized with iodine-131. The tumor produces 5 to 10 times more thyroid stimulating hormone than the normal pituitary gland secretes.

Such studies could be effectively presented to show the value of pathology to the basis of normal and abnormal physiology in medical practice. The history of discoveries in human medicine indicates that every effort should be made to enhance the opportunities for research for the pathologist. One example of a special area of concern where much can be done is the nonuniversity hospital, for this is a most opportune place to observe a wide variety of medical problems. The hospital laboratory can serve as much more than a service; it can be a focal point of research for both the permanent staff and affiliated physicians. The gross morphology and histology and the clinical laboratory findings relating to the puzzling syndromes of disease are centered in the pathology laboratory. This unit should be a full and independent one. Its chief should be a member of the top professional advisory committee. The hospital pathologist can exert a much needed leadership in research.

Year after year, the trend in pathology has been in the direction of practical matters and away from a consideration of the importance of developing and understanding basic biological principles in their relationship to disease processes. Therefore, one solution to the problem of training experimental pathologists would be

Participants in the Symposium

Dr. Stewart was chairman of the symposium which he briefly summarizes here.

Members of the Pathology Study Section of the Public Health Service attended the symposium as well as representatives of the College of American Pathologists, United Cerebral Palsy Associations, Mayo Clinic and Mayo Foundation, Illinois Masonic Hospital Association, the Armed Forces Institute of Pathology, and the medical schools of the Universities of California, Columbia, North Carolina, Pennsylvania, and Washington University at St. Louis. The members of the Pathology Study Section attending were: Dr. Alan Moritz, Western Reserve University School of Medicine; Dr. Herbert D. Friedlander, Division of Research Grants, National Institutes of Health; Dr. Charles E. Dunlap, Tulane University School of Medicine; Dr. Jacob Furth, Children's Cancer Research Foundation; Cols. Robert L. Hullinghorst, MC, USA, and Ralph M. Thompson, MC, USAF, Armed Forces Institute of Pathology; Dr. Paul Klemperer, Mount Sinai Hospital;

Dr. J. F. A. McManus, Medical College of Alabama; Dr. Henry D. Moon, University of California Medical Center; Dr. Paul E. Steiner, University of Chicago; Dr. Robert E. Stowell, University of Kansas School of Medicine; Comdr. R. B. Williams, Jr., MC, USN, Naval Medical Research Institute, National Naval Medical Center; Dr. H. M. Zimmerman, Montefiore Hospital.

for the American Board of Pathology to recommend that a candidate carry out one or more experimental problems during his residency training.

Opportunity for Active Research

The old method of training men in pathology in the intellectual atmosphere of the university covering a period of 6 to 10 years was ideal in many respects, but it is gradually being abandoned owing to economic pressures. In that situation, a man could devote a good part of his time to teaching, autopsies, and surgical and clinical pathology. During the summer months he would have leisure to carry on an active program in research with no responsibility for teaching students. If a system of training of this type could be established in a certain number of pathology departments and universities and subsidized so that the candidate would have no financial worries, it would increase the number of experimental pathologists.

Organizations should provide funds for research grants on the basis of long-term personal income as well as on readily available money for facilities and conference travel expenses. The symposium suggested for the Public Health Service principal responsibility among government agencies in providing support for developing research in pathology. When the permanent funds of an institution are not adequate, the granting agencies should permit their grant money to be converted at once to relatively firm financial sources to be utilized more freely at the judgment of the pathologist in charge of the research.

The Major Recommendations

Career investigators in pathology should be given funds for 5 years or longer for research, salary, training, and travel to scientific meetings. The research pathologist should be given long-term training in several disciplines such as cytochemistry and electron microscopy to emphasize the importance of the dynamics of the pathologic process. Graduate courses should be developed in departments of pathology in schools of veterinary medicine to provide training in comparative pathology in respect to experimental animal research.

It was strongly recommended that the ad hoc committee of this symposium in collaboration with the American Board of Pathology work with other specialty boards to develop a pattern of research training in the laboratory for the residents of the clinical services to secure better training and establish research in the general hospitals. The ad hoc committee, of which Dr. Robert E. Stowell of the University of Kansas is currently chairman, was charged with the responsibility of implementing the recommendations of this symposuim. The committee has already progressed toward bringing these recommendations to the attention of pathologists and administrators, and is carrying the problem to the public by various means.