Department-of-Surgery

News Letter

Vol. 1 December 10, 1956 No. 10

THE SURGICAL RESEARCH LABORATORY

The Halsted Laboratory of the University of Colorado symbolizes the dramatic and crucial change in medical education which occurred at about the turn of the century, a change which perhaps more than any other laid the foundation for the subsequent flowering of American medical schools. This was the entry of the clinician into the laboratory. Long had the dichotomy existed between the basic sciences and the art of practice. The pathologist and the physiologist were in their towers; the clinician was at the bedside. It was not until 1905 that the first experimental surgical laboratory was built in America -- appropriately named after John Hunter (the first surgeon investigator) by its sponsor, William Halsted. Before that, the inquisitive surgeon had worked in corners borrowed from the anatomist or pathologist, where he was received with varying degrees of tolerance. It then took a generation of men trained in this philosophy and in this setting, scattering into the medical schools across the country, to establish the workshops of clinically oriented physiology. In Boston (Cushing), Cincinnati (Reid), Cleveland (Crile), San Francisco (Holman), and elsewhere the surgical laboratories grew and prospered. Today, no medical school of any repute exists without one. Our own Halsted Laboratory, established in 1946, pays tribute in its name to the man who, more than any other in this country, wrought this great change.

The surgical laboratory is a tool of many edges. Here the research which underlies the development of new or changing concepts of surgical treatment is performed. The better understanding of the relationship of gastric physiology to ulcerogenesis, the growing knowledge of the metabolic patterns of response to trauma, the development of arterial surgery and grafting, and the whole new field of cardiac surgery are but a few of the more obvious recent advances carefully and laboriously studied in the laboratory before clinical application was attempted. Perhaps the value of this new approach to clinical problems is no better exemplified than in the history of heart surgery. From the start (1938), human cardiac surgery was performed at risk rates of one to ten per cent. In the early days of gastric surgery, the risk was fifty per cent; in the early pulmonary lobectomies, twenty five per cent; but the ligation of patent ductus, the repair of

coarctation, and the systemic-pulmonary shunt, when first applied, already had the built-in safety of a background of experimental experience.

Valuable as it may be for applied research, the laboratory has equal value in teaching. Here the sophomore medical student first really sees the relationship between the basic sciences and the art of practice as he studies the fundamentals of surgical technique. Here he returns in senior year to experience himself, and thus comprehend, the difficulties and pitfalls of the common experimental methods for the acquisition of knowledge.

For the resident in training, the "dog lab" year is invariably one of his most valuable. Its impact is physical, intellectual and spiritual. Actual techniques of various procedures are practiced and mastered. Problems involving chemistry and physiology are given prolonged thought and study. A glimpse into the satisfactions and vicissitudes of the scientific investigator changes basic prejudices and reaffirms faith in the scientific basis of practice. Occasionally, the investigative fire is kindled and an academic career is begun.

For postgraduate students, the laboratory is a genuine workshop. Typical of such students are members of the department faculty. The laboratory is available to both full-time and volunteer men, although the latter find difficulty in fitting research into their practice. In addition, in Halsted Laboratory are usually working from one to three foreign surgeons, from France or Greece, or Spain or Chile, or Mexico, or India, or Pakistan; - men who have obtained fellowships and are investing much time and effort to learn American methods in surgery, particularly cardiovascular surgery, by spending three months to a year in centers where contributions to this field are being made. The University of Colorado feels an obligation to accept and help these men, as a part of its broader objective of improving medical care for all people.

The surgical laboratory is the living symbol of modern American medical education. It is a sine qua non of the successful or progressive university surgical department. Yet almost never does the university itself support such laboratories financially. They exist because of the drives of certain men and the availability of outside funds for research. The problems of financing the Halsted Laboratory will be the subject of next month's letter.

Merry Christmas to you all.

Henry Swan, M.D.

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Faculty News

The meeting of the Western Orthopedic Association was held in Phoenix, Arizona on November 1 through 3. Drs. Clayton, Franz, Jacobs, Miles, Olshausen and Stanek were in attendance.

Dr. Miles presented three papers; one with Dr. Olshausen of Boulder, and another with former resident, Dr. Carleton, of Colorado Springs. The last mentioned, on fracture of the greater trochanter, is the first extensive description of this entity in the English literature.

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Dr. Robert Virtue was the invited speaker at several South American Medical Centers during a three week trip in November. There is much interest in hypothermia among our Latin neighbors.

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The Rock Island Surgical Association met in Colorado Springs, November 1 - 2. Dr. Charles Harrison presented a discussion on Tumors of the Large Bowel.

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