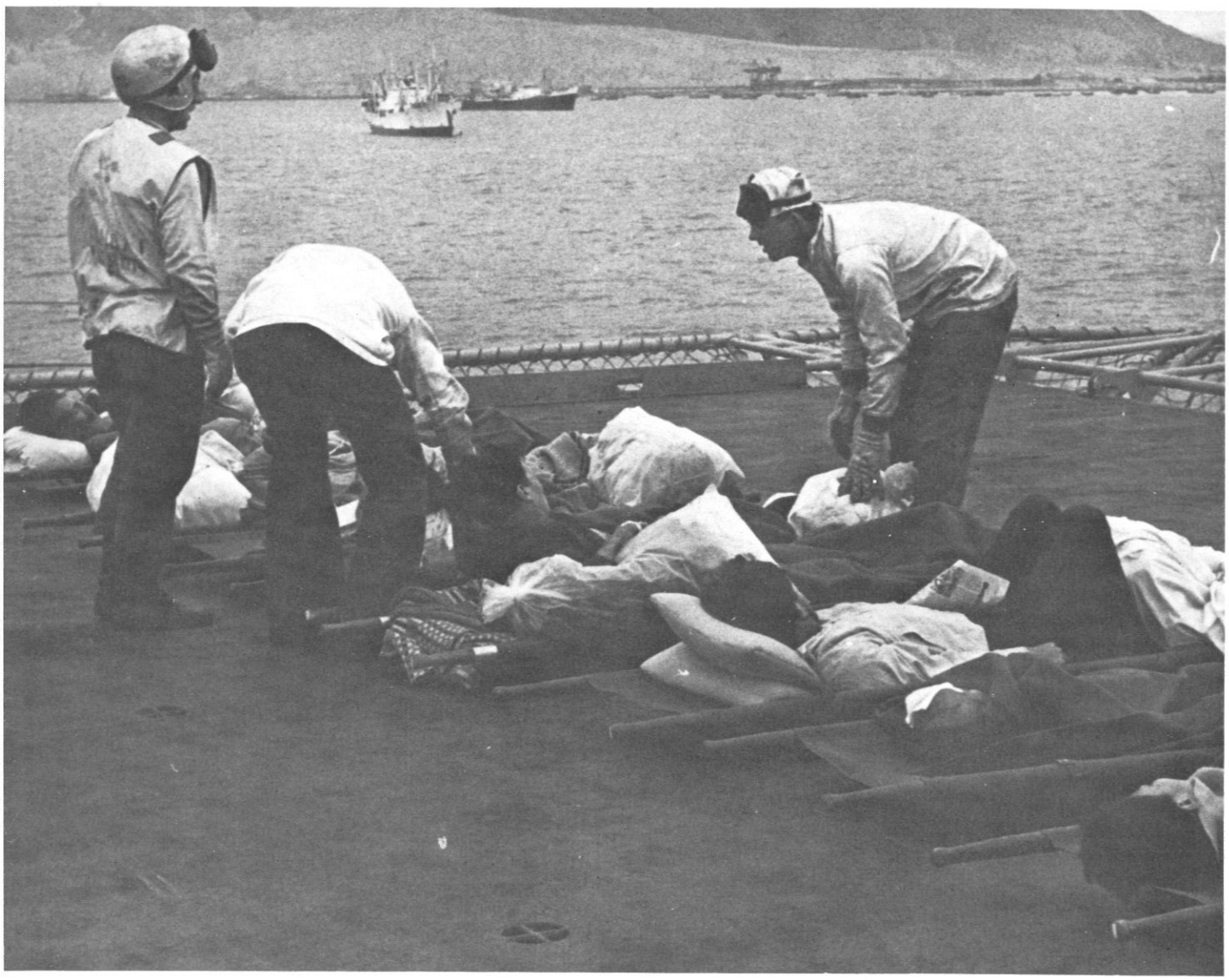
U. S. NAVY Medicine



September 1970

United States Navy Medicine

Vol. 56 September 1970 No. 3

POLICY

U.S. Navy Medicine is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry and allied sciences. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article, in its original form. The opinions and conclusions expressed in the articles or items included herein are those of the respective authors and do not necessarily represent the views of the Department of the Navy, the Bureau of Medicine and Surgery or any other governmental department or agency thereof.

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The issuance of this publication approved in accordance with NAVEXOS P-35.

NAVMED P-5088

CONTENTS

Credits: All pictures are Official U.S. Navy Photographs unless otherwise indicated.

Cover photograph shows Peruvian earthquake victims who received medical attention aboard the USS GUAM (LPH-9), readied for transfer to a hospital ashore via 33rd Marine Expeditionary Unit. Photo by PH3 N. A. Miller.

Pages 4-14. Photographs of Peruvian Earthquake Relief Operation were made available through the courtesy of 1stLT Joseph W. Pratte, USMC, Joint Public Affairs Officer, Camp Lejeune, N.C.

Back Cover photograph by PH3 N. A. Miller reveals SGT Melvin Gray, crew Chief aboard a Marine CH-46 helicopter, holding a little Peruvian Indian girl being taken to the USS GUAM for medical care.

from the Chief

The empathy of our military forces for the people of the community in which they may be stationed is one of our finest attributes. Uprooted from family and usual pursuits, American servicemen have been periodically located in distant lands, for a cause which they may not have completely understood or espoused, and they have handled themselves creditably in the vast majority of instances. Whether motivated by inherent curiosity concerning cultures different from their own, by a respect for countries whose venerable histories may be traced back many more years than our own, by compassion for mankind, by a diplomatic requirement or special desire for some decent expression of sentiment when separated from their own loved ones, our Nation's military personnel have become involved with a given populace dictated by time and circumstance. In no previous conflict has this charismatic phenomenon been more evident than in Vietnam.

Because it deals primarily with providing a service for which there is often urgent and particular need, the Navy Medical Department is privileged to contribute very actively to such humane endeavors. In exchange for our medical expertise and resources, unique opportunities are presented to study and work with extraordinary cases of disease and trauma. We are reminded in remote areas that compassion and human understanding can effectively substitute for technologic capability in providing peace and courage; that the converse of this is not true; that technologic advance cannot reduce the need for communication.

The potential for application of the knowledge and expertise gained in military situations is interesting to contemplate. As an instant example, your attention is invited to the accounts of the Peruvian Disaster Relief Operation printed elsewhere in this publication. The United States was one of many nations which responded to the need for assistance. At least in humanitarian causes, whatever the motivation, emissaries of nations which may be widely divided politically and ideologically, can effectively communicate and coordinate their efforts. It is a beginning. . . .

RADM O. Gray, Jr. MC, USN
From NAS, Jacksonville, Fla.
To CO Nav Aerospace Medical Center, Pensacola, Fla.

RADM E. P. Irons, MC, USN
From CO Nav Aerospace Medical Center, Pensacola, Fla.
To Retirement

RADM W. C. Turville, MC, USN
From CO Nav Hosp NNMC, Bethesda, Md.
To CO Nav Hosp Great Lakes, Ill.

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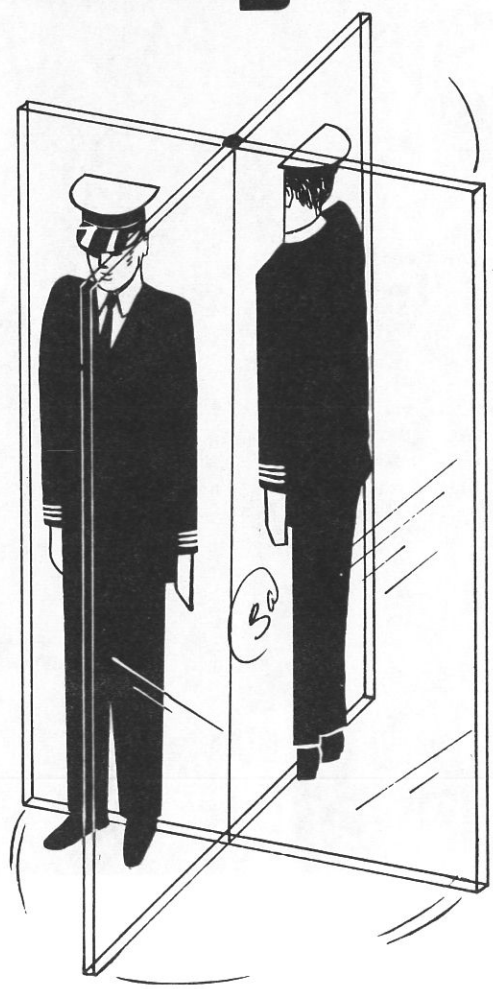
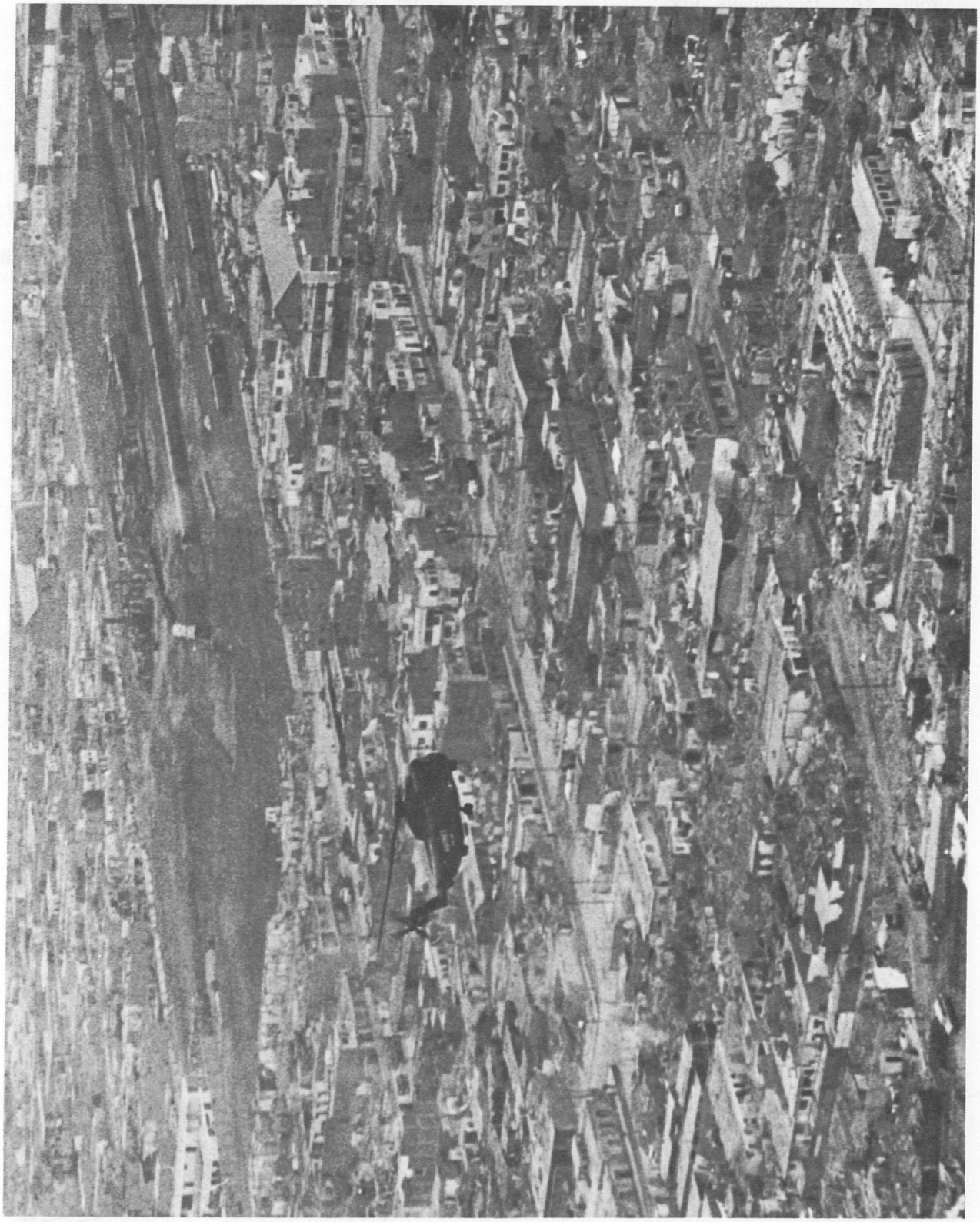
CDR E. J. Clarke, Jr., MC, USN
From Nav Prev Med Unit No. 6, Pearl Harbor, Hawaii
To Officer-in-Charge, Nav Prev Med Unit No. 2, Norfolk, Va.

Coming and Going





PERUVIAN EARTHQUAKE RELIEF OPERATIONS

By 1stLT Joseph W. Pratte, USMC, Deputy Joint Public Affairs Officer, Camp Lejeune, N.C.

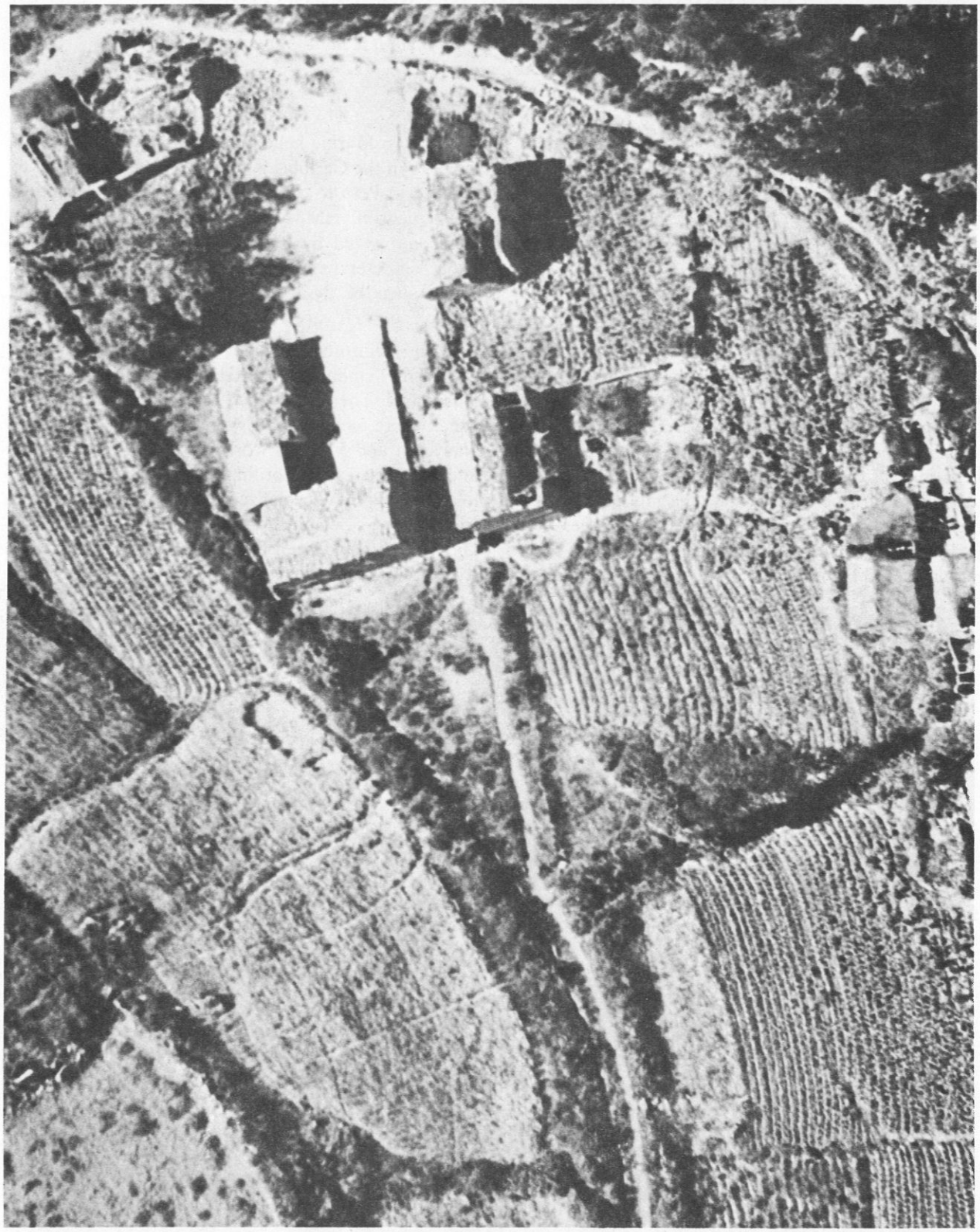
Last May 31st the worst earthquake to shake the Western Hemisphere in many years hit the small country of Peru killing upwards of 50,000 people and leaving over half a million injured and homeless.

The United States government immediately offered assistance to the Peruvians and it was gratefully accepted. Within a matter of hours, American planes were being loaded with relief supplies destined for staging areas near the major disaster sites.

Many small villages and towns located high in the Andes mountains were devastated by the quake. The violent tremors brought mountains crashing down on roads and passes, leaving thousands of injured Peruvians cut off from all outside help. There were no airfields from which to evacuate the injured from the mountainous interior. Rugged cliffs and gorges precluded the feasibility of air-dropping supplies. Helicopters would be needed to do the job.

The USS GUAM, an amphibious assault ship carrying 16 Marine helicopters, was on routine training duty in the Caribbean when the order went out to proceed to Peru to conduct disaster relief operations. The squadron, HMM-365 out of New River, N.C. was commanded by LCOL Robert H. Nelson. The pilots, all veterans of combat operations in Vietnam, would soon be flying some of the most hazardous missions of their careers.

With a reinforced company from the 1st Battalion, 2d Marines embarked, the GUAM transited the Panama Canal. The ship docked at the Pacific end of the canal where relief supplies were waiting to be loaded. Navymen and Marines worked throughout the night and into the early morning hours to complete the loading. Highly specialized Navy Surgical Teams from Camp Lejeune, Portsmouth, Va. and San Diego, Calif. had been flown to Panama earlier and were now aboard the Guam.



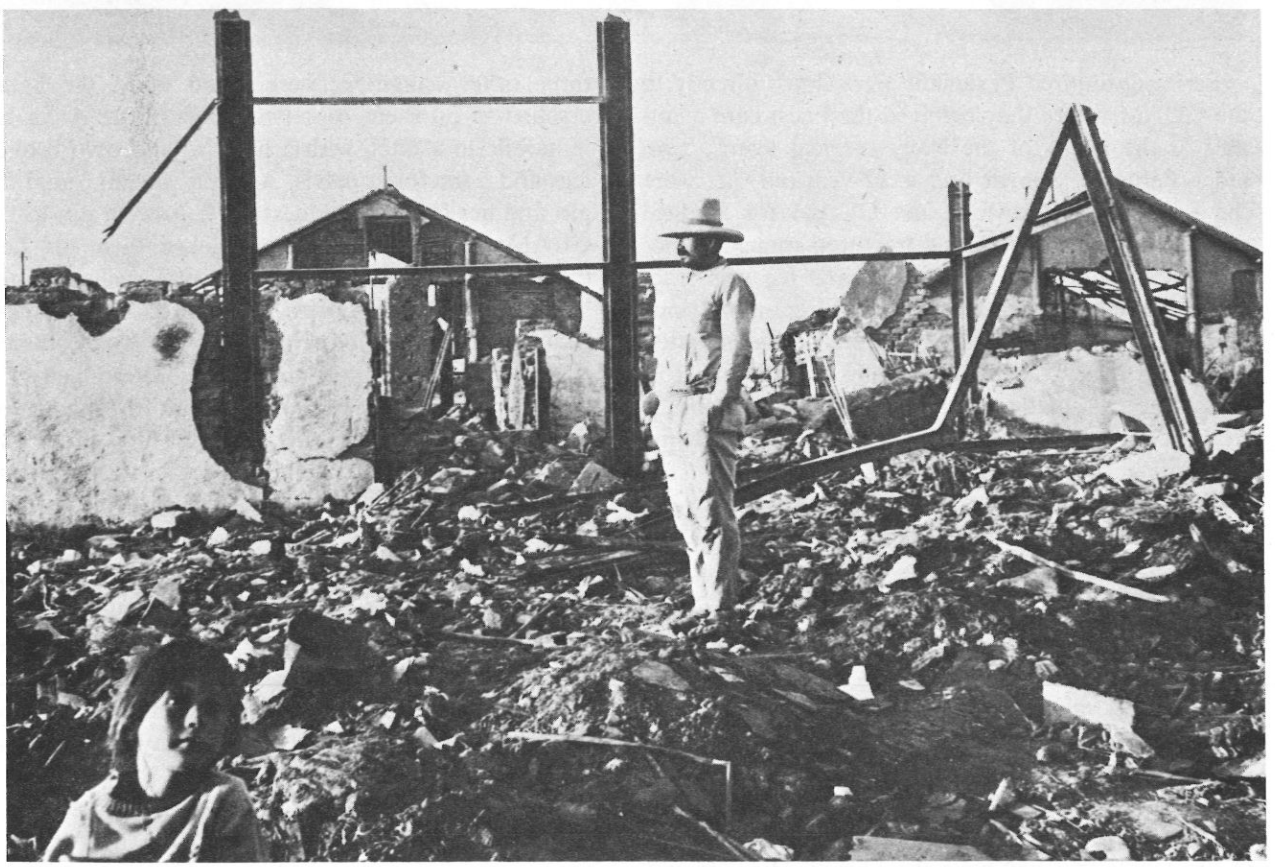
By 3:30 a.m. on June 9th, the ship pulled away from the dock, passed under the Bridge of the Americas into the Pacific and steamed south for the two-and-a-half day voyage to Peru.

Arriving at the coastal city of Chimbote, the Navy-Marine Corps team wasted no time in getting to work. Chimbote is an industrial port city located about 240 miles north of the capital city of Lima. It was in this general area and in the mountains to the east that the quake did most of its damage. Hundreds of tons of food and medical supplies were stockpiled at Chimbote awaiting the arrival of the ship. Medical teams made up of Peruvians, Americans, Chileans, Canadians and volunteers from dozens of other countries also waited at Chimbote for the Marine helicopters that would take them into the mountains.

Early on the morning of June 12, the helicopters roared off the flight deck to begin rescue and relief operations. The first stop for most helicopters was a fenced-in soccer field in Chimbote where supplies were stockpiled and medical teams waited for transportation. The teams and their equipment were quickly loaded and the big helicopters lifted above the rubble that was once a city.

From the desert-like coastline one helicopter flew east where mountain peaks suddenly rose to above 15,000 feet. The pilot of the aircraft, CAPT Jack R. Howell of Goldsboro, N.C., guided his chopper into a high grass area about half the size of a Little League baseball field. The "landing zone" was on a ten degree slope at an altitude of 12,500 feet. About 25 feet behind the craft and on both sides of it, was a sheer drop of about 2,000 feet. Mountain peaks in front of it were covered by clouds. Peruvian villagers seemed to come from out of nowhere to look at the strange craft. Most had never seen a helicopter. A medical team and its equipment was unloaded. Two Marine communicators were assigned to the team to provide ground communication for re-supply and evacuation helicopters.

Landing in small zones at extreme altitudes with life-saving food and medical supplies became the pattern. Working in pairs, one helicopter would remain aloft to radio information to flight controllers on the GUAM while the other landed, most of the time in deep valleys between high mountain peaks. When the first chopper was unloaded and back in the air, the second one would land.



Seriously injured Peruvians were flown directly to the GUAM where they received the finest care available at the hands of the Navy surgical teams. Two older Peruvian women and a 12-year-old girl were the first patients flown to the GUAM for medical attention. One woman had a fractured spine, another a dislocated hip and the young girl's leg was fractured. None had received any medical attention since being injured 14 days earlier. Before darkness halted flying operations, 20 medical teams were inserted in areas where casualties were highest, dozens of sorties were flown carrying food, water and shelter items into critical areas and 18 patients were being treated aboard the GUAM. At least a dozen GUAM crewmen and embarked Marines donated blood for the injured who ranged in age from three to 50 yrs.

As daily operations continued, stories of tragedy, heroism, and of devotion unfolded.

The small mountain town of Mato is located at 8,500 feet above sea level. Inhabited by about 800 Inca indians, the town was 40% destroyed by the May 31st earthquake. Three days after the quake, Romulo Trejo was able to dig his daughter Aliva out of the rubble that had been their home. His wife and three other daughters were killed when the house crashed in on them. For two weeks, little Aliva lay immobile in a ditch with a head wound, two broken legs and a fractured pelvis. A medical team found the girl and her father; a request for help went out to the GUAM. A Marine helicopter picked them up, flew them to the GUAM, and Aliva was rushed to the hospital. A Peace Corps nurse, Renee Romanko, gave Aliva a bath and prepared her for X-ray studies. When the extent of injuries was determined, the youngster was taken to the cast room for application of a body cast covering her legs and hips. After two days on the GUAM, she and her father were flown to a hospital in Chimbote where Aliva will remain until she is capable of walking again.

On Sunday, June 14th the ship's hospital admitted its youngest patient, Julio Collain Sevallas, age 10 months. Together with his brother, sister and mother, he resided high in the mountains when the big earthquake came. The adobe walls of their home fell in on them injuring all. The father was away in Chimbote where he worked as a laborer.

Immediately after the quake the father hitched a ride in a car as far as he could, then walked for two

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REPORT ON PERUVIAN EARTHQUAKE RELIEF OPERATION

By CDR Marion K. Neugebauer, MC, USN; CDR Benjamin F. Gibbs, Jr., MC, USN, and CDR J. D. Tolmie, MC, USN. Photos by PH3 N. A. Miller and PHC W. A. Davis.

Following the devastating earthquake in the northeastern area of Peru on May 31, 1970, it became increasingly more evident that massive emergency aid programs would be needed to reach victims in the Sierra mountain ranges. By late evening of June 5, plans to dispatch a Navy Relief Force had been approved by the White House and formal orders to deploy three surgical teams were received at BUMED. Very little information was available concerning the number or types of casualties anticipated, since the earthquake had virtually wiped out communication and reconnaissance in the disaster areas had been almost impossible. Three surgical teams were directed to proceed to the Panama Canal Zone to join the U.S. Aircraft Carrier GUAM at Balboa by 0500 on June 8. Three Naval Hospitals contributed one surgical team each as follows: Naval Hospital, San Diego, Calif., headed by CDR Marion K. Neugebauer, MC, USN; Naval Hospital, Camp Lejeune, N.C., headed by CDR J. D. Tolmie, MC, USN; and Naval Hospital, Portsmouth, Va., headed by CDR Benjamin F. Gibbs, Jr., MC, USN. Each hospital made direct arrangements with NAVAIRLANT for transportation.

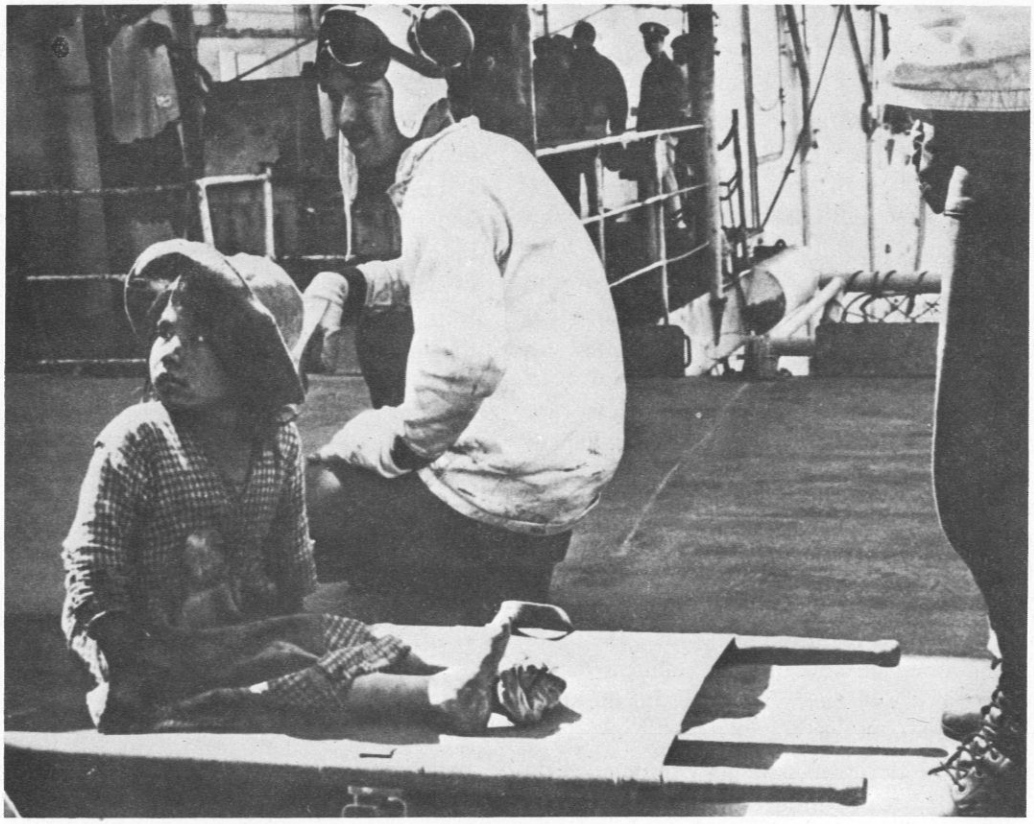
From 9 June to 26 June, 1970, the three surgical teams were deployed aboard the USS GUAM which departed for Peru at 0300 on June 9, 1970. CDR Neugebauer was the Senior Medical Officer aboard and served in an advisory capacity to COMPHIBRON TEN, Commodore Alan Dougall, Commanding. Twelve physicians and almost 60 corpsmen were available; specialists in the fields of anesthesiology, general surgery, thoracic surgery, and orthopedics were included among the medical officers. Despite a paucity of information, continuous organizational meetings were held en route to Peru, in an attempt to

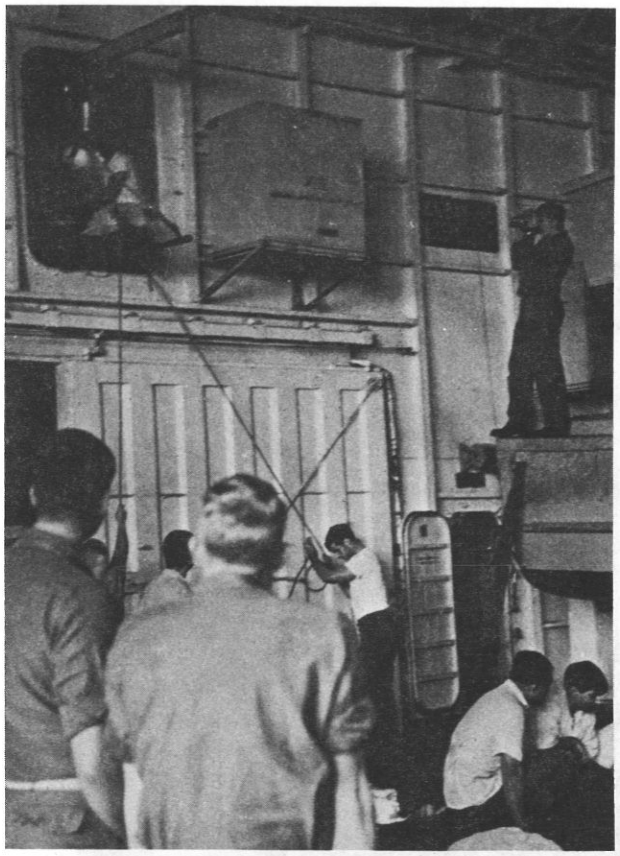
formulate plans for disposition of surgical teams. It was decided to establish a field hospital which would be staffed by two of the available teams, and to augment an already existing civilian facility with a third team.

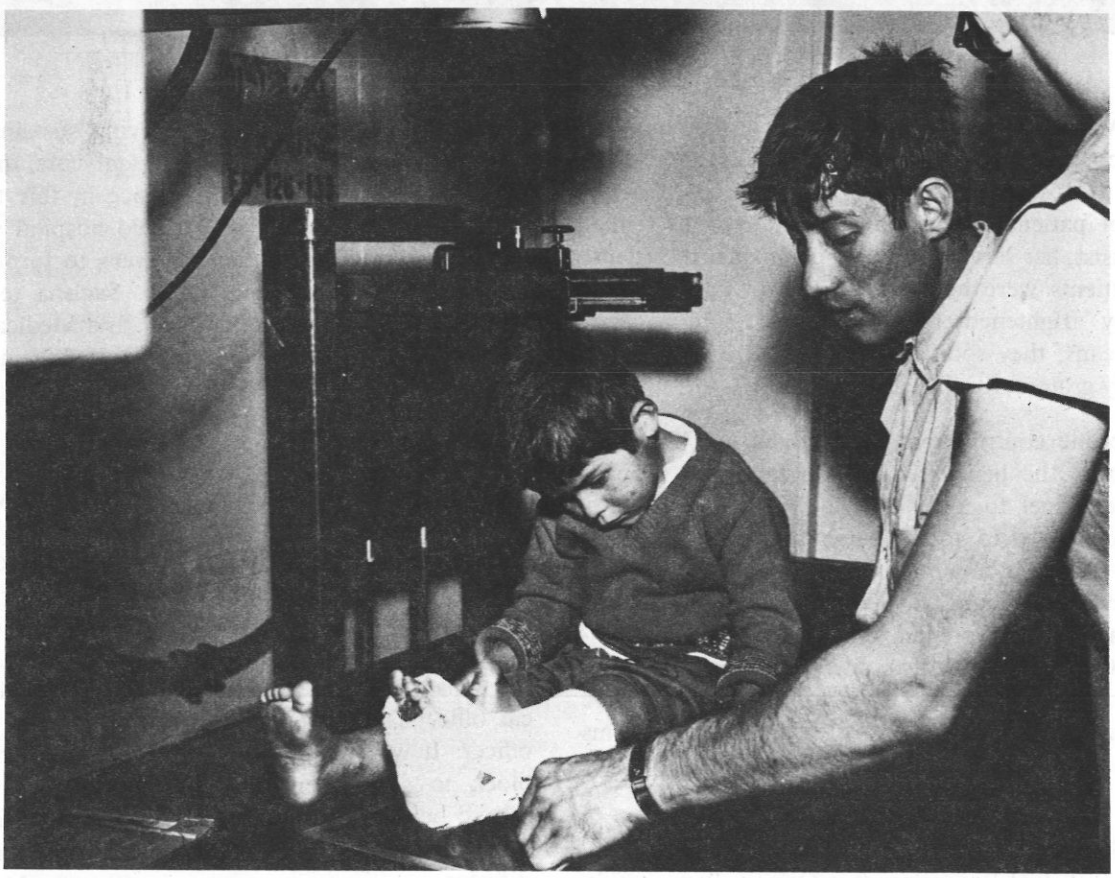
The officers in charge of the surgical teams and the senior enlisted men with prior experience in field medicine made a medical survey of Chimbote on the day of arrival, June 11, 1970 at 0700. It became immediately apparent that all casualties that had access to existing Peruvian medical facilities had been well taken care of and evacuated to adequate care centers in Trujillo and Lima. Adequate and sufficient beds were available at Chimbote, Casma, Paramonga and Barranca. It was determined that the most practical and helpful medical effort would be to evacuate patients from those villages which were remote from the coastline. Although a sorting and decontamination station had originally been proposed, this concept was abandoned in view of the smallness of the landing zone, the size of the helicopters and the short period of stay contemplated.

Embarkation of Peruvian patients commenced on June 13, 1970. It became immediately apparent that limited space precluded each surgical team working separately as an intact unit, therefore all three surgical teams combined their efforts, personnel, and supplies into one system.

Initial triage was handled by the general surgeons and treatment responsibility assigned to the remaining doctors on a rotational basis. During the period of active patient care, it appeared that 50 patients were a realistic number for active embarkation within the limitations of the ship's facilities. The casualties were primarily orthopedic in nature and had been without treatment for ten to 14 days. Fifty to 60% of fractures were open and infected; fractured pelvises, backs (with and without paraplegia), femurs, tibias, ribs and arms were included, in all degrees of severity. Thirteen surgical operations were performed and included débridement, amputation, re-amputation, and realignment of fractures; thirty casts were applied. Some open fractures had been treated by primitive methods such as the application of mud or animal dung; these required extensive débridement, and in one or two cases, amputation. A few female patients were pregnant, some in late stages of gestation, but did not go into labor while aboard the







GUAM. Approximately 75 to 80% of the casualties were composed of pediatric and female patients. A Peace Corps nurse who was visiting GUAM at the time of patient embarkation volunteered to remain and assist; her services proved invaluable. In general, the patients were hearty and stoic in nature; while initially frightened by strange surroundings and Americans, they soon responded well and were extremely grateful for the care provided.

A prime contribution provided by GUAM's aircraft, was the helicopter transportation of supplies and personnel to and from the mountain villages. Approximately 15 to 20 patients daily were transported from the mountains by helicopter to the aircraft carrier. Around 10,000 pounds of appropriate medical supplies were delivered to hospitals in Chimbote, Casma, Paramonga and Barranca. Approximately 30 medical kits of 50 to 75 lbs. each were constructed and issued to Peruvian medical teams which were flown into remote villages at high altitudes.

CDR Neugebauer visited a Chilean emergency hospital which had been placed at Casma, Peru, within five days of the earthquake. Having sustained two major earthquakes within the last ten years, the Chileans have had extensive experience in this type of disaster. It was learned that a field hospital was set up annually in Chile in remote areas to furnish free medical care to indigent people. Such a team included obstetricians, pediatricians, and Medical Service Corps officers who assisted in mobilizing their team and loading supplies and equipment aboard aircraft within 24 hours of an earthquake.

Based upon the experiences gained in providing medical support to the Peruvian earthquake victims, it was recommended by the senior medical officer aboard GUAM that the Navy organize a disaster team to consist of a senior medical officer, obstetrician, pediatrician, general surgeon, internal medicine specialist, preventive medicine specialist, two orthopedists, two anesthesiologists, four general medical officers and one Medical Service Corps supply officer. It was further recommended that a disaster block to supplement one or two surgical blocks should be designed for use in treating casualties and injuries which may be anticipated following a natural disaster.

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THE NAVAL DISPENSARY, WASHINGTON, D.C.

By Mr. W. Kenneth Patton, Medical Historian, Bureau of Medicine and Surgery

The Naval Dispensary has returned home.

While she may lack self-propulsion, a keel and a hull, the Naval Dispensary has been peripatetic during her lifetime. She is now in the process of being relocated in the Bureau again.

There are numerous Navy Dispensaries. None is of lesser importance than any other in the quality of medical and dental services provided. But in the eyes of pre-WWII Medical Department personnel there was one Naval Dispensary—THE Naval Dispensary, Navy Department, Washington, D.C.

Both officers and enlisted men desired and frequently requested assignment to duty at the Naval Dispensary, not alone for the prestige of it but for certain additional fringe benefits. Medical and dental officers assigned to The Dispensary were frequently assigned additional duty either in the Bureau and/or at the Naval Medical or Dental School. Enlisted men received subsistence allowances, since no quarters were available.

In at least seven different locations, the Navy Department Dispensary has functioned since the creation of the Bureau of Medicine and Surgery. The quantity and quality of professional services have grown enormously, commensurate with the growth of the Navy itself. No records are now available to indicate the extent of medical attention provided in the early years. Despite the lack of substantiating records, however, it is generally known that most Navy medical officers in the 19th Century engaged in private practice while assigned to shore duty. W. P. C. Barton, the first Chief of the Bureau of Medicine and Surgery, is known to have enjoyed an extensive private practice.

The Chief of BUMED and his assistant* very likely provided appropriate medical attention for Navy Department personnel, including the Secretary of the Navy. Prior to 1870 the entire Navy Department was housed in a relatively-small, three-story building just west of the White House. During the Reconstruction Period as the Nation and the Navy expanded, more room was needed. Additional space was acquired by renting various buildings in close proximity to the Navy Department—a practice long followed by expanding Government agencies.

The medical officers who were assigned to the Dis-

* For approximately 50 years, 1842-1890, no more than two medical officers' billets were authorized in BuMed.

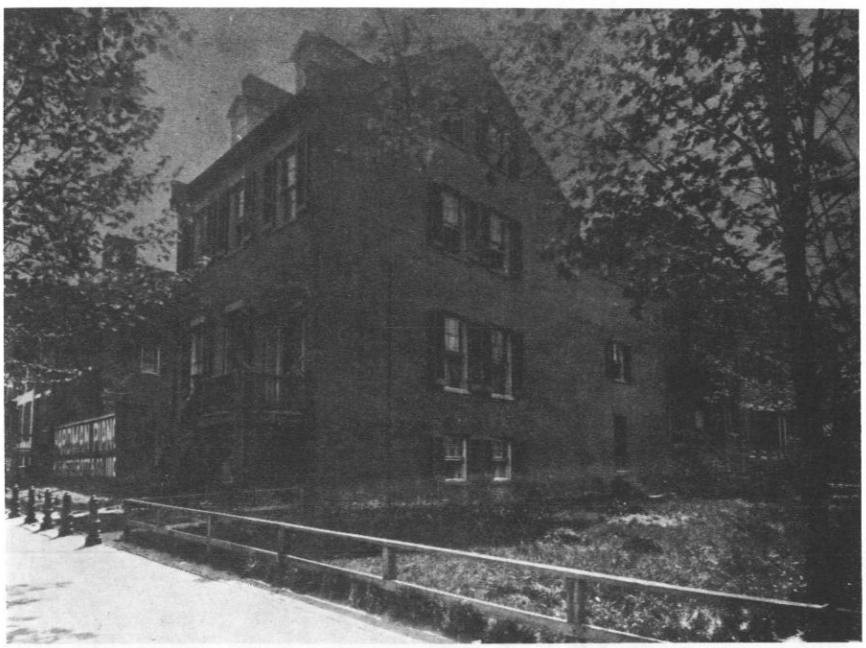


Fig. 1.—Southwest corner of 18th and K Streets, N.W., Washington, D.C. This building may have housed the Naval Dispensary circa 1880. We are unable to document this however.

Fig. 2.—18th & G Streets, N.W.

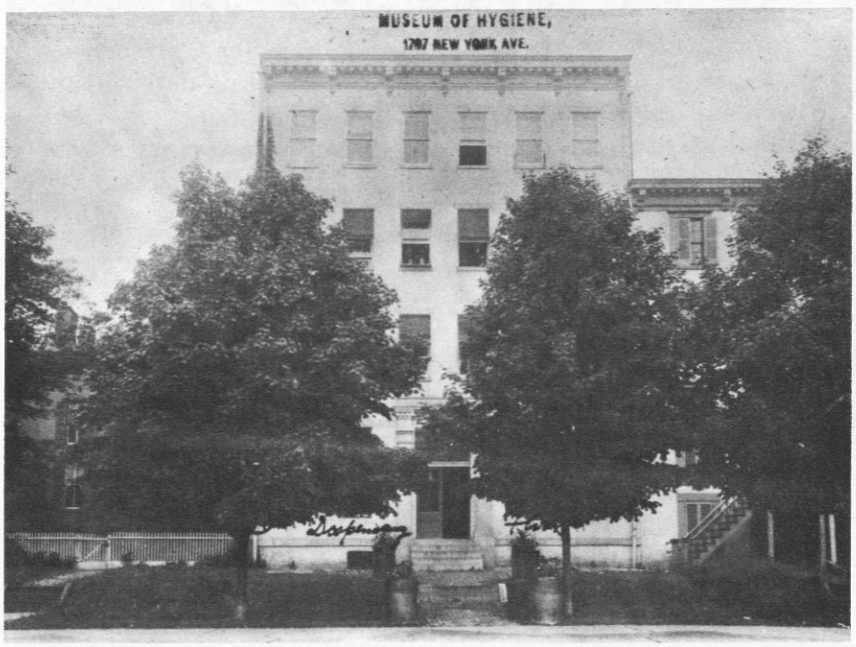


Fig. 3.—1707 New York Avenue.

Fig. 4.—Pharmacy Room in Naval Dispensary, probably in Mills Building.

pensary prior to 1880 are listed in Navy Registers as serving on "special duty". Apparently, it was common practice to order certain medical officers to the Bureau for a brief period, following an interesting or long cruise at sea, prior to determination of their next assignment. Some of these doctors then served either at the Dispensary or at the Museum of Hygiene.

The first medical officer specifically identified in The Navy Register as serving on duty at the Dispensary was Passed Assistant Surgeon Daniel M. Guiteras, who was the Medical Officer in Charge, 1881–84. Dr. Guiteras was preceded and succeeded by a long procession of medical officers, but it was not until 1917 that the Dispensary was designated as a separate command.

While some form of the Dispensary existed long before, its first official recognition (that has been documented) appears in the Report of the Surgeon General for 1882. At that time the Dispensary and the Museum of Hygiene were housed in a rented building at 1744 G Street, N.W. (Fig. 2). In-patient as well as out-patient care were provided; apparently a considerable number of house calls were made in connection with the medical care of Navy personnel and their families. Available statistics indicate a daily average in-patient census of eight to ten through the 1880's.

The G-Street location proved to be unsatisfactory —both in size and state of maintenance. In 1887, the Dispensary and Museum were moved to another, more commodious, rented building, about 200 yards distant at 1707 New York Avenue, N.W. (Fig. 3). In each of these two-story buildings the Dispensary occupied the ground floor and the Museum was located on the second floor.

The volume of patients and the number of exhibits in the Museum continued to increase. By 1894, both activities had outgrown their spaces. Fortunately, the Naval Observatory (23d and E Streets, N.W.) vacated its building and moved to the outskirts of Washington, on Massachusetts Avenue, N.W. The old Observatory building and grounds were acquired

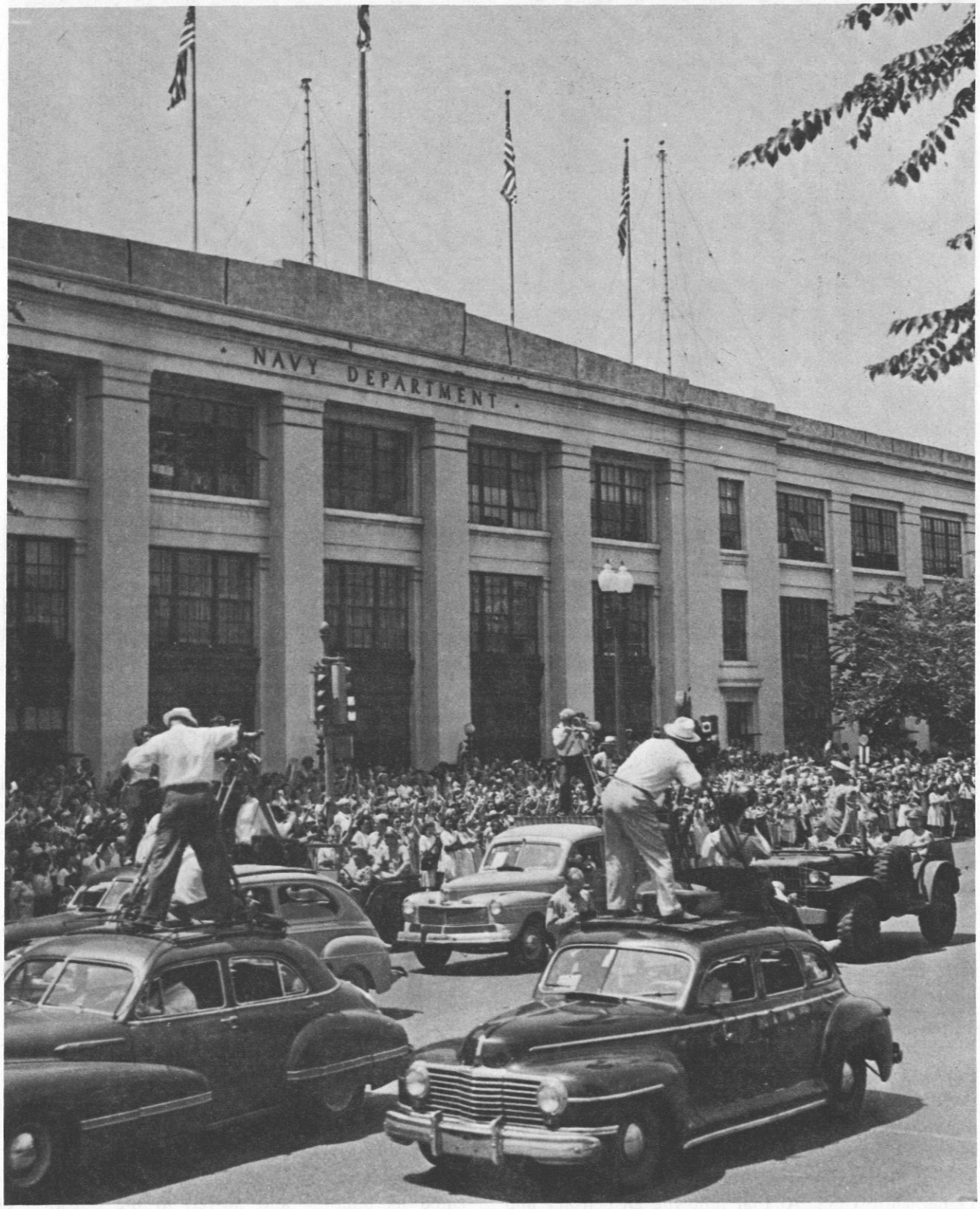


Fig. 5.—Main Navy Building at the time of General Dwight D. Eisenhower's return to Washington in May 1945.

by the Medical Department, and the Museum of Hygiene next occupied the former Naval Observatory, now designated Building 2, BUMED.

It is not certain how long the Dispensary remained on New York Avenue. In any case, sometime between 1894 and 1912, the Dispensary moved to the Mills Building at 1700 Pennsylvania Avenue, N.W. On 5 December 1912, another move took the Dispensary to 730 - 17th Street, N.W., where it remained for the next six years. All of these sites were within a radius of approximately 200 yards, in close proximity to the Bureau itself.

Vast expansion of the State, War and Navy Departments coincident with World War I, led to construction of (temporary) Navy and Munitions Buildings on Constitution Avenue. (As the Navy and Army moved out, the State Department remained at the Pennsylvania Avenue and 17th Street location which had formerly housed all three departments.) In October 1918, BUMED and the Dispensary occupied the ground floors of the 8th and 9th wings, respectively, of the Navy Building on Constitution Avenue. BUMED, of course, moved to its present location at 23rd and E Streets, N.W., in February 1942, when the Naval Hospital, Washington became the Naval Hospital, Bethesda.

For nearly 52 years, the Naval Dispensary remained in the 9th Wing of the Navy Department Building at 19th and Constitution Avenue, N.W. During that period not only was the Dispensary greatly expanded but several branches were created: at the White House; at the Capitol; at the Arlington Annex; at Tempo-8 and, most recently, at Crystal Plaza.

Through the years the Navy Medical Department has provided medical care for members of the Federal Government on all levels, up to and including the President. For approximately 50 of the past 70 years, the appointed White House Physician has been a Navy Medical Officer. Throughout many of those

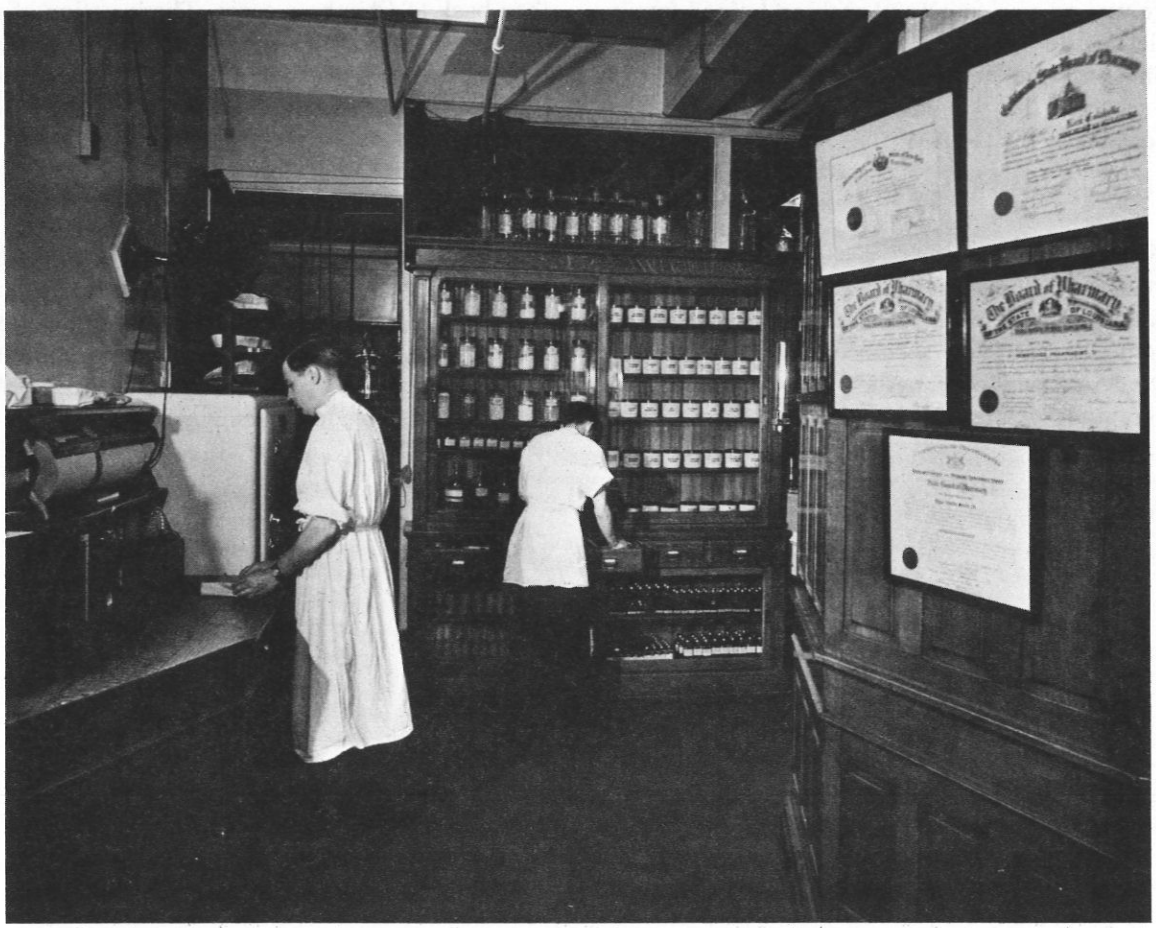


Fig. 6.—Front half of pharmacy room in Navy Department Dispensary photographed in 1944.

years, various Navy Medical, Dental and Nurse Corps officers, as well as Hospital Corpsmen, have been privileged to contribute in some measure to the health care of our Presidents. Since 1928, a Navy Physician, in attendance, has served the Congress at the Capitol.

By the end of 1970 the Navy-Munitions buildings, erected for "temporary" use in 1918, will have been demolished. With the demolition of the Old "Main Navy" Building on Constitution Avenue, Building 6 (which once served as a Contagious and NP ward) at BUMED will become the latest residence of the Naval Dispensary. As this first issue of Navy Medicine goes to press, remodeling and equipping of the first floor has been completed.

It will be several months before full medical services can be provided from the Bureau location. Without interruption after vacating Main Navy, emergency clinic, X-ray, clinical laboratory and pharmacy services have been available at BUMED, Building 6 since July 11. Until the second and third floors of Building 6 are made ready, the Commanding Officer and Administrative offices have been located at Tempo-8 (3800 Newark St., N.W.), where clinical medical services are also available until further notice.

Old Timers never bothered to locate the Naval Dispensary geographically, in references to it. "Is there any other?" they would answer when asked for the current address. There is much to indicate that this customary brevity and sentiment were highly realistic.

(Continued from p. 8)

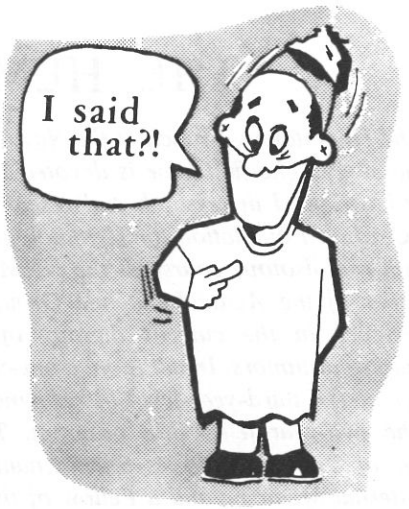
days until reaching his family that had received only emergency first aid rendered by a passing doctor. There was no way to get out with an injured family, nothing to do but wait for help. After 15 days of waiting, a Marine helicopter rescued them. Gangrene had set into the wounds. The entire family was treated aboard the GUAM.

For 11 days, Navymen and Marines worked around the clock as operations stretched from Chimbote to Paramonga, located 100 miles to the south, then back to Chimbote again. The insertion of medical teams where they were needed most and the continuous deliveries of food and shelter items gave the Peruvian people the opportunity they required to rebuild their homes and lives.

(Continued from p. 14)

From a personal viewpoint, the deployment of surgical teams offered a rare opportunity to visit an interesting country on a mission of goodwill. The personal satisfaction of participating personnel and the gratitude expressed by the Peruvian victims scored the mission as successful for the Navy, Medical Corps, and the United States. The lessons learned in organizing and implementing a civilian disaster medical force were highly beneficial. The potential for future application in serving mankind is both realistic and exciting to contemplate.

Read on Macduff...



The following "immortal classics" have been gleaned from numerous medical reports which have been brought to our attention. If you commonly sign reports without reading them, you may be dubbed Macduff. Names and identifying marks have been omitted to protect the guilty. The source material is so extensive that our readers are urged to assist by contributing any "Read on Macduff's" which may be encountered elsewhere.

There is significant loss of motion in the MP joint of the right hand. *Even more significant is the apparent loss of MP joints in the right hand.*

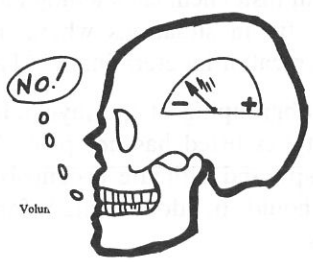
Eye grounds were benign. *Kindly disposed*?

. . . the right lateral fibula continuous nerve . . .

Tectal examination revealed brown stool to be present. *Fecalith of the brain stem?*

Pathology report was: "veriform appendix". *Truthful to the last.*

Examination of the right arm demonstrated a range of motion from 165° to 50° of flexion of the right knee and a full range of motion of his hip. *A disabled male puppet*?



X-ray report was "Negative skull".

The Addumdum to the Medical Board states. . . . *Dum de dum dum!*

. . . debridgement of brain . . .

The patient had a Pitti-Platt.

The right foot was clubbed on examination. *Brutal examination.*

Physical examination reveals a thin, dark, aesthetic, caucasian male. *A malnourished Addisonian who appreciates beautiful things.*

. . . mild, non-specific nasal bleeding . . . *Thank goodness it's not specific.*

Fracture, radial head, with small displacement fragment right ankle. *Small fragment maybe.*

The patient has been recalcitrant to any therapy. . . . *Obstinately defiant patient.*

He states that it has been determined that the wound was a gunshot wound by the doctors. *Acting out*?

It is felt that this could have been an ideological factor in the ulcer. *Philosophical duodenum*?

The Orthopedic Consultant felt that the amputation represented a complete functional loss of his left thumb activity. *An apostle of the obvious.*

The patient has a severe case of kidneys.

A glucose tolerance test was obtained which revealed that the patient was grossly overweight. *Amazing*!

. . . was wounded by shrapnel from a meteor explosion.

The patient was placed in a posterior long arm splint.

THE HEMATOLOGISTS' CORNER

The Hematology Branch at the Naval Hospital, Philadelphia offers a two-year fellowship program in general hematology. The first year is devoted to the clinical aspects of all forms of blood dyscrasias. The second year is oriented in research and research methodologies. The training program contains rotation blocks at the Cardeza Foundation for Hematological Research, Thomas Jefferson University, Philadelphia and the two-month radioisotope course at the NNMC, Bethesda, Maryland. The Hematology Branch is a participating member of the Acute Leukemia Group B Cooperative Study Program and the trainees receive extensive experience in the current therapy of the leukemias, malignant lymphomas, plasma cell dyscrasias, and certain solid tumors. In addition, a one-year training program in Oncology is offered by the Hematology Branch, either at the third-year-level in residency training in Internal Medicine or as an alternative in the second year of the two-year fellowship program. The Hematology Branch and training program are under the supervision of CDR Richard A. Burningham, MC, USN. Dr. Burningham is a Diplomate of the American Board of Internal Medicine and a Fellow of the American College of Physicians. Other members of the Branch include two clinical fellows LCDR Carl G. Kardinal, MC, USN and LCDR Neal Prendergast, MC, USN. During the year a series of informal seminars are presented which may be of interest to general medical officers and will be presented at periodic intervals in "Navy Medicine."

THE ACUTE LEUKEMIAS

By LCDR Carl Kardinal, MC, USN, and CDR R. A. Burningham, MC, USN,
Hematology Branch, Medical Service at Naval Hospital, Philadelphia, Pa.

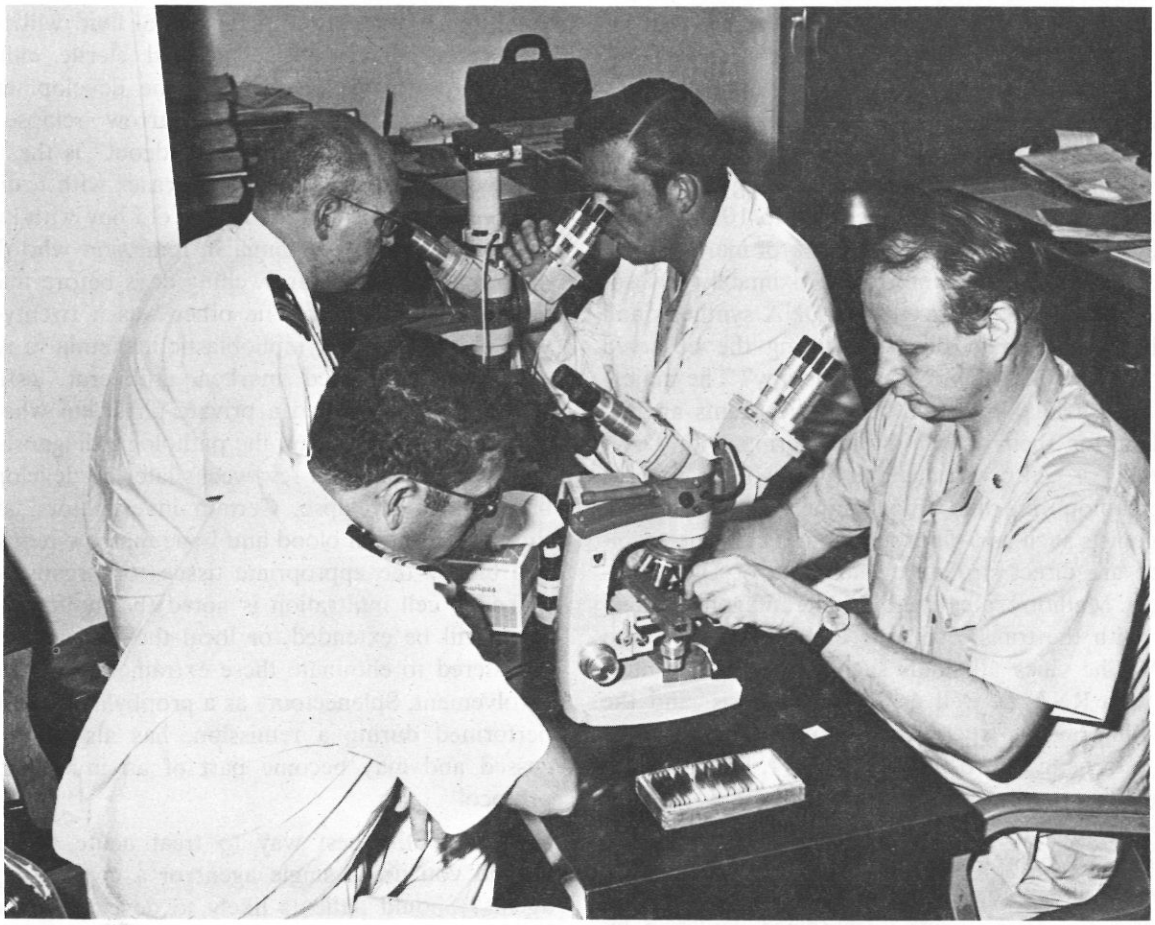
Acute leukemia with rare exception is a fatal neoplastic disease that can affect any individual at any time. In spite of extensive investigative efforts, the pathogenesis and pathophysiology of leukemia remain poorly understood. Frequently these uncertainties, as well as less than satisfactory therapy, create a sense of fear in patients and relatives, and a feeling of helplessness on the part of many physicians. Some hematologists[1] consider that certain forms of the disease should be left untreated, feeling that a rapid death is easier on the patient than the rigors of an intensive chemotherapy program. Others feel that the outlook for patients with leukemia is not hopeless[2], but rather should be viewed with cautious optimism. This argument is supported by well documented cases of long term survivors living active and productive lives many years after the onset of their disease[3].

It is the purpose of this article to review briefly some of the problems in the acute leukemias, particularly as they relate to diagnosis and therapy. As will be readily noted, many questions remain unanswered.

Until recently there was little object in attempting to classify the acute leukemias since no form of effective treatment existed, and the median survival time from the onset of symptoms until death was less than four months. In 1948 the folic acid antagonist, Aminopterin, was noted to induce remissions in selected cases of acute leukemia in children. The phenomenon of remission produced a great deal of excitement since for the first time a critically ill child with a blastic marrow, thrombocytopenia and bleeding, could be made transiently free of detectable disease. It was soon recognized that children were more responsive to chemotherapy than adults, and that certain types of acute leukemia were more responsive than others. Currently the acute leukemias are classified histologically into five major groups: acute lymphoblastic, acute myeloblastic, acute myelomonoblastic-Naegeli type, acute histomonoblastic-Schilling type, and erythroleukemia-DiGuglielmo's syndrome. Stem cell leukemia is absent from this list and the recommendation has been made that this term be abandoned in favor of the more specific cell type[4]. Although morphologic features remain the principal method for the differentiation of acute leukemias, recent advances in histochemical staining methods have been found useful in situations where morphologic features are atypical or indeterminant[4] (Table 1).

Currently, subgrouping of the myeloblastic leukemias into the types listed has not proved helpful in regard to therapy and ultimate prognosis. However, subgrouping should be documented for investigational purposes.

Length of survival in leukemia is chiefly dependent upon the ability to induce and maintain a complete remission, and it is toward this goal that all of the



CDR Burningham (right, front) discusses hematologic specimens with the residents and fellows.

TABLE 1

Type	*Peroxidase*	*Sudan Black*	*P.A.S.*	*Aryl-Sulphatase*
Lymphoblastic	—	—	—	+
Myeloblastic	+	+	—	—
Myelomonoblastic	+	+	—	—
Monoblastic	±	±	—	—
Erythroleukemia*	+	+	+	—

* Erythroleukemia may have peroxidase and sudan black positive myeloblasts, and P.A.S. positive erythroblasts.

currently available chemotherapeutic programs are directed. Several factors influence the ability to induce a remission, two of which have already been mentioned—the major cell type and the patient's age at the time of diagnosis. Childhood lymphoblastic leukemia has proved the most responsive to treatment with initial remission rates of 85% to 100% being reported, and the median survival increasing from 3.9 months to 33 months with the currently available forms of treatment. Adult myeloblastic leukemia has been more resistant to chemotherapy and the median survival has increased from 2.0 months when only supportive care was available, to 11.0 months currently[5]. However, the remission rates have improved from around 10% to 50% depending on age factors, the particular form of drug regimen employed and the quality of supportive care available.

Can better results be obtained? It has long been held that leukemia is a uniform, accelerated, uncontrolled proliferation of immature white cells, but investigations using tritiated thymidine[6,7] as a DNA label revealed that only 12% of leukemic cells took up the label, indicating that at any given instant in time only a small percentage of leukemic cells are actively making DNA. Experiments using continuous infusions of tritiated thymidine for 8 to 10 days have resulted in the labeling of 82 to 93% of marrow blast cells, never 100%. Therefore, approximately 10% of the leukemic cells never entered DNA synthesis and continued to remain dormant during the observed period. How does this relate to therapy? The majority of the available chemotherapeutic agents are dependent for their action on interfering with DNA synthesis or cell division. Purine antagonists such as 6-mercaptopurine and thioguanine, and pyrimidine antagonists such as 5-fluorouracil and cytosine arabinoside are direct structural analogues of DNA precursors. Methotrexate, the folic acid antagonist, interferes with the transfer of one carbon fragment into DNA. The vinca alkaloids such as vincristine interfere with RNA as well as DNA synthesis, and the alkylating agents such as cyclophosphamide, bis-beta-chloroethyl nitrosourea (BCNU), and busulfan act mainly on cells in the process of division. Either a means of inducing these cells into DNA synthesis is needed, or a completely new approach to therapy is indicated such as depleting the leukemia cell of certain essential amino acids—asparagine depletion by the use of L-Asparaginase for example, or by immunological methods.

Recent investigations[8,10] have shown some promise in regard to immunotherapy, especially in the maintenance phase of therapy. Mathé and co-workers studied thirty patients with acute lymphoblastic leukemia who achieved complete remission by drug regimens known to have antilymphoblastic activity. Ten patients received no further therapy after complete remission. Twenty patients received inoculations of B.C.G., irradiated pooled autologous lymphoblastic leukemia cells, or a combination of the two at weekly intervals until relapse occurred. The untreated group had a median remission time of 74 days. The median remission time in the treated group was 210 days, with eight patients remaining in remission 9 months or longer after the termination of drug therapy. However, similar results have also been obtained with the use of investigational chemotherapeutic agents[11].

Another problem in the management of acute leukemia is the concept of cell "hideouts". Not infrequently after bone marrow and peripheral blood remission is obtained, the patient will do well for months only to return with fever, headache, and vomiting. Examination of the spinal fluid will reveal blast cells, decreased sugar, and sterile cultures. Within two to six weeks after the development of meningeal leukemia[12], bone marrow relapse will occur. Another leukemic cell "hideout" is the testis. We recently have observed two cases with testicular involvement. One was a ten-year old boy with known myelomonoblastic leukemia in remission who developed marked testicular swelling days before marrow relapse was detected. The other was a twenty-one-year old male with lymphoblastic leukemia in remission who developed marked unilateral testicular swelling. He consulted a private physician who performed an orchiectomy; the pathologic diagnosis was "lymphosarcoma". A few weeks later he developed a bone marrow relapse. Certain investigators, at the time of peripheral blood and bone marrow remission, will biopsy the appropriate tissues or organs and if leukemic cell infiltration is noted the induction program will be extended, or local therapy will be administered to eliminate these extramedullary sites of involvement. Splenectomy as a prophylactic measure, performed during a remission, has also been discussed and may become part of an investigational protocol[13]

What is the best way to treat acute leukemia? Should you use a single agent or a combination of agents? Should patients likely to develop meningeal leukemia receive prophylactic intrathecal therapy? Is intrathecal methotrexate more or less effective than buffered cytosine arabinoside? Is the sequential use of chemotherapeutic agents less toxic than the concurrent use of such drugs? Should patients in complete remission be periodically "re-induced" even though they are free of detectable disease? Should a patient be maintained on the same or a different drug than that used during the induction phase of his treatment? An excellent review by Henderson in a recent publication[5] discusses some of the questions raised. Although not all the answers are known, many concepts are being actively investigated by cooperative study groups such as Acute Leukemia Group B, of which this institution is a participating member.

It is our opinion, since the answers to these questions are not known, that all treatment for acute leukemia should be considered investigational, and all patients with acute leukemia should be referred for treatment to investigational centers with the capability of providing the best care for these critically ill patients. These investigational protocol programs benefit the patients in many ways. Primarily they re-

ceive the best treatment available at investigational centers where physicians can apply "maximum care", a concept central to the treatment of critical disease.

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PORTABLE MUSCLE STIMULATOR

*By LCDR Helen W. Caldwell, MSC, USN (Retired).**

Patients with peripheral nerve injuries are among the most frequently treated casualties in Navy Physical Therapy departments. Electrical stimulation of the affected musculature is used in the treatment of these injuries. To provide for daily multi-treatments of muscle stimulation, a portable, battery-powered stimulator was designed for use at the Naval Hospital, Portsmouth, Virginia. It seemed logical that these stimulators be made in Occupational Therapy since the equipment needed was available there. The equipment used in construction included a bandsaw, drillpress, pliers, cutters, a work bench and a soldering iron.

Dimensions of the outside case are 1½″ x 2″ x 4″. Plastic, 3/16″ in thickness, was used in case construction. Other components included a radio battery, a rheostat, a miniature push-button switch, a male and female battery cap, parallel speaker cable and ¾″ copper discs such as those used in copper jewelry for cuff link backs.

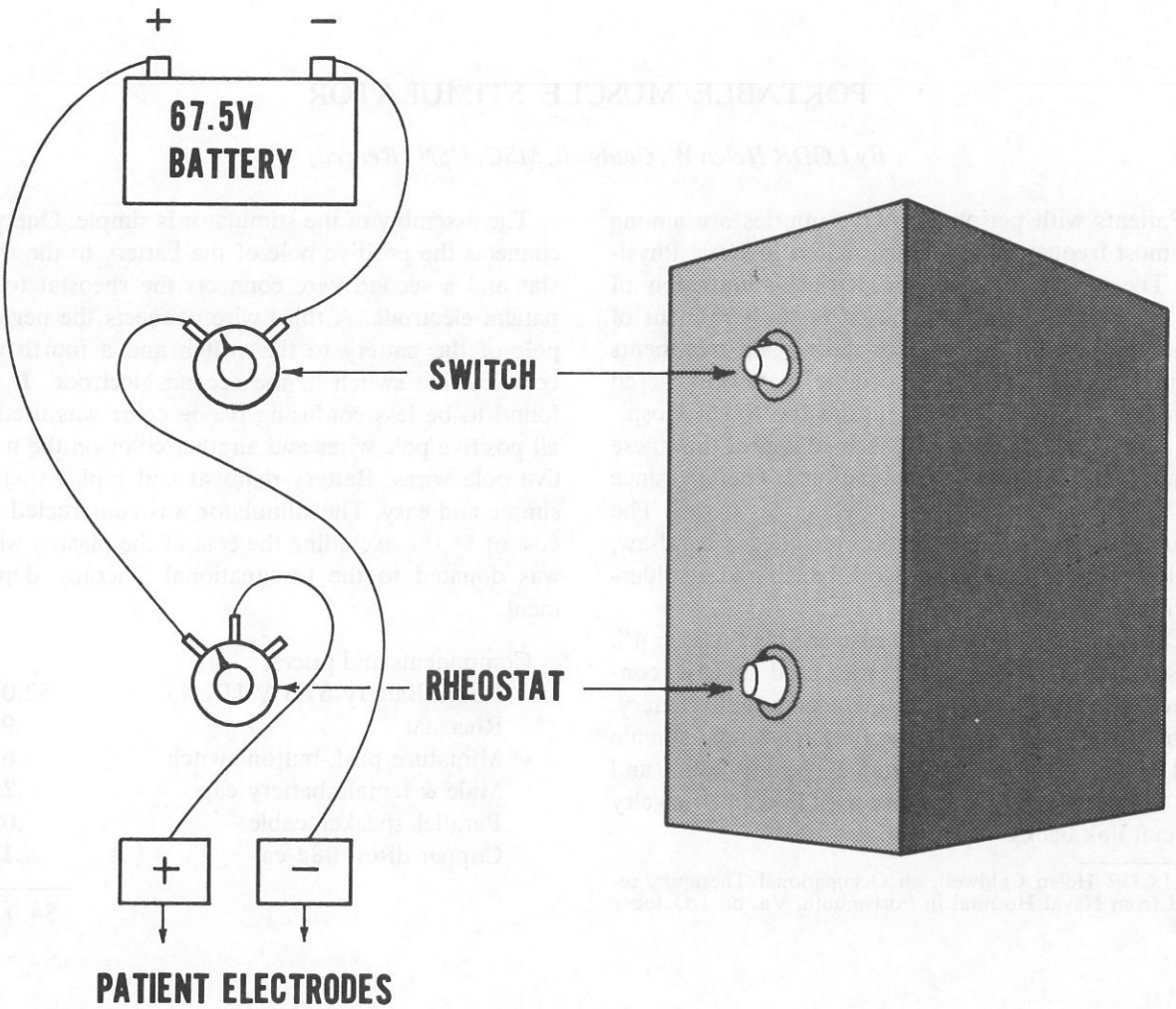
The assembly of the stimulator is simple. One wire connects the positive pole of the battery to the rheostat and a second wire connects the rheostat to the patient electrode. A third wire connects the negative pole of the battery to the switch and a fourth wire connects the switch to the second electrode. It was found to be less confusing if one color was used on all positive pole wires and another color on the negative pole wires. Battery removal and replacement is simple and easy. The stimulator was constructed at a cost of $4.06, excluding the cost of the plastic, which was donated to the Occupational Therapy department.

Components and prices:

Radio Battery 67.5 V UX 45	$2.07
Rheostat	.93
Miniature push-button switch	.63
Male & female battery cap	.25
Parallel speaker cable	.02 ft
Copper discs .08¢ ea.	.16
	$4.0 6

* LCDR Helen Caldwell, an Occupational Therapist, retired from Naval Hospital in Portsmouth, Va. on 1 October 1968.

WIRING AND EXTERNAL VIEW OF MUSCLE STIMULATOR



VASCULAR INJURIES*

A high index of suspicion must be maintained if the diagnosis of vascular injury is not to be missed. Unless a definite distal pulse is felt an arterial injury must be assumed until proven otherwise. In an extremity with multiple fragment wounds and a suspected arterial injury arteriography may help to locate the level of injury.

The presence of a pulse does not necessarily rule out arterial injury since distal pulses are usually present beyond false aneurysms and arteriovenous fistulae. Some arterial wounds are not diagnosed until wound débridement. This further stresses the importance of adequate débridement and thorough inspection of soft tissue wounds. Contusions of the artery without interruption of flow may be associated with an intimal tear with resultant thrombosis.

Thorough and complete débridement of all devitalized tissue is of the utmost importance at the initial operation. This does not preclude the need for re-débridement whenever and wherever dead tissue is identified. Before any type of arterial repair is attempted and particularly before a complicated repair is contemplated, the surgeon must assure himself that the extremity is salvageable. The repaired artery must be surrounded by clean viable tissue for nourishment and to prevent drying, thrombosis, infection, disruption and hemorrhage. Ligated vessels must also be covered by viable tissue.

A high percentage of arterial injuries in Vietnam are still being repaired by use of autogenous vein grafts. Prior recommendations which suggested that the injured vessel be debrided at least 1 cm beyond the grossly visible injury have contributed to this high rate of utilization of vein grafts. A microscopic study of 160 resected segments of artery have shown no correlation with the operative result obtained in the patients. The failure and amputation rate have been higher in those patients when vein grafts were used. It is therefore recommended that the injured blood vessel be debrided conservatively, serially if necessary, until in the judgment of the surgeon the artery is grossly normal and that a direct anastomosis be achieved whenever possible. An anastomosis must not be performed with the vessel under undue tension. Such will only result in spasm and thrombosis or disruption and hemorrhage. Neither excessive dissection, nor sacrifice of important arterial branches and collateral vessels should be practiced in order to obtain a direct anastomosis. If the defect in the artery is too great for anastomosis then a vein graft should be utilized. Vein grafts should be only of sufficient length to maintain normal arterial tension. Postoperative heparinization is not indicated.

Lateral repair in peripheral vessels should be avoided. The repair of popliteal trifurcation or brachial bifurcation vessels should be attempted when the viability of the extremity is threatened. Ligation of major vessels at initial surgery should be avoided.

The saphenous vein is the most useful vein for graft purposes. For lower extremity injuries involving both the artery and vein and requiring a vein graft, the saphenous vein of the opposite extremity should be utilized whenever possible to minimize further compromise of the leg's venous drainage.

In wounds with associated venous injury, vein repair should be performed where possible. Venous repair is accomplished by lateral suture, end-to-end anastomosis or venous replacement grafting using the contralateral saphenous vein.

If after adequate arterial repair a distal pulse does not return within three to four hours and there is concern for limb viability, there should be no hesitancy in re-exploring the arterial repair. There should be no urgency, however, if adequate capillary circulation is present. Before multiple reoperations are performed, the surgeon should equate the danger to the patient's life with the danger of loss of limb. Most limbs and some lives have been lost following repeated reoperations to salvage a vascular repair.

Late loss of a pulse with continued limb viability may not be, in itself, an indication for urgent reoperation. Ill timed re-explorations within the first four to six weeks after repair often result in a second failure of repair. Such patients should be returned to CONUS for repair. Many patients with absent pulses develop adequate collaterals and are asymptomatic. Further definitive operation should be undertaken only in CONUS vascular centers.

Hemorrhage following an arterial repair may be due to incomplete arterial débridement, faulty repair or infection. In the presence of a leaking arterial repair where gross infection is not evident, repeat repair may be successful with careful wound toilet and appropriate antibiotic coverage. Hemorrhage in the presence of gross infection should be controlled by ligation. If it appears that the limb will be lost

* Taken from proceedings of CINCPAC Fourth Conference on War Surgery, February 1970.

with ligation, then extra-anatomic venous by-pass may be considered.

Where positioning of the extremity is required to prevent undue tension the windowed cast or splint should not be removed for fourteen days.

The elective repair of stabilized, intact, uninfected traumatic arteriovenous fistulas and aneurysms should not be attempted outside CONUS. Such patients should be returned to a general hospital within CONUS.

Arterial injuries associated with an unstable fracture usually do not pose a significant problem if properly treated. Arterial repair must be done in a manner to insure adequate length of the artery when the fracture is reduced. Ideally, reduction of the fracture should be done with the arterial repair site in view to assure that there is no undue tension. Soft tissue should be placed between the fracture and the artery and a circular cast applied. These casts are to be bivalved and windowed to allow ready access to the arterial repair. Skeletal traction may be applied cautiously within ten to fourteen days if indicated. Internal fixation is condemned.

Fasciotomies are most often indicated after severe ischemia, prolonged lag time from arterial injury to repair, popliteal injuries, major venous disruption, and following significant soft tissue contusion. With evidence of compartmental pain or swelling, which may be minimal, fasciotomy should be done without hesitation. Skin incision should be adequate to permit full length incision of the fascia and inspection of the muscles. Skin incisions over the anterior tibial compartment should be placed well away from the lateral border of the tibia to allow opening of the anterior and peroneal compartments and to prevent adherence of the skin margins to the tibia. Both the superficial and deep groups of muscles of the posterior compartment may be decompressed by a posteromedial fasciotomy. Skin incisions are not closed primarily. They will usually require split skin grafts for closure at a later time.

Necrosis of muscles in the leg is not unusual following popliteal artery repairs. The anterior compartment muscles and the deep muscles of the posterior compartment are most vulnerable. When it is determined that irreversible changes have taken place, the involved muscles must be excised early.

Because of the danger of hemorrhage during air evacuation, patients with arterial repairs may not be evacuated for fourteen or more days. If there is any suspicion of infection or leakage, the patient should be retained in country until the question is resolved. If evacuation becomes necessary, the patient should be accompanied by a medical officer.

Carotid artery injury rarely causes special problems. Repair should be accomplished in an expeditious manner but haste or an internal shunt is not usually necessary unless there is no backflow. If there has been a delay in treatment and hemiparesis is present the vessel should *not* be repaired. Re-establishment of flow in such a case can result in death due to hemorrhage into the infarcted area of the brain!

Every attempt should be made at all levels to report names and identifying data of patients with vascular injuries to the Vietnam vascular registry at Walter Reed General Hospital. This is doubly important for any patients returned to duty outside of CONUS. This registry and study is proving extremely valuable to the military medical services with the names of five thousand patients registered to date.

ASSOCIATE EDITOR APPOINTED — Dr. Seymour L. Friess, Director of the Physiological Sciences Department of NMRI in Bethesda, Md., has accepted appointment as Associate Editor of the journal *Toxicology and Applied Pharmacology*.

CANNABIS

By CAPT Donald H. Gaylor, MC, USN, Naval Medical School, NNMC, Bethesda, Maryland 20014

Cannabis is the hallucinogenic drug derived from the plant *Cannabis sativa*. The best known forms of cannabis are marihuana and hashish, the latter being 6 to 8 times more potent than the former. Cannabis was first described in China in 2737 B.C.[1] By 800 B.C. it had spread to India and from there it was carried to the Middle East and North Africa. At a later date it appeared in South America and Central America. Although the plant was grown in the United States for its hemp, it was not until the turn of this century that use of cannabis for its hallucinogenic actions became noticeable. It was popular in the twenties and thirties among jazz musicians and certain social groups, until the passage of the Marihuana Tax Act of 1937.[2]

At the present time it is estimated that there are between 200 and 250 million users of cannabis in the world, making it the second most commonly used intoxicant.[3] Between 8 and 20 million Americans have used marihuana on at least one occasion. About 50 to 60 thousand of these individuals experiment with or regularly use other drugs.[4] It is estimated that the yearly value of cannabis traffic in the United States is well over 100 million dollars. In a 1968 poll, 70 percent of Stanford undergraduates admitted to at least one-time use of cannabis. In that same year over 50,000 persons were arrested in California for offenses involving marihuana; the majority of these were young adults, and the legal costs totaled 72 million dollars.[5] From 1966 to 1969 drug abuse investigations in the Navy increased 1000 percent, and in 1969 there were 3,800 administrative discharges from the Navy for such causes.[6]

The plant *Cannabis sativa* is a member of the Division Spermatophyta (seed plants), the Subdivision Angiospermae (flowering plants), the Class Dicotyledoneae (dicots), the Order Urticales, and the Family Cannabinaceae (hops and marihuana).[7] The plant is an annual, growing from seed each year, and has an upright stalk which attains a height of 3 to 16 feet, usually around 5 feet. It has palmately compound leaves with 5 to 7 leaflets, usually 7, and almost invariably odd in number. The leaf is similar in shape to a hand with the fingers represented as leaflets. These leaflets are pointed at both ends and vary up to about 6 inches in length and to about 1½ inches in width. The male and female flowers are borne on separate plants. At maturity the sex of the plant can be readily identified since the male flowers are very prominent while the female flowers are inconspicuous and hidden among the small leaves at the ends of stalks and branches. Prior to fertilization a sticky resin is exuded by the flowering plant. This pure, unadulterated resin is hashish.[8] After the resin has been removed, the remainder of the cut flowers and leaves is used to produce marihuana, a much less potent form of cannabis. The psychotomimetic activity of the plant is an agronomical phenomenon, and it is most potent in those plants cultivated in a warm, moist, sunny environment.

Pharmacological studies of cannabis indicate that the tetrahydrocannabinol (THC) fraction of the resin is responsible for the psychotomimetic activity. In 1965, Mechoulam and Gaoni reported the first total synthesis of delta-trans-tetrahydrocannabinol, providing a supply of the active constituent for research.[9] Isomers, as well as other cannabinols, are also believed to have varying degrees of hallucinogenic activity.

In the laboratory, proof of the identity of cannabis is obtained by macroscopic, as well as microscopic, visual examination. In addition, the acid chloral and Duquenois tests are performed. The presence of the isomers of THC can be confirmed by thin-layer chromatography or gas chromatography. Dried-leaf fragments usually retain their green color but may become brown or yellow. The leaf particles have a warty appearance which is caused by slightly bent hairs with spheroidal cystoliths at their bases. The seed with its outer covering, the hull, also has these hairs. Acid chloral reagent detects the presence of carbonate deposits in the cystolithic hairs by a carbon dioxide effervescence. The Duquenois test with chloroform extraction is specific and yields an indigo-violet color. It is imperative that a chain of custody be maintained for samples submitted for analysis because of legal problems involved with marihuana identification.[10] Recently, a commercially available kit, "Narcoban," has been made available for tentative "on-the-spot" identification of cannabis material.

Observations and investigations have revealed that the behavior effects of cannabis use, whether by ingestion or smoking, are greatly dependent on "set" and "setting." By "set" we mean the psychological

The opinions expressed herein are those of the author and do not necessarily reflect the views of the Navy Department or of the naval service at large.

This exhibit was recently designed and constructed by the Naval Medical School, at the request of the Surgeon General, in order to acquaint medical officers with the problem of Cannabis use. It includes a color, sound, film revealing the responses of two subjects during the smoking of five (5) marihuana cigarettes. Recent exhibition at medical conferences has resulted in an enthusiastic reception. It will be on view at the annual meeting of the Association of Military Surgeons of the United States in Washington, D.C. in November-December, 1970.

attitude of the subject; by "setting", the frame and mood of the subject's immediate environment while he is using the drug. The chronic user or "pothead" expects a euphoric result or "good trip", and usually has one. However, experiments have revealed that this is not always consistent, and an experienced cannabis user can have a "bad trip" or "bummer". It was noted in one experiment that a group of "naive" users smoking the same quantity of marihuana had little or none of the euphoria shared by chronic users.[11]

Acute toxic psychosis has been reported after cannabis use in Vietnam and in this country.[12] Among the central nervous system effects are distortions of time and space. Intellectual functioning is impaired, as revealed by short memory faculty, decreased speed and accuracy of digital test material, and decreased ability to concentrate and synthesize material. Psychological disinhibition occurs with a decreased control over judgment, lack of critical censorship, lessened willpower, increased dependence, as well as a decreased awareness of oneself and environment. Other phenomena include hallucination, delusion, psychoses, flashback, acute panic states, and hysterical episodes.[13,14]

The physical effects of cannabis use are varied and dose-related. Varying degrees of muscular incoordination can occur. Congestion of the mucous membranes of the airway is present in marihuana smokers. Conjunctival congestion is a universal finding and explains the day-and-night use of sunglasses in chronic cannabis users. Heart rate is increased, but

blood pressure is usually unaffected by the average amount of cannabis used. Although hunger is frequently noted as an effect, no changes in blood sugar have been measured. It may be the bulimia is caused by a central nervous system effect. Nausea, vomiting, and diarrhea occur when a form of cannabis, usually hashish, is ingested.[15]

Extracts of cannabis resin as well as THC have been shown to exert an embryocidal effect as well as teratogenicity in rabbits, hamsters, and rats.[16,17,18] Pupil dilation is not a constant finding and is not seen when synthetic or pure THC is used.

Long-term effects are not known and represent an area for needed research, which is recognized and being initiated by the National Institute of Mental Health. It has been suggested that the "skid rows" of Eastern countries may be caused by chronic cannabis use in contrast to Western skid rows being produced by alcoholism.

At the present time federal laws make possession of cannabis a felony punishable by 2 to 10 years in prison with optional fines up to $20,000 for the first offense. Penalties for sale are similar except there are no provisions for probation, suspended sentence, or parole. State laws range from a misdemeanor punishable by a small fine for possession, to life imprisonment or death for selling cannabis to a minor. Many people believe the total cost of such penalties far outweighs the derived benefits to society.[19] At the present time "The Controlled Depressant and Stimulant Drugs Act of 1969" is in Congress for consideration, amendment, and passage. Although several of its measures appear to be controversial, the overall effect is for the punishment to fit the crime; that is, to differentiate among first-time users, experimental users, "potheads," "pushers", and large-scale contraband operators.

Cannabis is a dangerous psychotomimetic drug, and the unpredictability of action increases with dosage. Drug dependence of the cannabis type has the characteristics of moderate to strong psychic dependence and absence of physical dependence with no evidence of tolerance.[20]

For the individual, abuse of cannabis results in apathy, lethargy, self-neglect, subjective increase of perceptive faculties and capability accompanied by failure to realize mature life goals. It may precipitate psychotic episodes. Use of cannabis facilitates association with social groups and cultures using other more dangerous drugs. The individual and his community suffer as he becomes asocial and antisocial.[21,22]

It is the responsibility of the physician to be aware of the many facets of drug abuse. He must honestly and objectively relate the known facts and dangers, whether he be in a civilian or military environment. At the present time, cannabis abuse is a critical problem of national significance.

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THE DIABETIC DENTAL PATIENT

By CDR James I. Johnson, DC, USN, and CAPT Homer S. Samuels, DC, USN,** Naval Hospital, Philadelphia, Pennsylvania*

The increasing frequency of either the occurrence of or the recognition of diabetes mellitus places increased responsibility upon the dentist in both general and limited practice of dentistry. The importance of understanding the type of diabetes, severity, stability of patient control, and complications is discussed.

Introduction

Almost all clinicians whether specializing or in general practice are confronted with the patient who is a known diabetic. Patients usually will not try to hide this disease when they are filling out the office history questionnaire. However, it is not enough for the dentist to ascertain that the patient is a diabetic and is "under control" as stated on his history. In treating a diabetic patient, a fundamental understanding of the nature of the disease by the dentist is essential.

Discussion

Diabetes is a chronic systemic disease characterized by disorders of (1) metabolism of insulin and of carbohydrates, fat and protein, and (2) structure and function of blood vessels. Early findings are usually related to the former while late findings in the disease are linked with complications resulting from vascular defects.

There are several clinical types of diabetes: (1) juvenile (youth onset, ketosis prone) which is related to a deficiency or complete lack of insulin and is most difficult to control, (2) maturity onset (ketosis resistant) which is characterized by stable control[1], and (3) labile brittle diabetes (ketosis prone, insulin sensitive) which represents 2-10% of all insulin dependent diabetic patients. Control is most difficult to maintain in the brittle diabetic.[2] The most common form of diabetes is the maturity onset type. Fifteen years ago two million persons in the United States were known to have diabetes. By 1970, the figure had risen to approximately four million.[3] It is believed that about 55% of diabetics are recognized, and of those remaining, about 1% to 1½% are diagnosed each year. It has been estimated that the number who now have or will develop clinical diabetes may exceed 10% of the population.[4] This becomes significant when it is realized that one of every ten patients under our care may become diabetic.

Treatment

Diabetic treatment consists of proper diet and the administration of hypoglycemic agents in injectable or oral forms. Even when hypoglycemic agents are employed, proper dietary management remains the most important factor in the treatment of diabetes. The dentist is in an advantageous position to be able to help the internist in motivating the patient toward more effective dietary control.

No hypoglycemic agent can restore to the diabetic patient a normal metabolic response to an unrestricted diet. For reasons that are not well understood, carbohydrate tolerance in the diabetic patient is reduced by the presence of obesity and often improves when ideal body weight is achieved. Diet then has two goals: (1) to provide proper quantities of food at regular intervals, especially carbohydrates, which meet the needs of the patient with least strain on his impaired homeostatic mechanisms, and (2) to maintain the patient at ideal body weight.[5] Of particular importance to the dentist will be the recognition of the obese, maturity-onset diabetic on an oral hypoglycemic agent, who states he is "under control". This patient may, in fact, demonstrate blood sugar levels of 200-400 mg% and be symptom-free. Dental treatment of this patient may well be complicated by slow wound healing and infection.[6]

Insulin control is generally held to exist in the presence of normal fasting blood glucose levels and maintenance of ideal body weight with freedom from acetonuria and hypoglycemia. However, postprandial blood sugar control of the insulin-dependent can seldom be expected to approach that of the normal patient.[7] In a study of 42 diabetic males, two-hour postprandial blood sugar values were found to be 76 mg. per 100 ml. higher than those reported at the fasting level.[8] In normal subjects this difference is not observed. Even in the closely monitored, well controlled diabetic periods of abnormally high blood glucose levels and oral complications of diabetes may develop.

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The opinions or assertions contained herein are those of the authors and are not to be construed as official or as reflecting the views of the Navy Department or the Naval Service at large.

The severity of diabetes whether mild, moderate, or severe is indicated by the extent of treatment required to control the disease and the patient's response to that treatment. Those who are adequately controlled by diet alone or diet and oral hypoglycemic agents may be considered mild diabetics. Oral hypoglycemic agents constitute the treatment of choice for properly selected patients who are resistant to ketoacidosis and whose diabetes had its onset after adolescence. These patients are usually able to withstand the stress of elective surgery with no significant change in blood sugar. Moderate diabetics are those who require one or two daily administrations of insulin for control. Severe diabetics seldom maintain satisfactory control despite two or more injections of insulin per day; these are the so called "brittle diabetics".[9]

The diabetic patient may develop ketoacidosis at any time when insulin dosage lags behind insulin requirement. Dietary excess, stress or the onset of infection may increase the insulin requirement and lead to hyperglycemia, ketonuria, then ketonemia and later ketoacidosis.[10] Treatment of the diabetic in ketoacidosis consists of administration of IV fluids, electrolytes, parenteral feedings and multiple insulin injections.

A surgical procedure can represent one of the greatest stresses diabetic patients may face. Control of mild diabetes can be disrupted by the strain of surgical trauma. The greatest disturbance in metabolic control probably occurs after major procedures of several hours' duration. Metabolic control is less likely to be disturbed during minor procedures which include atraumatic tooth removal.[11]

The increased frequency of infection in the diabetic is well known but the precise cause is not clearly defined. A partial list of contributing factors includes: (1) hyperglycemia, (2) antibody defect, (3) decreased complement, (4) decreased bacteriocidal power of the blood (defective phagocytosis by the granulocytes), (5) decreased liver glycogen, (6) deficient blood supply (due to microangiopathy), and (7) large vessel disease.[12]

One of the most important long-term complications of diabetes is small blood vessel disease which includes those disorders that affect the arterioles, venules, and capillaries. This aspect of the disease is referred to as microangiopathy. However, no definition of microangiopathy at the present time is acceptable to all investigators. Some use the term to encompass all microvascular disease; others consider that it refers only to lesions of the capillary basement membrane.[13] Clinical manifestations of arteriole disease are most commonly detected in the kidney and in the form of dry gangrene involving the lower extremities. Capillary involvement is diffuse and has been shown to involve the eye,[14] kidney,[15] muscle,[16] and skin.[17]

It is probably a combination of increased susceptibility to infection and microangiopathy (small blood vessel disease) which leads to the development of oral complications such as deep red mucous membrane color, chronic gingivitis, rapid progression of existing periodontal disease with marked alveolar bone loss, and susceptibility to formation of periapical abscesses.

Summary

Three types of diabetes have been discussed; the juvenile, maturity onset, and brittle forms of diabetes. The degree of control which is clinically achieved varies in each. Diet is a most important factor in controlling the disease. Insulin and oral hypoglycemic agents can improve blood sugar levels but will not eliminate the underlying metabolic defect.

The severity of diabetes is gauged by the required treatment and patient response. The diabetic patient's susceptibility to infection is well known but the mechanism is not clearly understood. A long-term effect of diabetes mellitus is microangiopathy which can involve almost all organ systems but particularly the eye, kidney, muscle and skin tissues.

Conclusion

Dental treatment of a diabetic patient requires a fundamental understanding of the nature of diabetes mellitus by the dentist. Close liaison should be maintained with the patient's physician to identify the type and severity of diabetes, the stability of control, and anticipated complications. The dentist can then intelligently determine the preferred timing of indicated dental procedures and ensure that appropriate prophylactic and therapeutic support will be provided. The total health care of the patient will be enhanced by the coordinated team effort of the attending physician and knowledgeable dentist.

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NEUROSURGERY*

Craniocerebral Trauma

Introduction:

We recommend that the order of priorities in multiple injury patients continue as delineated in all of the basic surgical texts. First attention must be dedicated to airway maintenance and control of bleeding. Only then do the separate problems relating to the head injury warrant attention.

1. Penetrating wounds—Management and Recommendations:

A. X-rays: Preop films in at least two planes. Postop X-rays in at least two planes as soon as possible after surgery. Stereolateral X-rays and image intensification fluoroscopy, when available, are frequently of great value in ruling in or out penetration of the cranial vault by metallic fragments.

B. Thorough débridement of skin, skull, dura and brain.

C. A meticulous search for any imbedded foreign material should be conducted, removing all such foreign material that can be removed without compromising vital centers of the brain or causing significant neurological crippling. Decisions as to the removal of bone fragments or intraventricular metallic fragments when they are in crucial areas require the exercise of the finest judgment of the well-trained neurological surgeon. Certainly all of these fragments to which access can be safely gained should be removed. Because of the previous dogmatic insistence upon the removal of all retained bone fragments, however small and regardless of where located, cases have been reported where repeat craniotomies and craniectomies have been performed to remove suspected retained fragments, and after extensive searching the bone fragments have not been found. In some of these cases because of the increased trauma to the brain, incident to the search for the fragments, significant worsening of the patient's neurological condition has resulted. In view of the factors cited, the arbitrary removal of small bone fragments from vital centers or neurologically important areas, when (1) the wound has been meticulously debrided without gaining access to the fragment, and when (2) the attainment of a route of access to the fragment would result in probable increase in risk to the life of the patient or probable significant neurological crippling, does not appear warranted. The decision must rest with the surgeon in each individual case as to whether a given fragment should be removed, based on all available information, including:

(1) Size of fragment.

(2) Location of the fragment.

(3) Possible routes of access to the fragment.

(4) Accumulated medical knowledge of possible complications resulting from retained intracerebral fragments.

* Taken from proceedings of CINCPAC Fourth Conference on War Surgery, February 1970.

D. Always achieve primary closure of dura or dural closure with pericranium, temporalis fascia, galea or fascia lata from the patient.

E. Always achieve primary scalp closure utilizing scalp flaps by rotational methods if necessary and covering the defect created with split thickness skin grafts at the donor sites if necessary.

F. Postoperative radiographs should be obtained on all patients. Management of retained fragments seen on postoperative films should be subject to the same considerations as outlined in paragraph C above. Also, under certain conditions of increased patient load and decreased combat area security, it is conceivable that the best course of action in stable patients, might be to air evacuate patients from the combat zone to the PACOM hospital system for their secondary procedures.

G. After extensive use of hyperosmotic brain mass reducing agents, an arbitrary restriction on the use of these agents does not appear warranted and no significant complications have resulted from their use.

H. Anticonvulsant medications are recommended in all cases of cortical damage.

I. Prophylactic antibiotics in all cases are recommended. See the section on antibiotics.

J. All CSF fistulas should be closed prior to further evacuation, if practicable.

K. Exenteration of the paranasal sinuses whenever they are involved should be carried out.

2. Tangential Wounds—Management and Recommendations:

Tangential wounds may appear on inspection as a minor injury. It should be remembered that these wounds frequently show severe dysfunction of the brain under intact coverings and should be treated accordingly.

3. General Recommendations:

A. Drains should be avoided except in unusual circumstances.

B. Bank dura or freeze dry dura should not be used.

C. It is suggested that radiopaque cottonoids and/or cotton patties with strings be used in the débridement of craniocerebral trauma.

D. Steroids such as Decadron and Solu-Medrol should be used in selected cases; however, these are not recommended as a routine measure. When used, withdrawal after 3-5 days is recommended.

E. Use of teflon substitutes in venous sinus repairs has been associated with significant infection and should be used with discretion. In repairing a venous sinus, probably the best material to be used for the sinus graft is autogenous dura. The donor site dural defect thus created can then be closed with autogenous pericranium, temporalis fascia, galea or fascia lata.

F. Gross brain infection should be treated with aggressive débridement. The open method should be considered when faced with extensive cerebritis and cerebral fungus.

G. Postoperative spinal taps may be of value, when indicated.

H. Arteriography is occasionally of value in the postoperative period, but seldom preoperatively.

I. Gram negative infections, particularly Pseudomonas, Klebsiella and Proteus, are far more prevalent in craniocerebral injuries than was heretofore suspected. For this reason, appropriate antibiotics should be seriously considered whenever contamination with these agents is suspected.

J. Frontal injuries with frontal sinus and orbit involvement require careful attention to water-tight dural closure.

K. The use of foreign substances such as gelfoam and bone wax should be kept to a minimum.

L. Craniectomy of the involved bone should be carried out in all cases of bony penetration. Some surgeons have expressed the opinion that in view of the gross contamination of penetrating craniocerebral war wounds, craniotomy should not be attempted, but only craniectomy used to gain intracranial access. Statistics showing the infection rate with craniotomy increased above the infection rate with craniectomy are not presently available and thus, this matter must be left to the judgment of the individual surgeons. If craniotomy is utilized, the probable increased resistance to infection provided by the vascular supply to the bone plate afforded by the myovascular pedicle of osteoplastic craniotomy as contrasted to the avascular free bone flap craniotomy should be considered.

M. Unless exigencies of the combat area dictate to the contrary, incisions for craniotomies/craniectomies should be made to provide the optimal cosmetic result. To this end, incisions should be kept well behind the hairline whenever practicable.

N. Air evacuation should not normally be undertaken in the presence of a significant quantity of entrapped intracranial air, unless aircraft with the capability of maintaining sea level internal pressure is used. While cerebrospinal fluid leak in itself is not an absolute contraindication to air evacuation, its presence in conjunction with entrapped air should dictate

against evacuation. The increase in CSF egress seen with decreasing pressure in these cases is undoubtedly coupled with an ingress of fluid and/or air when the cabin pressure again increases. This ingress will unquestionably carry with it significant elements of contamination, and should be avoided if conditions permit.

O. Whenever it appears likely that a fragment may have traversed the cranial vault, striking the inner wall of the vault at a point other than the point of entry, and therefore rebounding within the vault, at least an exploratory burr hole should be made at the suspected point of rebound. Frequently hematoma or brain maceration of significant magnitude will be found, dictating further definitive surgery and débridement.

Spinal Trauma

1. Treatment of compound penetrating injuries (usually by missile) of the spinal axis and its contents.

A. Early, adequate débridement of the wound following well proven, general surgical principles, with special attention to careful, complete laminectomy and removal of the devitalized bone fragments.

B. Complete decompression of the spinal cord or cauda equina, removing compressing bone or metallic fragments.

C. Maximum effort to obtain dural closure, utilizing lumbar fascia or fascia lata as necessary.

D. Isolation of the spinal wound from any other wounds. Experience suggests that leaving the laminectomy wound open followed by delayed primary closure may be the method of choice. (See paragraph E.)

E. The statistics on the mortality and the morbidity of certain combined wounds are alarming and require joint study and recommendations. Specifically, those compound wounds involving the spinal cord and the abdominal area, usually with involvement of the kidney or colon, subsequently developing infections have resulted in a higher mortality rate. Probably more adequate original débridement, better drainage of the area, and earlier attention to the febrile patient would result in improved mortality and morbidity statistics. Delayed evidence of spinal osteomyelitis has been noted. Of interest is the relatively low incidence of meningitis and the ability of the subarachnoid space to seal itself early in missile wounds. Those patients with meningitis, almost invariably have continued contamination by an abscess in communication with the spinal canal. In an effort to preclude this continued contamination, continuous perfusion/drainage of antibiotic solution via ingoing and outgoing catheters into the area surrounding the dural sac appear in a small series of cases to have considerably improved the morbidity/mortality of patients with combined and interconnected abdomino-spinal wounds. Such a continuous perfusion/drainage system probably is of even increased effectiveness if combined with a second such system led in/out through the abdominal wall, placed into the abdominal wound bed adjacent to the spine. Suggested fluid infusion rate is 50-100 cc/hr. Providing penetration of the antibiotic fluid to the more distal reaches of the wound by closing off the drain outlet tube from the wound bed for one hour of every four may be helpful. The routine early use of Colymycin, Polymyxin or Kanamycin in such wounds is probably advisable. Most of the battle casualty patients have had injuries involving multiple systems and have required a team approach. In these patients most often the neurosurgical aspect of the case is not the one of immediate concern. Nevertheless the neurosurgeon should be involved in the early care of the patient and delayed laminectomy is to be considered in the same light as delayed débridement. It is well known that early decompression of neural tissue gives the best hope for functional recovery.

2. Closed injuries with neurological deficit caused by missiles involving the abdominal or chest cavities or neck or pelvis without X-ray evidence of spine involvement.

A. Generally neurosurgical investigation is recommended when the patient's condition permits. Surgical intervention is undertaken at the judgment of the neurosurgeon depending upon his analysis of the pathology involved in the neurological deficit. Cases with complete block should be decompressed. There is a lack of unanimity concerning the value of surgery in other cases where block is not present.

B. High velocity missile wounds through the pelvis have been reported to have resulted in sacral fracture and disruption of the dura due apparently to the pressure/blast wave; at least without direct contact of the missile with the sacrum. A high index of suspicion should be maintained for such injuries, and if found, the usual measures to effect dural closures should be undertaken. Further, the measures listed in 1.E. above, as well as diverting colostomy, should be considered to eliminate continuing meningeal and cerebral spinal fluid contamination.

3. Closed injuries from blunt trauma.

A. The general principle of early neurosurgical

evaluation and treatment is again emphasized. However, one cannot be dogmatic about surgical intervention in all cases—the individual surgeon's training and judgment being most important in the specific situation.

B. The use of steroids is generally recommended.

C. Progressive neurological deficits demand rapid surgical attention.

D. In cases where (a) closed reduction of dislocation of the cervical area cannot be obtained by the usual skeletal traction methods, or (b) significant deformity of the spinal canal exists, either as demonstrated by plain X-ray or myelography, or (c) spinal canal fluid block is found at lumbar puncture or myelography, decompression laminectomy is indicated.

4. Other significant factors in the management of spinal cord injury are:

A. Suprapubic cystotomy is to be avoided unless it is absolutely mandatory.

B. Indwelling Foley catheter should be used during initial care and treatment. Complete agreement on the frequency of catheter change and irrigation and type of irrigation agents has not been attained. Antibiotics such as Mandelamine, Sulfonamides or Furadantin should be employed to minimize the urinary tract infections. The catheter should be attached to a closed system.

C. Intermittent catheterization either QID or TID is not desirable or practical under the present circumstances.

D. The catheter should be taped to the abdomen to avoid peno-scrotal fistulae.

E. Stabilization of the spine is seldom necessary in these injuries, and where indicated should probably be performed in CONUS after good wound healing, without infection, is assured.

F. The use of freeze dried bank dura or synthetic dural substitutes in the repair of spinal dural defects should be avoided.

G. Aggressive paraplegic or quadriplegic care with attention to pulmonary, intestinal and urinary tract function and prevention of infections should be maintained.

H. The use of the Stryker or the Foster frame is recommended and is mandatory for good skin care.

I. The possible masking of intra-abdominal pathology in the high paraplegic, or intrathoracic pathology in the quadriplegic, must be constantly considered. It must be remembered that rigidity, guarding and pain, and sometimes even fever are absent in these patients in the presence of intra-abdominal abscess, peritonitis, and fistulae. A high index of suspicion for such pathology must be maintained, and appropriate diagnostic procedures initiated early when such pathology is suspected.

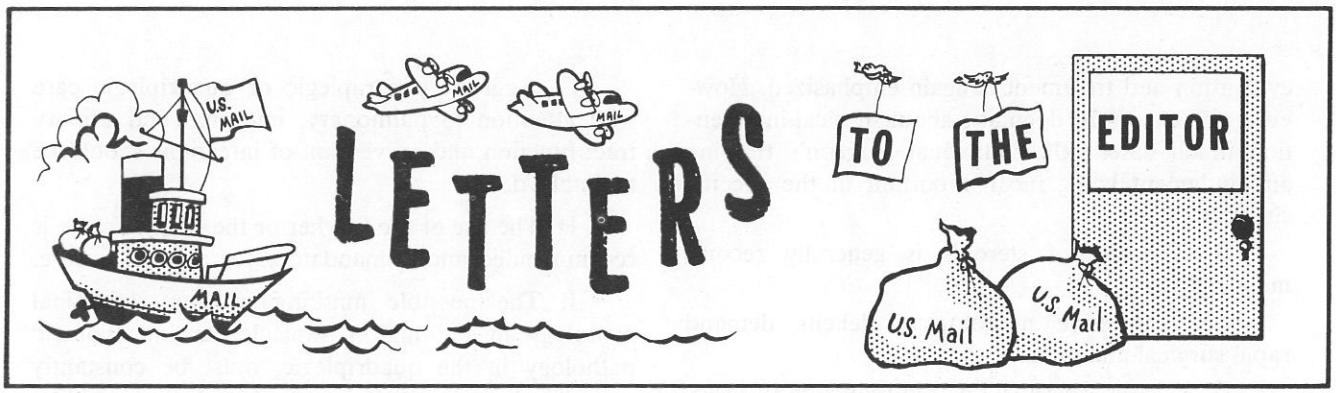
J. Paraplegics and similarly disabled patients should be evacuated to CONUS at the earliest time possible for early transfer to the special rehabilitative facilities of the Veterans Administration.

5. Non-battle injury, back pain management.

A. Patients with low back pain syndromes have been received in the PACOM hospitals and CONUS after myelography, but without corrective surgery. In some cases, the myelogram has been lost in transit or for some other reason did not accompany the patient. In other cases, although the myelogram accompanied the patient, further myelography in CONUS was required.

B. Certainly it is most desirable that myelography be performed by or under the supervision of the surgeon who is going to do the definitive disc surgery. Therefore, since elective disc surgery should not be done in the combat area, elective myelography in the combat area is not indicated. Further, unless a surgeon in the PACOM hospital system is prepared and expects to do the definitive disc surgery, he should defer myelography to the hospital which will be performing such surgery.

COMMITTEE ON PROSTHESES — CAPT David Q. Wilson, MC, now at AFIP, has been appointed to represent the Navy on the National Committee on Prosthetics Research and Development. The Committee is sponsored by the National Academy of Sciences.



JOINT MILITARY-CIVILIAN MEETING OF MEDICAL ADMINISTRATORS

To the Editor: Medical Department personnel in the COM 9 area have taken a step forward in establishing communication with their community counterparts.

The Military Medical Service Corps Officers of the Greater Chicago area held a joint luncheon with the administrators of the civilian hospitals in the area on 17 June 1970. This joint luncheon, sponsored by the Medical Administrative Officers of the Glenview Naval Air Station, and the Naval Air Reserve Training Command, was attended by 30 civilian administrators and 35 active and retired Medical Service Corps Officers from the Army, Navy and Air Force.

The guest speaker "Mr. Airevac," Brigadier General Harold F. Funsch, USAF, MC, Command Surgeon, Military Airlift Command, gave a presentation on the evolution of the Medievac system, potential capabilities, present and future plans of the AIREVAC System. His presentation included statistical reports of patients enplanned since 1966, routes of the present system, types of aircraft used and planned modifications of equipment for more efficient utilization.

Several administrators have inquired regarding applicability of some equipment, in use or being designed, for commercial utilization (i.e. in disaster control, or specialty care cases). The Medical Service Corps Officers from Fort Sheridan are coordinating for a display of the MUST for a group of civilian administrators in their disaster control planning.

LT George Gregory, MSC, USN, CNARESTRA, Medical Administrative Officer, spoke on the Reserve concept and its use in the present world power struggle. Not to be outdone by the Air Force, in action resulting from the presentation, one civilian administrator, a former naval aviator, has applied for affiliation with the Naval Air Reserve.

The good will and personal contact engendered can only aid our community relations; MSC groups might consider implementing these affairs on an annual or semi-annual basis. According to the correspondence received since the affair, the concepts and relationships established have been deemed most beneficial by the civilian health care administrators that attended.

LT A. R. Donohue, Jr., MSC USN
Medical Administrative Officer
NAS, Glenview, Ill.

Mutual effort between Federal and community medical groups is often cited by authorities as a means of enhancing health care delivery to all. Sharing of medical resources is promoted by the communication described by LT Donohue, and those activities with sufficient vision to foster such relationships find them most rewarding.

PROPOSED AMENDMENT OF TITLE 28, UNITED STATES CODE

By CAPT Richard E. Blair, JAGC, USN.

For years the Navy physician has operated under the shadow of potential state suits for alleged malpractice while performing his official duties in the Navy medical community. While no suit filed has ever resulted in a personal judgment against the Navy physician, the threat nevertheless existed, posing the alternative of procuring personal malpractice insurance to cover such an eventuality, or of risking such a suit going to judgment, and then relying upon the grace of the Navy and the Congress to rescue him via the private relief bill route. Legislation was enacted in 1965 (Public Law 89–311, 38 USC 4116) which immunized the Veterans Administration physician from personal liability in such circumstances.

On July 23, 1970, Senator Tydings of Maryland introduced a bill (S. 4112) which, if enacted into law, will repeal 38 USC 4116 and bring all Government employees under the protective coverage of the Federal Tort Claims Act. Senator Tydings' remarks in introducing the bill and the text of the bill as introduced are set forth below.

* * *

"Amendment of Title 28, United States Code, To Provide for the Defense of Suits Against Federal Employees.

Mr. Tydings. Mr. President, by the provisions of the Federal Tort Claims Act of 1946, the United States waived its sovereign immunity and provided for redress for damage to or loss of property or personal injury or death brought about by the negligence or wrongful act or omission of a Government employee while acting within the scope of his office or employment. The act provided that the United States would be liable to the injured party for such acts by its employees under circumstances where a private person would be so liable under the applicable State law where the act or omission causing the damage or injury occurred.

As originally enacted, the Federal Tort Claims Act did not provide a bar to an action against the employee personally, although a judgment in a civil action brought under the act would bar an action against the employee for damages arising from the same act or omission—28 United States Code, section 2676. In practice the continued right to sue an employee personally has not provided any additional meaningful protection for claimants.

In 1961 and 1965, statutes were enacted which barred personal action against two classes of Federal employees. In 1961, Public Law 87–258, the so-called Government Drivers Act, was enacted providing that suits against the United States under 28 United States Code, section 1346(b) for damages resulting from the operation of a motor vehicle by an employee of the Government while acting within the scope of his office or employment shall be exclusive —see 28 United States Code, section 2679(b) and (c) for procedures for its invocation. The 1965 act —Public Law 89–311, 38 United States Code, section 4116—provides similar protection for medical personnel of the Veterans Administration. Although bills have been introduced in subsequent sessions of Congress to provide other classes of employees with the same type of immunity from personal suit, no final action to provide such protection has been taken.

The time has come to provide such protection for all Federal employees in the discharge of their official duties. There is no reason why, for example, the driver of a Government vehicle or a Veterans' Administration physician should be so insulated while a physician or lawyer in another branch of the Government stands outside the charmed circle of such coverage, particularly since as a practical matter, the availability of the personal suit burdens the Government employee without significantly benefiting the potential plaintiff. In the military service, for example, the physician, functioning for the Government in the same manner as his counterpart in the Veterans' Administration must personally carry professional liability insurance or stand under the cloud of possible personal private litigation, litigation from which the Veterans' Administration physician has complete immunity. This untenable situation has an adverse impact on the retention of much needed physicians for career military service.

The bill that I am introducing today for appropriate reference, will eliminate the present inequity by repealing 38 United States Code, section 4116 and providing all Federal employees with immunity from personal liability in tort through the exclusiveness of remedy provision contained in the proposed amendment to 28 United States Code, section 2679(b).

In addition, this bill closes another avenue of possible action against a Federal employee by removing the possibility of suit in a State court, when an alter-

native system of benefits or compensation has been provided. In *Feres v. United States*, 340 U.S. 135 (1950), the court held that an injured serviceman was barred from suit under the Federal Tort Claims Act because Congress had provided an alternative system of compensation under chapter 61, title 10, United States Code. While this decision serves under the facts of that case as a bar to suit against the Government, it does not protect the alleged tortfeasor from suit in a State court, despite the fact that the injured party is entitled to or is in receipt of such alternate compensation. This bill clarifies the presently vague state of the law by making it clear that immunity is provided to the alleged tortfeasor, as well as the Government, when an alternate system of compensation has been provided.

The legislation that I am introducing today makes one other improvement in the law. Title 28, section 2680(h) in its present form subjects medical personnel, rather than the Federal Government, to personal suit because of a technical assault or battery arising out of the performance of medical, dental, or related treatment or clinical studies or investigations, because of the language excluding suits based on a theory of assault or battery from the coverage of the Federal Tort Claims Act. 38 United States Code, section 4116 provides protection from such claims to Veterans' Administration medical personnel. Section 3 of the bill repeals section 4116 and provides instead such protection for all Government medical personnel, including Veterans' Administration physicians or paramedical personnel, bringing them all under the same protection of the Federal Tort Claims Act.

In my opinion the protection that would be provided by this legislation to Government medical and other personnel, particularly those in the armed services, is long overdue. I hope that the legislation will be enacted this year.

I ask unanimous consent that the text of the legislation be printed in the Record at this point.

The Presiding Officer (Mr. Jordan of Idaho). The bill will be received and appropriately referred; and, without objection, the bill will be printed in the Record.

The bill (S. 4112) to improve judicial machinery by amending title 28 of the United States Code, to provide for the defense of suits against Federal employees, and for other purposes, introduced by Mr. Tydings, was received, read twice by its title, referred to the Committee on the Judiciary, and ordered to be printed in the Record, as follows:

S. 4112

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that section 2679(b) of title 28, United States Code, is amended to read as follows:

(b) The remedy against the United States provided by section 1346(b) and 2672 of this title, or by alternative benefits provided by the United States for injury or loss of property or personal injury or death, caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment, shall hereafter be exclusive of any other civil action or proceeding arising out of or relating to the same subject matter against the employee or his estate whose act or omission gave rise to the claim, or against the estate of such employee.

Sec. 2. Section 2676(d) of title 28, United States Code, is amended to read as follows:

(d) Upon a certification by the Attorney General that the defendant employee was acting within the scope of his office or employment at the time of the incident out of which the suit arose, any such civil action or proceeding commenced in a State court shall be removed without bond at any time before trial by the Attorney General to the district court of the United States for the district and division embracing the place wherein it is pending and the proceedings deemed a tort action brought against the United States under the provisions of this title and all references thereto. After removal the United States shall have available all defenses to which it would have been entitled if the action had originally been commenced against the United States under the Federal Tort Claims Act. Should a United States district court determine on a hearing on a motion to remand held before a trial on the merits that the employee whose act or omission gave rise to the suit was not acting within the scope of this office or employment, the case shall be remanded to the State court.

Sec. 3. Section 2680(h) of title 28, United States Code, is amended to read as follows:

(h) Any claim arising out of assault or battery (other than assault or battery arising out of the performance of medical, surgical, dental, or related functions including the conduct of clinical studies or investigations), false imprisonment, false arrest, malicious prosecution, abuse of process, libel, slander, misrepresentation, deceit, or interference with contract rights.

Sec. 4. Section 4116 of title 38, United States Code, is repealed.

Sec. 5. This Act shall apply to all claims accruing on or after the first day of the third month which begins following the date of its enactment." (See Congressional Record, July 23, 1970; p. S11958–S11959.)

* * *

The Navy physician would be thereby protected from possible personal liability in state actions brought against him on grounds of technical assault and battery. Such cases arise out of circumstances where the consent to an operative procedure is faulty. As an example, consider the case of consent to a laparotomy and "such other procedures that the physician deems necessary". The possibility of hysterectomy is discussed but not mentioned on the consent form. At operation the surgeon detects an advanced form of endometriosis and performs a complete hysterectomy. Technically he has committed assault and battery upon the body of the patient because of total failure of consent to the procedure, at least in writing. Under existing law the patient could bring a state action against the physician based upon a theory of assault and battery. The Tydings' bill would remove that possibility.

As indicated in the Senator's remarks, the bill also closes an apparent loophole left by the Supreme Court in *Feres v. United States*. While that decision bars an action by a serviceman against the U.S. under the Federal Tort Claims Act, it leaves open the possibility of a suit against the individual physician. The proposed amendment to 28 USC 2679(b) would foreclose that possibility.

If the proposed bill is enacted into law, no further need will exist for the Navy physician to carry his own malpractice or professional liability insurance to cover acts for which he may be held liable while performing within the scope of his employment. It will not protect him from acts beyond or outside of the scope of his employment, while practicing after hours in a civilian hospital, for example. Those physicians who engage in practice outside the scope of employment must satisfy themselves that they are adequately protected by liability insurance which they should procure.

GENITOURINARY TRACT WOUNDS*

Introduction

Genitourinary injuries are frequently associated with multiple organ involvement. In caring for urological wounds, the following recommendations are made and supersede previous recommendations of the War Surgery Conference.

General Considerations

1. Hydration, as necessary to maintain a 24 hour urinary output of at least 2000 cc, is extremely important in patients with any type of catheter or splint in the urinary tract in order to reduce encrustation and abolish the necessity for irrigations.

2. All splints and catheters should be securely taped and/or sutured in place near the point of exit. The urethral catheter should be taped in place on the lower abdominal wall. This prevents traction and pressure on the penoscrotal angle and reduces the incidence of urethral stricture, necrosis and fistulae.

3. All catheters should be connected to closed sterile drainage systems.

4. All patients with catheters in place should be treated with sulfonamides, nitrofurantoin, or Mandelamine to confine contamination to the bladder. Specific antibiotics should be reserved for complications or sterilization of the urinary tract after catheter removal. Acid urine is optimal.

5. Use absorbable suture on all urinary tract repairs, placing suture external to urothelium if possible.

6. *Strict* bed rest and vigorous hydration are of utmost importance in the conservative management of urinary tract bleeding.

7. Suprapubic cystostomy tubes should be placed 5 to 8 cm above the symphysis pubis to avoid trigonal irritation and bladder spasms and to permit easier access to bladder at subsequent surgery. Suprapubic tubes should be at least size 28 French to facilitate irrigation of clots. They should be replaced immediately if unintentionally removed. Probanthine may help relieve bladder spasms.

8. All urinary tract wounds should be generously drained. Drains should be secured by suture at the skin edge, and by safety pin to prevent retraction within the wound.

* Taken from proceedings of CINCPAC Fourth Conference on War Surgery, February 1970.

9. Urethral catheters should be large enough to drain urine and small enough to permit drainage of normal urethral secretions around the catheter. A meatotomy may be needed to enhance urethral drainage. A catheter no larger than size 16 French is advised. A larger size up to 24 French may be needed during episodes of bleeding to enhance irrigation and clot removal. After bleeding subsides the smaller size should be inserted.

10. Secretions around catheters and at the urethral meatus must be cleaned off and the urethra lubricated with an antibiotic ointment such as Bacitracin ointment. Cleansing of genital wounds and catheters should be performed several times daily.

11. Foreskins must be kept in the reduced position to prevent paraphimosis.

Renal Injuries

1. Non-penetrating renal injuries can be frequently treated without surgery, but surgery may be required in the more severe injury.

A. Non-surgical Management

(1) Diagnosis

(a) History of blunt trauma

(b) Finding of gross hematuria

(c) IV pyelography using *90–100* ml contrast material may be normal or show reduced excretion of contrast material, with or without clots in the collecting system. Obliteration of psoas shadow indicates perirenal hematoma and suggests more serious injury. Nonfunction alone is not an indication for surgery.

(2) Treatment

(a) Strict bed rest for ten days or longer until significant microhematuria clears.

(b) Gradual ambulation with monitoring of urine for recurrence of hematuria, the presence of which dictates resumption of bed rest.

(c) Blood transfusion may be required, but need for more than two units suggests need for exploration.

(d) Patient should not be returned to combat zone duty for at least 30 days after healing because of danger of delayed re-bleeding.

B. Surgical Management

(1) Diagnosis

(a) History and findings as above, except that exploration is indicated for:

1. Expanding flank or abdominal mass
2. Hemorrhage beyond two units of blood
3. Extravasation of urine (Urine extravasating into hematoma will create a severe phlegmonous reaction and sepsis requiring operation and usually nephrectomy at 10–14 days).
4. Arteriography and retrograde urogram are adjuncts to diagnosis which will probably be unavailable in the war zone.

(2) Treatment—Surgical management of blunt trauma is the same as for penetrating renal injuries. (2 B below)

2. Penetrating renal injuries should be explored and are usually associated with other abdominal injuries requiring exploration.

A. Diagnosis

(1) Suspicion of renal or urinary tract injury should be aroused in all injuries whose path may have traversed the urinary tract.

(2) Intravenous pyelography with oblique views using 90–100 ml of contrast material is essential before surgery to:

(a) Assure that a contralateral kidney is present if nephrectomy is required on the side of injury.

(b) Assess the damaged kidney and determine relation of foreign bodies to the urinary tract.

(3) Inject contrast material during triage so that pyelograms can be obtained with initial X-ray examinations.

B. Surgical Principles

(1) Anterior midline approach is usually dictated by associated injuries and affords access to renal pedicle.

(2) The renal vessels should be located and controlled with vascular nooses prior to opening Gerota's fascia and losing its tamponade effect. The renal artery may be occluded up to 20 minutes without damage. Intermittent occlusion may be used for longer periods.

(3) Reflect the colon medially and open Gerota's fascia laterally to assess the injury.

(4) Nephrectomy is performed for avulsion of the renal pedicle, shattered kidney, loss of more than 50% of parenchyma, or uncontrollable bleeding.

(5) Renal lacerations should be debrided of necrotic tissue. Arterial bleeders should be suture-ligated with chromic catgut. Penrose drains are essential.

(6) If partial nephrectomy is performed, the capsule is stripped from the portion to be resected. The knife handle is used to divide parenchyma, and vessels are suture-ligated with fine chromic catgut. The collecting system is closed with catgut. Capsule is used to cover the raw surface if available. Extra-

peritoneal drains are essential and should be maintained for ten days to insure drainage of any urine leakage.

(7) Bedrest is essential in renal injuries for at least three weeks to avoid secondary bleeding.

Ureteral Injuries

Ureteral injuries will be missed unless suspected, and preoperative pyelography with adequate amounts of contrast material is performed. Intravenous injection of 5cc indigo carmine or 10cc methylene blue at surgery will help demonstrate ureteral leaks. Ureteral injuries should be debrided and repaired primarily without tension using fine chromic catgut. Avoid simple circumferential scars which lead to stricture. Use oblique suture lines or spatulate both ureteral ends and approximate in a Z-plasty fashion. Drainage at the anastomosis is essential. A #6 or 7 French splint should pass from above the anastomosis into the bladder, and should extend to the renal pelvis. Proximal diversion is essential and may take the form of a proximal pyelostomy or ureterostomy of 1-1½ cm length with penrose drainage at the stoma. A nephrostomy with a #26 to 30 French Malecot catheter passed through parenchyma to the renal pelvis is the most secure, effective and preferable form of proximal diversion. It should be considered in all wounds of the renal pelvis and of the ureter above the bony pelvis.

Injuries of the ureter within the bony pelvis may be reimplanted obliquely into the posterolateral lower bladder wall, without tension and with a ureteral catheter splint-diversion extending to the renal pelvis, and with drains at the anastomosis.

If a ureteral defect is too large to be repaired, a nephrostomy is performed and the ureteral end is ligated to allow future reconstruction.

Tube pyelostomies and ureterostomies are discouraged because of the insecurity, tendency to obstruction and the difficulty of replacing them if they are dislodged. Splints and tubes should be maintained until the patient is under urological care.

Elective ureteral surgery and stone surgery should not be done in the war zone. A patient with an obstructing calculus who is not toxic may be considered elective and evacuated to urological care.

Bladder Injuries

1. Diagnosis

Hematuria, cystogram (filled and post-evacuation) demonstrating intra- or extra-peritoneal extravasation.

2. Treatment

A. Urethral catheter may be left in place until repair is accomplished, then removed.

B. Close laceration(s) with one or two layers of chromic gut and place a midline suprapubic cystostomy with a size 26 to 32 French Malecot catheter near bladder dome.

C. The space of Retzius should be liberally drained.

D. Irrigation as necessary for postoperative bleeding.

Urethral Injuries

1. Diagnosis

A. Bloody urethral discharge

B. Retrograde urethrogram using contrast material and water-soluble jelly in equal amounts.

C. Inability to pass catheter.

2. Treatment principles

A. Primary exploration of all urethral extravasation

B. Débridement of non-viable tissue

C. Reapproximation of urethra with 000 or 0000 chromic catgut over a #16 or 18 French catheter. In extensive wounds, suprapubic cystostomy and retrograde catheterization may be needed to locate the proximal urethra. If reapproximation cannot be accomplished, the catheter should be left in place during evacuation.

D. Liberal drainage of the wound

E. Associated rectal injury should have diverting colostomy, evacuation of rectal contents and coccygectomy for drainage.

F. Lacerations of the membranous urethra require careful reapproximation of the bladder and prostate to the lacerated urethra using a Foley catheter for traction and as a splint. Suture repair of these wounds is usually extremely difficult. The eyes of the suprapubic catheter and the urethral catheter should be sutured together to facilitate replacement if the Foley catheter balloon breaks. Drain the pelvis.

Penile Injuries

1. Tourniquet may be applied for ten minute intervals to facilitate débridement.

2. Debride conservatively.

3. Buck's fascia should be closed with interrupted chromic catgut to prevent herniation of erectile tissue.

4. The glans penis can be debrided and closed primarily.

5. Skin closure of the penile shaft may be primary

if the wound is clean. Delayed primary closure should be used if there is any question.

6. The denuded penis should have a protective dressing and evacuation to urological care is indicated.

7. In the event of massive wounds, suprapubic cystostomy may be needed.

Scrotal Wounds

1. Penetrating scrotal wounds should have exploration and débridement.

2. In testicular wounds, conserve as much viable testis tissue as is compatible with closure of the tunica albuginea. If no scrotal skin is available, bury the testicle in the soft tissues of the abdomen or thighs.

3. Drain all scrotal injuries with dependent drains.

4. Scrotal wounds can be debrided and closed primarily unless grossly contaminated.

5. A pressure dressing of fluff gauze and elastoplast will reduce swelling and discomfort. After 24 hours this may be replaced with gauze and a scrotal support.

Urological Care of the Acute Neurogenic Bladder

1. Suprapubic cystostomy is rarely necessary at the initial stage of treatment. Use a #14 to 16 French Foley catheter with good catheter care. Change catheters every seven days, or oftener if indicated by obstruction, infection or encrustation.

2. Straight closed system catheter drainage is preferred. Tidal drainage and intermittent clamping are unnecessary and to be avoided. If fluid intake is adequate, irrigations can be eliminated.

3. Urinary antiseptics are recommended, such as sulfonamides, nitrofurantoin, Mandelamine and ascorbic acid. Antibiotics are reserved for complications.

4. Tape the catheter to the abdomen to avoid tension on the catheter and urethral fistulae.

Testis Tumors

Tumors of the testis are the commonest malignancy seen in the military age group. They masquerade as a variety of more benign conditions and deceive the unwary physician. Any mass of the scrotum which cannot be excluded from the testis on examination should be considered to be a testis tumor and referred to urological care with the greatest urgency. We strongly urge that suspected testis tumors not be explored by the nonurologic surgeon. The extra day or two required for referral will result in more definitive surgery and a better chance of survival for the patient.

KNOW YOUR WORLD*

DO YOU KNOW?

That a diagnosis of Secondary Syphilis was made on a prostitute who produced from her diary the names of 310 sexual partners during the period 1 to 17 Feb 1970?

A driver for an interstate trucking firm was examined on 4 Feb 1970 at Sacramento County (Calif.) Health Department, where a diagnosis of Primary Syphilis was made. His wife, living in Nebraska, was examined and was free of syphilis. His contact, the prostitute, in another part of California, was located through a restaurant manager who provided her automobile license number, which was checked through the State registration files. Her contacts reside in 34 states, Canada and Mexico; a coordinated effort is underway to locate them.[1]

That in 1969, an epidemic of dengue occurred in Puerto Rico with a total of 16,665 cases?

Most cases were from northern countries. The illness was mild with sudden onset of fever and headache followed by muscle and joint pain, and rash. No dengue hemorrhagic fever was seen. This is the third dengue epidemic in Puerto Rico in this century. In 1963 dengue virus type 3 was isolated in Puerto Rico, and in 1969, dengue virus type 2.[2]

That in 1968, 178 cases of tetanus were reported in United States, two of whom had complete histories of immunization?

Preliminary reports show that in 1969 there were 174 cases reported.[3]

That in the State of Georgia, 66 communities have fluoridated their water supplies?

Approximately 2,000,000 people are served, including the city of Atlanta, which began fluoridation in 1969.[4]

That accidents caused almost 116,000 deaths in 1969 ,or 1,000 more than in 1968?

Motor vehicle fatalities increased to 56,000 in 1969, a new high despite less volume in travel. Job-

* Courtesy of BuMed, Code 72.

related fatalities in 1969 were 14,500 or equal to 1968. Home injury fatalities declined to 27,000 in 1969, 1,500 less than 1968 total. Catastrophic death toll was over 1,300, the same as in 1968, but below annual average for the past decade in the United States, excluding Alaska and Hawaii. Eight major catastrophies in 1969 resulted in 542 deaths. The largest natural catastrophy was the hurricane sweeping through Mississippi and Louisiana, killing 200 persons. The other four natural disasters were hurricane-caused floods in Virginia on 20 August, taking 80 lives; in California in January 1969, with 43 deaths; tornadoes in northern Ohio on 4 July killed 41; and tornadoes struck southern Mississippi on 23 Jan 1969 killing 32 persons. Civil aviation accidents in Indianapolis, Indiana, in September took 83 lives; crash of a scheduled plane into the Pacific near Los Angeles, California, in January 1969 took 38 lives, and a major catastrophy involved the collision of an oil barge and a freighter near New Orleans, Louisiana, in April 1969, taking 25 lives.[5]

That South Florida has a giant toad (Bufus marinus) which exudes a cobra-like venom through glands on its back?

Yellowish-brown in color with black markings, the toad is a nightfeeder which devours large quantities of insects. But it has proved lethal to small animals which attack it. The venom has several effects upon humans—attacking the nervous system, increasing blood pressure and heart action, causing nausea, severe headaches and paralysis. The toad is found as far north as Palm Beach County. Although health and agricultural officials are watching the situation, extermination would be extremely difficult because the pest scorns any type of poison bait.[6]

That Florida has an internationally-known research laboratory devoted to mosquito control at Vero Beach?

Unusual studies carried on there include an attempt to develop through inbreeding a species of mosquito with a reduced rate of survival. When bred with others of its race, the mosquitoes with altered chromosomes could eventually replace the present-day species. Another study seeks to relate the mosquito flights and behavior to the amount of food the insects consume. Still another study seeks to decrease the amount of time needed to find viruses mosquitoes carry in the environment. Pools of 1,000 mosquitoes of all species are tested for viruses and this is expected to permit rapid delineation of geographic areas in which a virus is prevalent, leading to a detailed study of the area.[7]

That in May 1969, the NCDC Atlanta, the Agency for International Development and the U.S. Air Force teamed up with the Government of Ecuador and the Pan American Health Organization to stop a major epidemic of Venezuelan equine encephalomyelitis (VEE)?

The outbreak, restricted to coastal Ecuador, involved 20,000 human cases—in younger age groups, resulting in 200 deaths, and between 30,000 to 60,000 equine deaths with 60% or greater fatality rate. This was the largest outbreak of VEE in Ecuador since early 1940.

Mosquitoes in the area were controlled by ultra-low volume spraying of Malathion. Two U.S. Air Force C–123 aircraft sprayed 100 barrels of technical malathion at the rate of three ounces per acre, covering 259,675 acres during a 9-day period. An estimated 90 to 95% kill of mosquitoes was achieved in the areas checked, and a low population prevailed for five to eight days before buildup.[8]

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4. Mass Dept of Public Health, "This Week in Public Health," Vol 19(19): 188, 11 May 1970.
5. Metropolitan Life, St. Bull Vol 51:10 Jan 1970.
6. STATE OF FLORIDA "Health Notes," Vol 62(2): 53, Feb 1970.
7. STATE OF FLORIDA "Health Notes," Vol 62(4): 106, April 1970.
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INFORMATION SHEET FOR INTERNSHIPS
TO BEGIN 1 JULY 1971

Facts

1. The Navy has 184 approved internships available in 42 individual programs in 9 Hospitals (see listing below).

2. Naval interns are matched through the Matching Plan directly to specific programs in specific hospitals. However, applications are considered in the Office of the Surgeon General by the Navy Intern Selection Committee in consultation with the individual hospital program directors. Therefore, applications should be forwarded to the Intern Committee in accordance with instructions furnished with the application forms.

3. There is no obligated service required in return for an internship in a naval hospital. Male interns who have served a minimum of twelve months of prior active service and female interns can be released from active service after internship, if they so desire, unless otherwise obligated by law or contract.

4. Naval interns usually stand watches no more frequently than one out of three weekdays and weekends.

5. Approximate annual income (effective 1 July 1970):

	With Dependents	*Without Dependents*
Lieutenant (during internship)	$11,754.36	$11,453.76
Lieutenant (immediately following internship)	$12,954.36	$12,653.76

6. Medical officers in the Navy who serve internships in naval hospitals can be promoted to Lieutenant Commander one year earlier than those who serve internships in civilian hospitals.

7. Medical officers in the Navy who serve internships in naval hospitals are entitled to increased doctor's incentive pay one year earlier than those who serve internships in civilian hospitals.

Internships Available 1 July 1971

For information consult: Surgeon General, Navy Department, Washington, D.C. 20390
For program review consult: Program Director
For application consult: Your local Navy Recruiting Station

Hospital	*Program Director*	*Positions*	*Types Offered*—See Legend* page 48
California			
Naval Hospital *Camp Pendleton,* Calif. 92055	R. R. Anderson CAPT, MC, USN	10	Rotating 0

Hospital	*Program Director*	*Positions*	*Types Offered*
Naval Hospital *Oakland*, Calif. 94627	V. L. Goller CDR, MC USN	16 2 1 1 2 2 2	Rotating 0 Rotating 1 Rotating 2 Rotating 3 Rotating 4 Straight Med Straight Surg
Naval Hospital *San Diego*, Calif. 92134	R. G. Fosburg CDR, MC, USN	29 6 4 2 2 3 2	Rotating 0 Rotating 1 Rotating 2 Rotating 3 Rotating 4 Straight Med Straight Surg
Florida			
Naval Hospital *Jacksonville*, Fla. 32214	L. H. Seaton CDR, MC, USN	10	Rotating 0
Illinois			
Naval Hospital *Great Lakes*, Ill. 60088	F. M. Highly CDR, MC, USN	5 4 1	Rotating 0 Rotating 1 Rotating 2
Maryland			
Naval Hospital *Bethesda*, Md. 20014	R. J. Van Houten CAPT, MC, USN	12 4 2 2 2 3 2	Rotating 0 Rotating 1 Rotating 2 Rotating 3 Rotating 4 Straight Med Straight Surg
Massachusetts			
Naval Hospital *Boston,* Mass. 02150	J. M. Young CDR, MC, USN	4 3 1 1 1	Rotating 0 Rotating 1 Rotating 2 Straight Med Straight Surg
Pennsylvania			
Naval Hospital *Philadelphia,* Pa. 19112	R. R. Duhamel LCDR, MC, USN	4 4 2 2	Rotating 0 Rotating 1 Rotating 2 Straight Med
Virginia			
Naval Hospital *Portsmouth,* Va. 23708	R. T. Upton CDR, MC, USN	17 3 2 2 2 2 3	Rotating 0 Rotating 1 Rotating 2 Rotating 3 Rotating 4 Straight Med Straight Surg

*Legend

Rotating 0	4 months medicine, 4 surgery, 4 elective
Rotating 1	6 to 8 months medicine plus electives
Rotating 2	6 to 8 months surgery, 4 medicine (electives as time permits)
Rotating 3	6 to 8 months OB-GYN, 4 months medicine (electives as time permits)
Rotating 4	6 to 8 months pediatrics, 4 medicine (electives as time permits)
Straight Medicine	12 months medicine, and sub-specialties thereof
Straight Surgery	12 months surgery and sub-specialties thereof

AVIATION MEDICINE COURSES

The recently revised correspondence courses "Aviation Medicine Practice" and "Medical Service in Joint Oversea Operations" are now available to officers and enlisted personnel on reserve or active duty status with the Medical Department of the Navy.

Aviation Medicine Practice, NavPers 10912–B contains six assignments with credit of twelve points. A new text "U.S. Naval Flight Surgeon's Manual," provides the latest information concerning the medical aspects of flight, including physiology, psychology, and pathology as related to personnel operating within the aerospace environment. In addition, sections are devoted to survival, safety, and occupational requirements of the Flight Surgeon.

Medical Service in Joint Oversea Operations, NavPers 10769–A, contains two assignments with a credit of four points. The course covers the functions, doctrine, and organization of the medical services of the Army, the Navy, and the Air Force. It outlines the interaction and employment of these medical services in unified and/or joint operations.

Naval Reserve personnel may be credited with retirement points upon satisfactory completion of the courses, if eligible to receive them under current directives. Personnel who have completed the earlier versions may receive additional point credit for completing the revised courses.

Requests for enrollment by all personnel should be forwarded via official channels on NavPers Form 1550/4 (with appropriate changes in the "to" line) to the: Commanding Officer, Naval Medical School, Bethesda, Maryland 20014, Attn: Correspondence Courses Division.—From PAO, Naval Medical School, NNMC, Bethesda, Md.

NMS COURSES FOR NURSES

During the year Navy Nurses have the opportunity to apply to attend short courses in administration, supervision, teaching and nursing specialties at the Naval Medical School, National Naval Medical Center, Bethesda, Maryland. The most recent program was "Nursing in Outpatient Departments and Emergency Rooms" held, 22–26 June 1970. Twenty-five Navy Nurses took part in the course which covered a wide range of subjects applicable to ambulatory patient services. Included was a presentation on the utilization of computer systems for storing and rapidly presenting total medical information about a particular patient.

Short courses planned for the fall of 1970 include Neuropsychiatric Nursing, 21–25 September and Pediatric Nursing, 16–20 November.

PT-OT SUPERVISORS HOLD FIRST CONFERENCE

For the first time in history, the senior occupational and physical therapists from the seven large naval hospitals gathered at Bethesda for a three-day clinical supervisors conference. The conference was held 24 through 26 June 1970 and was designed specifically for the supervisors of new graduates in Physical and Occupational Therapy Technic NEC HM–8466. The supervisors guide the new technicians assigned to them through four months of clinical experience. The four-month clinical training period follows the 28-week didactic course at the Naval Medical School in Bethesda, Maryland.

This was the first time that many of the clinical supervisors had ever seen the school at Bethesda or met each other. They found the experience of meeting each other and seeing the facilities tremendously helpful and satisfying. Exchange of ideas took place at a rapid rate, and a good start was made toward bringing clinical education and the academic phase of the program closer together.

Educational institutions in the civilian community have long promoted regular conferences of this nature for the clinical supervisors of their students. Thus, in addition to marking an improvement in this particular educational program, this conference marks one more milestone in coordinating didactic instruction, clinical training and practice of occupational and physical therapy throughout the Navy.

NSHCA CLASS OF 1967 MAKES ACADEMIC HISTORY

In an open letter to all graduates of the Naval School of Health Care Administration, Class Number 28, the Chief of the Medical Service Corps, CAPT E. L. Van Landingham, Jr., cited the academic achievements of the class members. In this particular class of 36 students, 15 have earned baccalaureate degrees and three have earned the Master's degree.

The following officers have received their Master's degrees:

	Academic Institution	*Present Assignment*
LCDR B. E. Weems, MS, NavMgt	PGS, Monterey	NH, Camp Lejeune
LT A. R. Rath, MS, NavMgt.	PGS, Monterey	NTC, Orlando
LT A. O. Woods, MBA (HCA)	GWU	NH, Oakland

The following officers have received their Bachelor's degrees:

LCDR H. W. Bleh	GWU	NAS, Norfolk
LCDR W. E. Branscum	GWU	USNH, Guantanamo Bay
LCDR D. E. Cassel	Chaminade Col.	NH, Charleston
LCDR K. L. Darr	GWU	First MarDiv
LCDR T. J. Delaney	GWU	PGS, Monterey
LCDR M. L. Fitts	GWU	BUMED
LCDR W. R. Peterson	GWU	BUMED
LCDR P. T. Ray	GWU	NDC, Wash., D.C.
LCDR H. B. Taylor	GWU	NH, Philadelphia
LCDR J. R. Tucker	GWU	NH, Quantico
LCDR J. R. Turner	GWU	BUMED
LCDR J. P. Walsh	GWU	MCAS, New River
LT F. D. R. Fisher	GWU	NH, Bethesda
LT F. D. Gillespie	GWU	NMS, Bethesda
LT J. D. Rosplock	GWU	NNMC, Bethesda

It is encouraging to note the overall academic progress of NSHCA Class Number 28 graduates. Almost half of the class has earned at least a baccalaureate degree, and another third is actively pursuing educational programs.

CAPT Van Landingham reminded the students that grade reports of all college work should be forwarded to BUPERS via BUMED for inclusion in individual official records as provided for in BUPERS Instruction 1520.83B. He also stated that it is anticipated that adequate funds will be available to support all officers in their part-time, off-duty programs as outlined in BUMED Instruction 1500.7A. Assignments to full-time duty under instruction are available within the limited billets authorized for such purposes as outlined in BUMED Instruction 1520.12E.

It is recognized that considerable effort is required to pursue an academic program. The efforts and achievements displayed by the graduates of NSHCA Class Number 28 are appreciated. For those interested in vital statistics, the typical student in Class #28 was 34.11 years of age at the time he attended NSHCA. He had 15 years of service of which 4.14 years were commissioned service. He was married and had three children. He had completed more than two service schools including Basic Hospital Corps School and MAT School.

BELLY BOARD AWARD TO CDR FOUTY

CDR William Fouty, MC, USN, Assistant Chief of Surgery at the Bethesda Naval Hospital, was announced as the second annual winner of the Belly Board Award. The Belly Board Conference is a meeting sponsored by the Gastroenterology Clinic and Research Branch in which problem cases related to digestive diseases are discussed by a multi-disciplined group of physicians in all phases of training. The weekly conference is directed by Dr. Raymond Johnson, Assistant Chief of the Gastroenterology Clinic and Research Branch.

In the conference an effort is made to establish an informal atmosphere in which interns and residents feel free to present their opinions regarding treatment and diagnoses. Subsequent discussion by various other subspecialists and more senior staff members with a broad base of experience help the young physician to see relationships that might otherwise not be brought out in a more didactic form of teaching. CAPT William Lukash, Head, Gastroenterology Clinic and Research Branch, feels that this type of conference promotes closer cooperation between the various specialties. Further, it provides a more realistic approach to total patient care allowing earlier diagnosis and better treatment.

Dr. Fouty, in addition to being an excellent surgeon, uses his natural ability to relate to the younger physicians as a means of presenting his seasoned opinions in a clear and logical manner. He has been a dynamic influence in introducing innovative changes in currently accepted methods of clinical management, and was the first to perform sigmoidmyotomy for diverticulitis at Bethesda Naval Hospital. Working closely with CAPT Wilson, Chief of Surgery at Bethesda, the Hassad procedure, initially developed in Egypt for the treatment of portal hypertension, was successfully performed on two patients with excellent results. CDR Fouty was one of the earliest supporters of a more aggressive use of parenteral hyperalimentation in the management of patients unable to take food orally. In these patients, as well as those with other serious diseases, his personal dedication and devotion are well known throughout the hospital.

CAPT Paul Kaufman, MC, new Executive Officer and Chief of Professional Training at Bethesda Naval Hospital, expressed the opinion at the end of the conference that greater recognition of outstanding contributions made by the working hospital clinician and teacher should be given in the future.

FILE FOR PROFESSIONAL PAPERS RELATED TO DUTY IN VIETNAM

A committee has been established at the National Naval Medical Center, Bethesda to collect and identify professional articles authored by Navy Medical Officers relating to their tour of duty in Vietnam. The committee is headed by CAPT T. H. Wilson, Jr., MC, USN, Chief of Surgery, who reports that the response thus far has been disappointing.

It would appear that a wealth of material has been written or *could* be written about the Navy's medical endeavors in Vietnam, both ashore and on the ships

that operated in Vietnam waters. The historical and professional value of these articles is evident. After all, we cannot hope to make significant strides forward if we don't take a keen look, on a continuing basis, at our accomplishments in the past. Documentation of our medical experiences provides a viable means for some central authority to properly evaluate our efforts and arrive at conclusions for initiating changes. In addition, a compilation of these articles in certain specialty areas, e.g., surgical management of trauma, can be a valuable teaching tool and reference source for future use.

To assist us in this effort, please forward a copy of any article which Medical Officers have authored or co-authored on their Vietnam experiences to CAPT T. H. Wilson, Jr., MC, USN, Chief of Surgery, Naval Hospital, National Naval Medical Center, Bethesda, Maryland 20014. Have the author include a brief statement granting the Navy Medical Department permission to use the article in future publications.

Your interest and cooperation in this matter are solicited and will be greatly appreciated.—Code 31, BUMED.

ENS MUSE TAKES TOP AWARD AT GRADUATION

ENS T. Michael Muse of Williamson, West Virginia, recently received the top award for leadership at the graduation of Navy Nurse Corps Class 7009 in Newport, Rhode Island. As a participant in the Navy Enlisted Nurse Education Program (NENEP), ENS Muse graduated in March 1970 from the Ohio State University School of Nursing. He went on to Newport for four-and-a-half weeks of nursing indoctrination training and then was assigned the duties of charge nurse in Tower Nine of the Naval Hospital, National Naval Medical Center, Bethesda, Maryland.

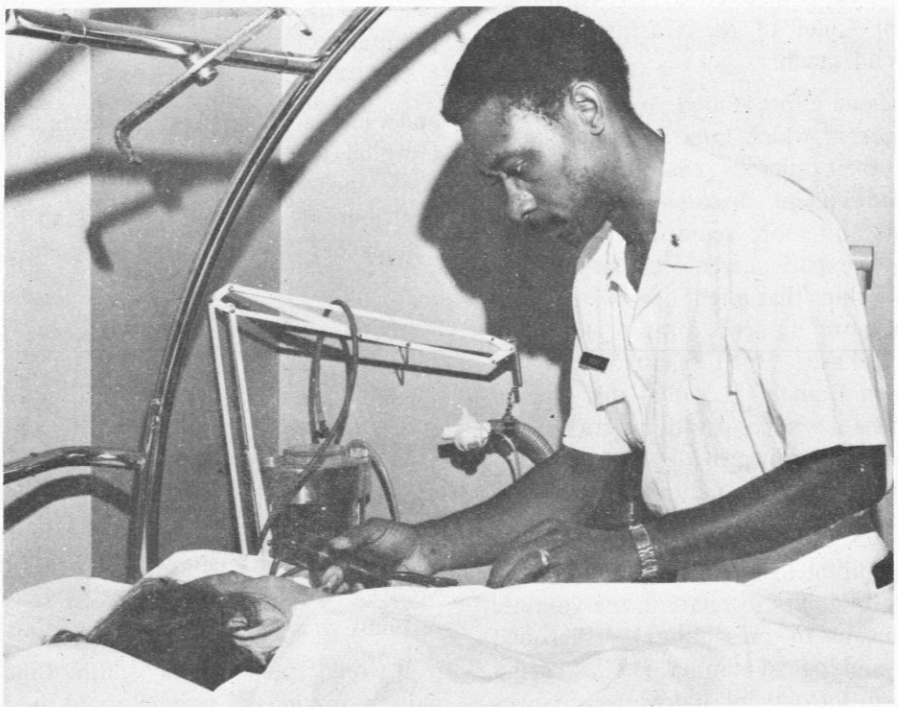
ENS Muse enrolled in NENEP while he was serving as a medical administrative technician in the Naval Hospital at Key West, Florida. Under NENEP, hospital corpsmen are sent to college for a three- or four-year nursing education program leading to a bachelor of science degree. The Navy pays full tuition and the student receives the pay and allowances of his enlisted pay grade while in the program.

ENS Muse and his wife presently live in Rockville, Maryland. He is the son of Henry H. Muse of 925 Vinson Street, Williamson, West Virginia.—PAO, NNMC, Bethesda, Md.

CURRENT CONCEPTS IN MEDICINE COURSE

The Second Annual Current Concepts in Medicine Course presented by the Medical Service of the Naval Hospital, National Naval Medical Center, Bethesda, Maryland will be held on 17–18 September 1970.

Topics of particular interest to practicing physi-



ENS Michael Muse, NC, USN, helps a patient breathe more easily by using a respirator.

cians will be presented with emphasis on the diagnosis and management of diseases of current clinical interest. Presentations will include the following subjects: Allergy and Immunology, Cardiology, Dermatology, Endocrinology and Metabolic Disease, Gastroenterology, Hematology, Neurology, Rheumatology, Renal Disease, and Pulmonary Disease.

The formal program will be published in mid-July.

There will be a social hour with cash bar on Thursday, 17 September 1970 from 6:00 to 8:00 P.M. in the Officer's Club at the National Naval Medical Center.

The course is open to all interested physicians, military and civilian. There will be no fee but preregistration is requested.—Chief of Medicine, NavHosp, NNMC, Bethesda, Md. 20014.

ENVIRONMENTAL HEALTH WORKSHOP

For physicians, nurses, industrial hygienists, safety and management personnel, NAVY Environmental Health Workshop is being held in New York City at the Hotel New Yorker, 1200 on 21 Sept to 1200 on 25 Sept, 1970. The Medical Directors of the Civil Service Commission and the Bureau of Employee's Compensation will be there to assist attendees in solving specific problems in their respective areas. In addition, there will be presentations by experts in the areas of medical administration; heat stress; radiation, noise; toxicology; occupational dermatology; and industrial psychiatry. Attendees are encouraged to present station health problems, medical or administrative, for discussion.

One goal of the Workshop is to develop methods for reducing station compensation costs and lost-time accidents. If one compensable injury can be prevented, the cost to that station for sending participants is justified.

The Workshop is sponsored by the Naval Ordnance Systems Command Environmental Health Center in cooperation with the Bureau of Medicine and Surgery. The only cost to local commands is travel, per diem, and a $20.00 registration fee.

Nominations to the Workshop may be made by writing to: NAVORDSYSCOM Environmental Health Center, 3333 Vine St., Cincinnati, Ohio 45219, or by calling Autovon 989–3947 or commercially 513–684–3947. Nominations should be made immediately.—Code 73, BuMed.

AHA ANNUAL CONVENTION IN SEPTEMBER

Tickets for the Federal Hospital Executive Luncheon to be held at the Astroworld Hotel on Tuesday Sept 15th at 1200 are available for $5.00. Checks should be forwarded to, and tickets may be obtained from LT L. E. Arnold, MSC, USN, BuMed Reserve Division, Code 361. Telephone OX 64626. Autovon 2264626.

OCTOBER MEETING, AMERICAN COLLEGE OF SURGEONS

The "Annual Navy Cocktail Party" held during the Clinical Congress of the American College of Surgeons will be held again this year. Arrangements have been made for a no-host party in the Upper Summit Room of the Conrad Hilton Hotel, from 1800 to 2000 on Wed. Oct. 10th. There will be a charge of $3.00 per person to provide for hors d'oeuvres and there will be a cash bar. This is a fine time to see old friends and make new Navy acquaintances, so plan to come.

Checks may be made out to CAPT Roger F. Milnes (Chief of Surgery, Naval Hospital, Great Lakes, Illinois 60088).

ASSOCIATION OF MILITARY SURGEONS MEETING IN NOVEMBER

The topic of inflammatory bowel disease was selected for the clinical program of the Association of Military Surgeons because it constitutes a major medical problem, not only among our civilian population but particularly in the military with a more susceptible younger age group. The discussion of inflammatory bowel disease will center on the group of inflammatory disorders which affect both the small and large intestines including ulcerative colitis, regional enteritis and granulomatous enterocolitis. The etiology of these conditions remains obscure and their course is chronic and unpredictable. There is no typical clinical picture and many unusual and protean intestinal and extra-intestinal manifestations may occur. The economic drain and time loss from work is enormous. At times the diagnosis is difficult and often confused with entities of an unusual nature, particularly conditions seen in Southeast Asia and other countries. The military physician, with duties overseas and contact with patients returning from foreign lands, must become aware of all possibilities.

In an effort to develop the theme of the program "Controversies in Medicine", outstanding military physicians and eminent civilian consultants to the Surgeons General of the three military services were invited to participate in this program. Since the clinical picture of inflammatory bowel disease can result in a diversity of systemic manifestations, the multidisciplinary approach currently in vogue generally produces the best teaching experience and best care

for the patient. The speakers, representing a variety of medical specialties, will present the currently accepted clinical concepts regarding their subjects and then a more personalized and perhaps controversial point-of-view. The final section of the program will be the panel on treatment. Since treatment is empirical and often unsatisfactory, this discussion may prove to be most interesting and provocative.

The Inflammatory Bowel Disease Symposium sounds like one very good reason why attendance at the Association of Military Surgeons Meeting in November should prove highly profitable.

NAVAL RESERVE DENTAL SYMPOSIUM

On 9 November 1970, in the Las Vegas Convention Center, Room 14, a Naval Reserve Dental Symposium will be held at 1400–1600. This symposium is held each year in conjunction with the Annual Session of the American Dental Association. The program will include a presentation by RADM Myron G. Turner, DC, USN, Director of Dental Activities, Eleventh Naval District entitled "Dynamics of District Dental Coordination." RADM Edward C. Raffetto, DC, USN, Assistant Chief of the Bureau of Medicine and Surgery (Dentistry) and Chief, Dental Division will speak on "Naval Dental Corps—1970." VADM George M. Davis, MC, USN, Surgeon General of the Navy and Chief of the Bureau of Medicine and Surgery will be the principal speaker on the timely subject "Partners for Progress." A reception will follow in the International Room of the Stardust Hotel, 1700–1900. These two events offer an excellent opportunity for dental officers on active and inactive duty to share a period of fellowship together.

DERMATOLOGY TECHNICIAN HONORED

The Charles A. Oclassen Award is sponsored by a leading pharmaceutical firm to further exceptional performance in the course of study at the Dermatology Technician School. It commemorates the many years of personal interest and friendship of Mr. Oclassen, president of the firm, for Navy dermatologists and technicians.

The Dermatology Technician School is a Class "C" Navy School offering a 16-week course of lectures, demonstrations and extensive clinical and laboratory experience in this highly-specialized field. Established in 1954, it remains unique in the Armed Forces, and may well be the only school of its kind anywhere.

Upon graduation, student technicians are assigned to duty at one of the Naval Hospitals in the United States or overseas, where they work closely with staff dermatologists in caring for Navy patients.

The classes convene three times each year, and are usually filled well in advance. With the recent trend toward increased use of additional technically-trained paramedical personnel, it is expected that this school will have even more applicants. The Oclassen Award will be given to the outstanding member of each future class to stimulate endeavor in maintaining a high level of professional competence. (See photo)

RADM GRAY ASSUMES COMMAND

The Naval Aerospace Medical Center at Pensacola, Fla. received a new Commanding Officer July 31 when RADM Oscar Gray Jr., MC, USN, saluted RADM Edward P. Irons, and said "I relieve you, Sir," in retirement and change of command ceremonies held on the Naval Air Station Pensacola parade grounds.

VADM Bernard M. Strean, Chief of Naval Air Training, presented the Legion of Merit to RADM Irons for his outstanding performance of duty as Commanding Officer of the Naval Aerospace Medical Center. He recounted the 31-year career of RADM Irons and commended him for his work at the Center and also as a member of his staff.

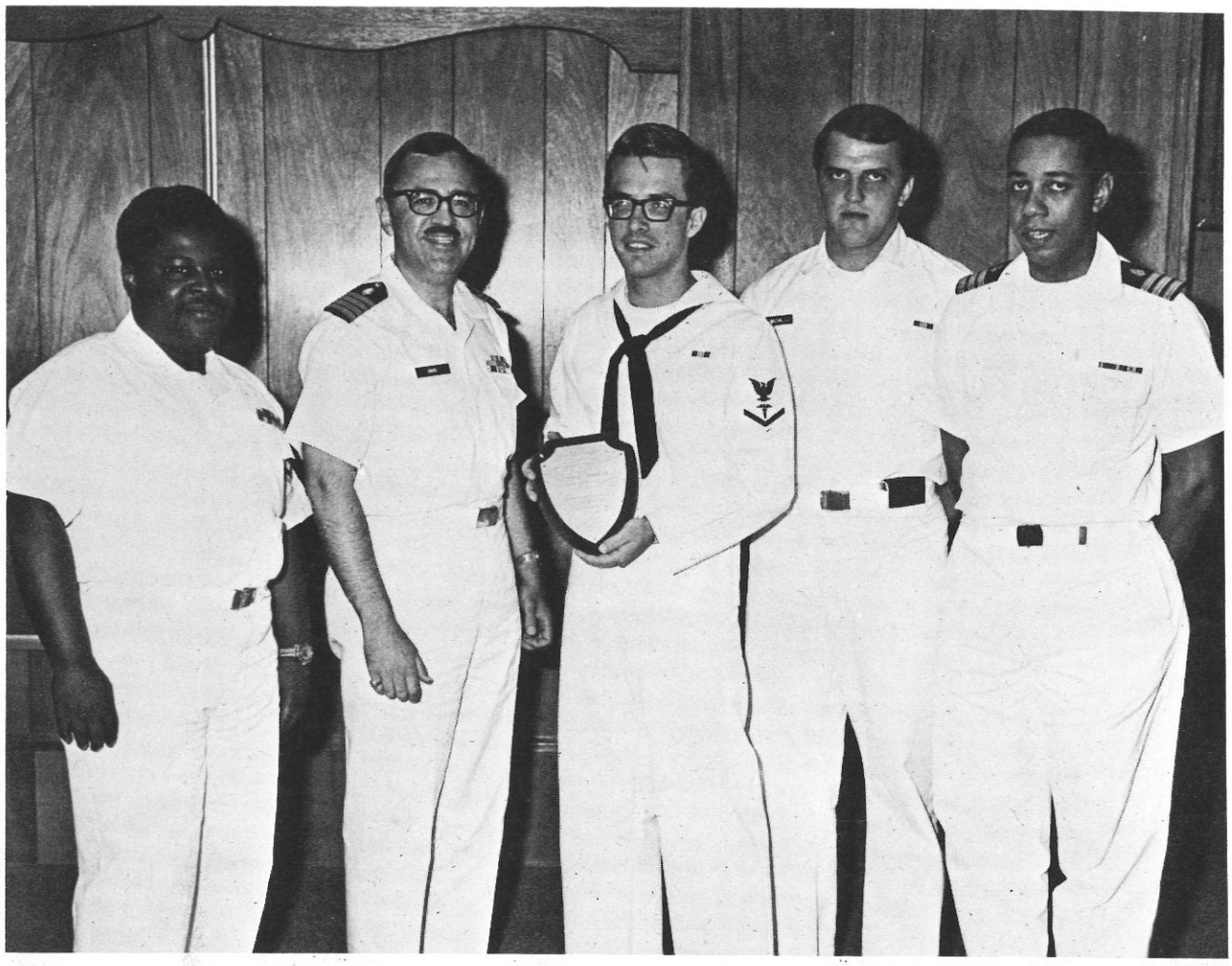
RADM Ralph Faucett, Assistant Chief of the Bureau of Medicine and Surgery for research and military medical specialties, presented the Surgeon General's Certificate of Merit to RADM Irons in recognition of his distinguished career in medicine.

Another award was a plaque presented by F. Willard Vickery on behalf of the 12,000 Boy Scouts in the Gulf Coast Council who have benefited from RADM Iron's leadership as a member of the Executive Board and District Chairman of the Perdido Bay District.

Martin L. Ray, Navy League president for the Pensacola Chapter, presented a framed certificate of appreciation to RADM Irons for his efforts on behalf of the League.

RADM Irons thanked the commanding officers of various units, members of his staff and component commands, and welcomed RADM and Mrs. Gray back to Pensacola. He also said, "In this age of Aquarius I am still proud to wear our uniform and salute our country's colors; the Navy has been good to me and good for me; and I know we make progress only by making changes." He starts his next career with a position in Vietnam with the State Department.

Invited military and civilian guests, including the Honorable Mayor Bryant Liggett, and other digni er-



HM3 Simione (center), and members of the teaching staff of the Dermatology Technician School (from left to right, HM3 Cato Battle; CAPT Richard G. Davis, MC, USN; HM3 John Jachimczak; CDR Bernett L. Johnson, Jr., MC, USN), are shown at the first presentation ceremony honoring outstanding achievement by a student in the Dermatology Technician School at the Philadelphia Naval Hospital. An engraved brass plaque was presented to HM3 Frank Simione, USN, for academic and technical excellence at the graduation of the 41st class of the school.

ies from the local area and Washington, attended a reception at the Mustin Beach Officers' Club after the ceremonies.

RADM Gray came to Pensacola from an assignment at the Naval Air Station Jacksonville, Fla. where he was selected for promotion to RADM. The Little Rock, Ark. native said that coming back to Pensacola for his new duty as Commanding Officer of the Naval Aerospace Medical Center "is the finest assignment a naval flight surgeon could have, and I am delighted to be aboard."—PAO, U.S. Naval Aerospace Medical Center, Pensacola, Fla.

ERRATUM

On page 52 of the July Navy Medical Newsletter, Vol. 56: No. 1, it was incorrectly reported that Dr. Howard T. Karsner died on May 8. The correct date of his death is April 8, 1970.

✝ In Memoriam ✝

Dr. Jonathan L. Serxner died on 16 July 1970 after an automobile accident. He was 32 years old. Dr. Serxner served on active duty from 1 July 1964 to 1 July 1966. During his tour he served aboard the nuclear submarine, USS Daniel Webster as a Lieutenant, Medical Corps, U.S. Naval Reserve. His findings on the psychology of prolonged confinement in submarines were published in the American Journal of Psychiatry in July 1968 in a paper entitled "An Experience in Submarine Psychiatry." His work has received wide attention.

He was born in New York and was graduated in 1959 from Columbia College, where he was a mem-

ber of Phi Beta Kappa, and received his medical degree from the College of Physicians and Surgeons, Columbia University, in 1963.

He was a psychiatrist on the faculty of the Downstate Medical Center, State University of New York, and was in private practice at the time of his death.

TWIN ENS WEX'ES

"If we are ever assigned to the same ship as doctors the crew will go bananas," said ENS Timothy G. Wex, when he and his identical twin brother, ENS T. E. Wex, visited the Naval Aerospace Medical Institute here July 30, for indoctrination in aerospace medicine. The medical students are on duty for their summer vacation at the Naval Medical Research Institute, Bethesda, Md. The return flight for the twins and 18 other medical students was in the Blue Angels' transport, piloted by LT Edward C. Nafus, (left). The twins attend different medical schools but get together each summer in the Navy's program to provide future Navy medical officers.—PAO, U.S. Naval Aerospace Medical Center, Pensacola, Fla.

ATTENTION IS INVITED TO THE CHANGE IN TITLE OF THE NAVY MEDICAL NEWSLETTER. THE PUBLICATION WILL HENCEFORTH BE KNOWN AS U.S. NAVY MEDICINE.

CORRESPONDENCE AND CONTRIBUTIONS from the field are welcomed and will be published as space permits, subject to editing and possible abridgment. All material should be submitted to the Editor, U.S. Navy Medicine, Code 38, Bureau of Medicine and Surgery, Washington, D.C. 20390.

NOTICES should be received not later than the third day of the month preceding the month of publication.

PROFESSIONAL PAPERS AND ARTICLES should be typewritten on one side of the paper, double spaced, with liberal margins. Original and one carbon copy are required. Generic names of drugs are preferred. If the author's present affiliation differs from that under which the reported work was done, both should be given. Unless otherwise indicated, it will be assumed that the article presented has not been previously printed or delivered elsewhere. Papers which have been delivered or printed elsewhere, covered by copyright, cannot be reprinted in Navy Medicine without the written permission of the author(s) and copyright holder. It is the responsibility of the author(s) to inform U.S. Navy Medicine when the material submitted has been previously used or copyrighted. Navy Medicine will be happy to request permission to reprint from the copyright holder when this is necessary.

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SUGGESTIONS are invited concerning U.S. Navy Medicine, its content and form.

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☆ U. S. GOVERNMENT PRINTING OFFICE : 1970 434-356/16