SPECIAL NOTICE FOR REFERRING PHYSICIANS

A number of out-of-state patients, or patients who do not have a legal residence in Texas have been referred to MDAH without understanding that they, if examined or treated, must pay the full cost of their care. This requirement for admission was established because M. D. Anderson Hospital is a branch of The University of Texas and its charity services are supported by Legislative funds. Patients with unusual types of cancer are admitted for teaching purposes.

It would be greatly appreciated if the referring physician would make sure that the out-of-state patient completely understands his responsibility for the payment of fees before he undertakes travel expense to come to the hospital. An advance deposit is required of out-of-state patients upon admission to the Out-Patient Clinic.

FROZEN SECTION TECHNIQUE IMPROVED

The cryostat, used in the past for histochemical study of cells in research work, has been adapted for the first time so that it can be used for patient service in hospitals.

The cryostat consists of a refrigerated cabinet maintained at temperatures below freezing. It contains a conventional rotary microtome which is operated by the technician who places her hands in a pair of fleece-lined gloves attached to hand holes in the cabinet door. Sections of fresh frozen tissue are cut at ten microns or less and are flattened against a cold slide. Since the tissue remains frozen it can be manipulated with a brush in the same manner as a paraffin section. The slide is then passed from the cabinet and defrosted. As the tissue thaws, its serum coagulates and adheres to the slide surface. The tissue is then fixed for a few seconds with alcohol, stained with hematoxylin and eosin, dehydrated, cleared and is mounted.

This is a considerable improvement over the older frozen section techniques, which require a highly skilled technician to prepare a frozen section with a thickness as little as 30 microns. With the cryostat method, a student technician with only a week's training can routinely prepare ten micron tissue sections for diagnosis. In addition to simplicity and high quality of products, tissues not adaptable to sectioning by conventional freezing methods can be prepared; for example, lymph nodes and papillary lesions of thyroid and colon. The cryostat also allows for greater uniformity in the sections since a water bath is not needed, and easily broken tissues can be sectioned and studied with assurance that the margins are included.

For pre-freezing, the tissue specimen is placed in equipment designed by staff members at MDAH. An open top Dewar Flask with a styrofoam plug is filled with dry ice. The specimen holder is placed in a one inch aluminum bar which inserts through the plug to the bottom of the flask. Alcohol is used to accomplish the heat transfer bond. Thirty to forty-five seconds are required for the pre-freezing. The pre-frozen tissue is then passed into the cryostat for sectioning. Methods for pre-freezing the tissue using CO₂ gas are also being investigated.

The tissues on permanent slides prepared with the cryostat resemble microscopically paraffin-section tissue, yet they are prepared as quickly as the conventional frozen sections. By this method, the pathologists at MDAH are able to make their diagnosis much sooner than heretofore.
GASTROSCOPIC EXAMINATION TO INCLUDE PHOTOGRAPHY

The Gastrointestinal Service at MDAH will soon photograph all lesions seen during gastroscopic examination. Gastroscopy is now as safe as any and more comfortable than some other endoscopic procedures.

Photographs of the interior of the stomach have, in the past, been difficult to take, because of the problem of light leaks in transmission through the flexible gastroscope. Adaptation of features of a previously used method has been made by Robert S. Nelson, M.D., Associate Internist in the Department of Medicine.

Dr. Nelson, recently elected an associate member of the American Gastroenterological Association, reported at the annual meeting of the American Gastroscopic Society on the improvements possible in gastroscopic photography.

The method which was developed is designed to simplify the procedure, yet allows for efficient operation and does not increase discomfort to the patient. Color photographs of different types of gastritis help to clarify the actual appearance of the types of such lesions, and help in differentiating lesions seen during gastroscopic examination. Pictures such as these may help in the diagnosis of gastric lesions.

CLINICAL CONFERENCE

All Texas M. D.'s are invited to attend the Second Annual Clinical Conference which will be held at MDAH, Wednesday, November 13. This conference will include a presentation and discussion of cases of melanoma. The clinical program will be of interest to dermatologists, pathologists, and surgeons, and the general practicing physician.

Those attending the clinical conference are invited to attend the Fourth Conference on Normal and Atypical Pigmented Cell Growth, which will be held at MDAH, November 14, 15, and 16. The Cell Growth program is being presented by the New York Zoological Society. The Melanoma Study Section of MDAH will have members participating in the Program. Participating in the Study Section are staff members of the Univ. of Oregon Med. Sch., Stanford Univ. and Calif. Inst. of Tech.

YEAR BOOK OF CANCER PUBLISHED

The Year Book of Cancer, organized by staff members of MDAH, brings together the latest information on the various specialized disciplines of cancer. Published by the Year Book Publishers, Inc., it is a compilation of 207 abstracts, illustrated with approximately 200 photographs.

By a process of elimination, it was found that approximately 99 per cent of the clinically useful information on cancer is published in approximately 500 medical journals. In any year over 4,000 of these articles appear. The clinician, even the one who has many cases of cancer among his patients, cannot hope to read more than a sparse fraction of this abundant literature. Consequently, the editors endeavored to assemble a group of physicians and other medical scientists who have attained somewhat more than usual acquaintance with the many aspects of the broad field of oncology. The group finally consisted of 119 editors, each of whom had some particular body of information well within his grasp. Naturally, the editors were assigned to areas in which they had greatest competence. Within these sections, editors made their decisions in terms of their particular disciplines.

That the value of the Year Book of Cancer might further be enhanced by the integrity of its contents, the authors of the 207 articles were requested to abstract their own articles. They generously did, and with such minor amendments as the editors deemed necessary for conservation of space the abstracts appear in the Year Book of Cancer.

The Year Book, to be published annually, will be evaluated and the categories into which the articles are placed will be brought up to date, in an attempt to provide the reader with a body of subject matter of current interest.

YALE LECTURES GIVEN

Miss Eleanor MacDonald, Epidemiologist at MDAH, delivered her tenth annual lecture series titled "Cancer Reporting as an Example of Chronic Disease Reporting", at the School of Public Health, Yale University School of Medicine.
The previously unsuspected presence of a trace of aluminum in diox­
yribonucleic acid, DNA, has been reported at the American Chemical
Society meeting held in Miami, by Henry J. Koch, Jr., M.D., associate
internist in the Department of Medi­
cine at MDAH. Dr. Koch will head
the new section of Trace Elements
at MDAH.

What the role of aluminum is in
DNA is still to be found, but the acid itself is believed to be the
special substance of chromosomes. Though the general structure of
DNA has been known for some time, there is not an apparent place for
aluminum, which has been found in trace amounts. The structure of
DNA is a complex molecule known to contain the elements of carbon,
hydrogen, oxygen, nitrogen and phosphorus.

A trace element is one that is
present in the body in amounts of
about one part per million or less.
At least nineteen such elements are
known to be associated in one way
or another with the body’s function­ing. Cadmium has been found in the
kidneys and is probably a toxic trace
element. Copper increases in plasma in lymphomatous diseases; the inci­
dence is in proportion to the rate of growth.

STUDY SECTION MEETS AT
STANFORD UNIVERSITY

Varying methods of diagnosis and
the biologic behavior of melanoma
were discussed at a Melanoma Study
Section meeting held at Stanford
University. Attending the study sec­tion
were anatomists, biochemists,
dermatologists, internists, patholog­
ists, and surgeons from MDAH, the
University of Oregon Medical School,
Stanford University, and California
Institute of Technology.

Radioaudiographic techniques, as
well as chemical and biochemical
methods of diagnosis, were discussed.
The clinical results of phenylalanine
mustard (PAM) on nine patients
with melanoma were presented.

Though, at the present, the results
of the drug have not been encourag­
ing with human patients, on mouse
melanoma, the drug retards progress
of the disease, and thus indicates that
the study of the drug should be con­tinued.

Also presented were reports on the
chemical determination of DOPAase
oxidization, the radioaudiographic
localization of tyrosine, and the
study of melanoma in fish.

The study section was organized
in order to bring about a concerted
and organized attack against malig­
nant melanomas, one of the types of
cancer most resistant to treatment.

ARMY STUDENTS
TRAIN AT MDAH

The University of Texas M. D.
Anderson Hospital, in affiliation
with Baylor University College of
Medicine, has accepted for the second
year, two students for a two-week
special training period, from the
School of Hospital Administration,
A.M.S.S., Brooke Army Medical
Center at San Antonio.

The students, Lt. Col. Martin A.
Verzi, M.S.C., and Major John W.
Holt, were given limited objective
problems, considered to have train­
ing value to the students, which they
worked out and on which they will be
graded.

The problems they worked on
were supply management and sup­
ply control, and the establishment of
a record management program.

In the same report, Dr. Koch also
reported that there is the possibility
of a new diagnostic test for adrenal
function in that the plasma zinc in­
creases in Addison’s disease and de­
creases with large doses of adrenal
steroids.

Portions of his work have been
supported by the American Cancer
Society while at Sloan-Kettering In­
stitute in New York before coming
to MDAH in the early part of 1957.
Staff Members of MDAH pre­
sented twelve papers at the forty­
eighth annual meeting of the
American Association for Cancer
Research, held in Chicago, April 12
to 14.

STAFF ACTIVITIES

Dr. Mary L. Alexander, research
associate in biology, is spending
three months conducting research at
the Oak Ridge National Laboratory,
Tennessee. She is using high-energy
acceleration equipment in studies of
biological damage from radiation.

Dr. R. Lee Clark, Jr., director and
surgeon-in-chief, has been appointed
section chief by the American Col­
lege of Surgeons’ Committee on Can­
cer. The activities of the sections
where cancer programs have not
been established is to encourage the
development of such programs.
Where programs exist, the committee
aids in the integration of lay and
professional education under super­
vision of the medical profession and
existing cancer organizations in the
area. Included in the section which
are Texas, Louisiana and Mississippi.

Dr. Lowell S. Miller, assistant
radiotherapist, will report at the an­
nual meeting of the American Ra­
dium Society on “Value of Whole­
Body Roentgen Therapy for Patients
with Generalized Neoplasms”, in
Quebec, Canada.

Dr. E. Staten Wynne, research
bacteriologist, has been invited to
become a charter fellow of the
American Academy of Microbiology.
The Academy is made up of well­
qualified microbiologists in all
branches of science from the U.S.
and Canada.

The Texas Hospital Association
Operating Room Conference Group
met at MDAH, May 15. The pro­
gram arranged for the group in­
cluded: principles of cancer surgery;
operating room set-up in a cancer
hospital; demonstration of operating
room physical set-up; instrument
tables and duties of scrub and cir­
culating nurses; the demonstration of
actual surgical procedures; radiation
protection; and the clinical applica­
tion of radioactive materials.

Dr. W. S. MacComb, chief of the
head and neck service, and Dr. G. H.
Fletcher, radiotherapist, reported at
the American Radium Society meet­
ing in Quebec, Canada, on the com­
ibined use of surgery and radio­
therapy in treatment of cancer of
the larynx.

Dr. William S. Derrick, anesthe­
siologist, has received the Alumni
Achievement Award for 1957 from
The George Washington University.
SPEAKERS AT 1957 FUNDAMENTAL RESEARCH SYMPOSIUM

Seated, left to right: Joseph W. Beard, Duke University; John Bittner, University of Minnesota; Erneste Goodpasture, Armed Forces Institute of Pathology; Wendell M. Stanley, University of California; and Albert B. Sabin, University of Cincinnati.

Standing, left to right: Ben R. Burmester, U.S. Department of Agriculture, East Lansing, Michigan; Francisco Duran-Reynals, Yale University; Ludwik Gross, Bronx Veterans Administration Hospital; Jerome T. Syverton, University of Minnesota; George Gey, Johns Hopkins Hospital; W. Ray Bryan, National Cancer Institute; Alice E. Moore, Sloan-Kettering Institute; Earl A. Evans, Jr., University of Chicago; Howard Andervont, National Cancer Institute; George Woolley, Sloan-Kettering Institute; Leon L. Dmochowski, MDAH, general chairman of the symposium.

ELEVENTH ANNUAL SYMPOSIUM

Scientists from 30 states and three foreign countries attended the Eleventh Annual Symposium on Fundamental Cancer Research held at MDAH, March 7-9. There were 320 registrants.

On March 7, reports of 34 of the 100 current research projects at MDAH were presented. Serving as consultants on the reports given were: Drs. Murray M. Copeland, Windsor Cutting, Charles D. Kockakian, T. S. Painter, Fred W. Stewart and H. S. Wigodsky.

Projects discussed were related to: hormones and metabolism, carcinogenesis, leukemia in animals, antimetabolites, the developmental aspects on mammalian cancer, radiation and biophysics, tissue culture studies, and clinical and related investigations.

On March 8 and 9, papers were devoted to “Virus and Tumor Growth”. The topics included many aspects of virology and its relation to cancer. Subjects for discussion were: the pathology of virus neoplasia; genetic, hormonal and age factors in susceptibility and resistance to tumor-inducing viruses; immunological factors in viral infections; factors influencing proliferation of viruses; transmission of tumor-inducing avian viruses under natural conditions; virus range of stable and pure-line cell strains; the oncolytic properties of viruses; cell-free transmission of leukemia; the isolation and identification of tumour-inducing viruses; host-virus relationships in tumor-inducing viruses; the electron microscopy of tumor-inducing viruses; carcinogens and viral infections; the action of viruses on cells; the potential significance of nucleic acids and nucleoproteins of specific composition in malignancy; and viruses, genes and cells.

All papers, and the discussion of papers, will be printed in a forthcoming issue of Texas Reports on Biology and Medicine.

RESINS STUDIED FOR CO₂ ABSORPTION

Adequate ventilation of the lungs and complete removal of carbon dioxide from the closed circuit anesthesia system is essential for the well-being of the surgical patient. Soda lime, used at present, does not accomplish its purpose to the complete satisfaction of all anesthesiologists.

The Experimental Anesthesiology Section at MDAH has been investigating resins to improve carbon dioxide absorption during surgical procedures. Soda lime, an expensive absorbent, must be replaced at least every five hours, though it is the most effective absorbent known. If the ion exchange resins were to be used, a large monetary savings could be effected as well as, perhaps, an increase in effectiveness of CO₂ absorption during surgery.

Using the ion exchange resins, the principles of chemical absorption are under investigation by Dr. W. S. Derrick and R. C. Smart. The synthesis of a resin which might be effective in absorption of CO₂ is underway. The resin, tentatively called “popcorn resin” is a methylvinyl-ketone substance cross-linked with di-vinylbenezene. Large particle size and surface area of the resin may increase its efficiency and capacity for the absorption. The CO₂ is collected by the resin and held until released by a sodium hydroxide bath.

It is hoped that the resin will be more effective than soda lime in absorption canisters on anesthesia machines.