USARV MEDICAL BULLETIN

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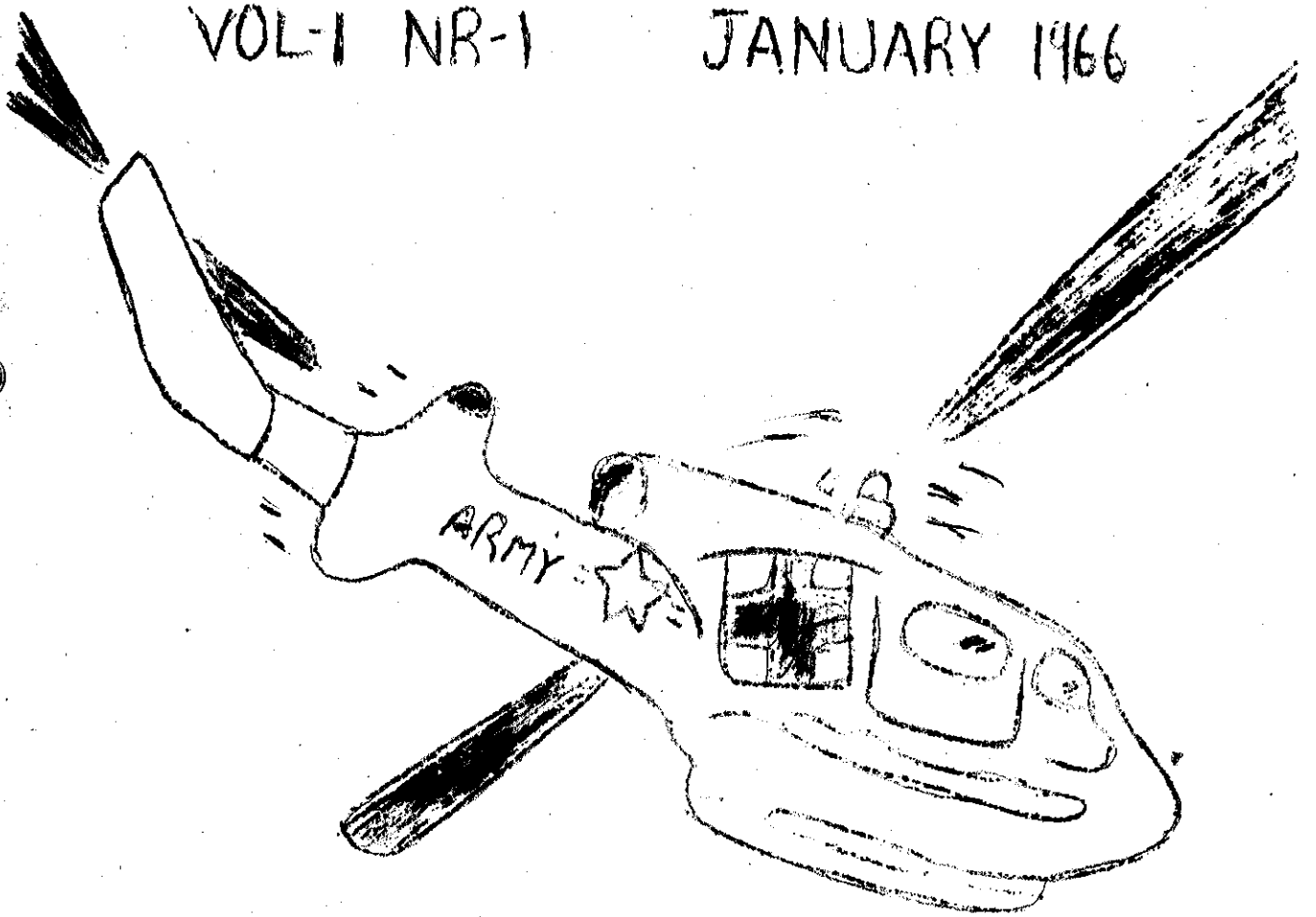

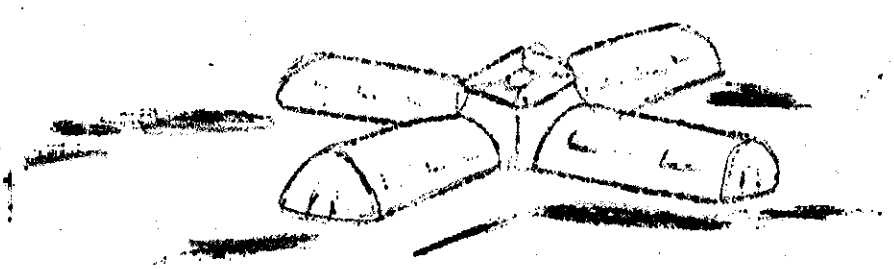

THE USARV MEDICAL BULLETIN

The USARV Medical Bulletin makes its initial appearance with this issue. Published to provide useful information for AMEDS personnel throughout Vietnam, it will be distributed monthly. Each issue will feature articles from a major medical installation or unit. Papers from members of any AMEDS organization are welcome at any time. Members of various organizations will be specifically asked to contribute at times.

Other features of the bulletin will be the Surgeon's Page the Consultant's Page, the Nurse's Page, Guest Editorials, Recent Arrivals as well as articles concerning the various medical specialities. It is requested that, where possible, contributors limit their articles to five hundred words or less, and that they avoid using classified information such as casualty rates or morbidity figures.

Articles should be typed and forwarded with a brief biographical sketch of the author to Lt Col John N. Gordon M.C. Hq, USARV Surgeon's Office, APO 96307 US Forces.

for SAMUEL C. GALLUP
Colonel, MC
Surgeon

RECENT ARRIVALS

Col. James E, Wier, M.C.
Lt. Col. Richard Barquist, M.C.
Lt. Col. Kay W. Lorentzen, V.C.
Maj. Raymond Coultrip, M.C.
Capt. John Guttendorf, MSC.
Capt. Paul S. Hill, M.C.
Capt. Franz Jordon, M.C.
Capt. Frank Pettyjohn, M.C.
Capt. James A, Thomas, M.C.
Capt. Roger D. Gifford, M.C.
Capt. Neil Shore, M.C.
Capt. Jack A. Kling, M.C.
Capt. Ralph J. Livin, M.C.
Capt. George P. Burns, M.C.
2/Lt David Ely, ANC.
2/Lt Geraldyne Hart, ANC.
2/Lt Sheryl Coffin, ANC.
2/Lt Elizabeth Bjorkmon, ANC.
2/Lt Kathleen Devin, ANC.
2/Lt Charlene Benford, ANC.
2/Lt Dorris McKenna, ANC.
2/Lt Mary Menard, ANC.
2/Lt Mary M. Miedaner, ANC.

THE SURGEON'S PAGE

With the formation of United States Army Vietnam on 20 July 1965, replacing the superseded Support Command, Col Ralph E. Conant, M.C., became the first Surgeon of the new organization. The Surgeon's Office was located directly behind the present Headquarters at Tan Son Nhut. Col Samuel C. Gallup M.C., became Surgeon on his arrival in country on 19 August 1965. The office is located in the USOM Housing area at Camp Bravo, Tan Son Nhut, having moved there on 12 November 1965. At present, it occupies buildings 17 and 15. In the former, the principal officers are the Surgeon, the Chief Nurse, the Executive Officer, the Evacuation and Operations Officer, the Assistant Evacuation Officer, the Plans Officer, the Administration and Personnel Officer and the Medical Records and Reports Officer. The USARV Dental Surgeon, Surgical, Medical, Neurosurgical and Neuropsychiatry Consultants, the Aviation Medicine Officer, the Preventive Medicine Officer and the Supply Officer and the Assistant Supply Officer occupy building 15. This month's issue will feature a brief introduction of the key personnel in building 17, while next month's will feature those in number 15.

Colonel Samuel C. Gallup, M.C., the USARV Surgeon, has numerous duties as a member of the USARV Deputy Commander's special staff. He is vitally concerned with the medical care and health of the command as well as providing technical advice and guidance to all USARV Field Army Medical Service elements as well as to USARV Combat and Combat Support Medical elements. Colonel Gallup was born in Ohio and has his stateside residence at present in McLean, Virginia, where his wife and 7 children live. He has had extensive experience in the field of preventive medicine. He received an M.D. degree from the U. of St Louis, an MPH degree from Harvard, and he has had a year's residence in Public Health in Pinellas County, Florida. In addition, he has attended the MFSS Officers Advanced Course and the Command and General Staff College. Prior to his assignment to Vietnam, he was Chief of Communicable Disease, Branch of the Dept of Preventive Medicine in the Surgeon General's Office. Besides experience as CO of the 1st Med Bn, 1st Inf Div in 1949 - 50 and as CO of the 65th Med Gp in 1957 - 1958, he has been preventive Medicine Officer, U.S. Army Ryukyus from 1960 - 1963. During the latter assignment, he travelled extensively throughout Southeast Asia including India, Thailand and Vietnam. Asked about his hobbies, he wittingly replies - "raising kids".

Lt Col Margaret Clarke, A.N.C., is the Chief Nurse in USARV. She conveys her Alabama southern hospitality to nurses all over Vietnam, often being on hand to personally greet them as they arrive at their duty station. Dynamic and energetic, she is most at home going out into the field and getting to know first hand the problems encountered by her nurses.

Peg came here from Fort Rucker Alabama and will return to Fort McClellan, Alabama in the near future. With 23 years service to her credit, she plans eventually to retire and continue her education. Among her varied experiences in nursing, she has had assignments to Bayreuth, Germany, Walter Reed and Hawaii.

Executive Officer of the Surgeon's Office is genial Harral Bigham, Major, MSC. A Texan, he is used to big things such as his present position in Vietnam. His Army career beain in World War II, during which time he served as a Medical Aid man and as an NCO. Following the war, he received a degree in Pharmacy at the U. of Texas. He re-entered service in 1950, and was assistant to Bn. Surgeon in Korea in the 3rd Inf Div. He was also the Executive Officer of a Med Co in the 7th Inf Regt. He practiced pharmacy from 1952 to 1956 continuing his association with the Army as CO of a National Guard Company.

Returning to active duty, he became Bn Exec at the Medical Field Service School. Later, he served in Europe as CO of an Ambulance Company in the 11th Abn Div, as Bn S-3 in the 24th Inf Div and as the Registrar and Pharmacy Officer of the 11th Field Hospital in Augsburg. On returning to the states, he was assigned in Combat and Development in San Antonio, Texas. Prior to coming here in July 1965, he attended the Command and General Staff Course for 11 months at Fort Leavenworth, Kansas. His family resides in El Paso, Texas. Among his hobbies are camping and photography.

The Plans and Operations Division is headed by the Evacuation and Operations Officer, Lt Col Anthony A. Reinel, MSC. A veteran of over 24 years service, Col Reinel is originally from Brooklyn, N.Y.. He has recently come to Vietnam from Fort Benning, Georgia, where he commanded the 428th Med Bn at the Infantry School. Prior to that, he was with the Medical Service Combat Army Development Agency at Fort Sam Houston, Texas for 3 years. Additional assignments he has held, date back to World War II, when he was in the 90th Inf Div and was a Bn. Surgeon's Assistant in the 358th Inf in Europe. He attended the Command and General Staff Associate Course in 1954. Following this, he was in the Div Surgeon's Office of the 3rd Inf Div, and later in the Medical Section of the 7th Army Hq, in the Stuttgart, Germany area.

His duties here are involved heavily in planning for future Medical Corps Support as the build up continues. His family resides near Fort Benning, 'way down in Columbus, Georgia.

The Assistant Evacuation Officer of the Surgeon's Office, is Major Gerald S. Rose, MSC. Jerry is a native Californian and ardent supporter of that state. His B.A. degree was obtained at U. of Calif, Santa Barbara, Calif, and his M.A. in Education at Long Beach State. In service, he has completed the Armed Forces Information School, the Army Medical Service Basic and Advanced Courses at Fort Sam Houston and the Command and General Staff College. His interest and skill in helicopters and fixed wing air craft make him thoroughly familiar with the modern techniques of evacuation in use by USARV, from 1962 - 1964 for example he was instructor in aeromedical evacuation at the Medical Field Service School. He has experience in flying not only in Vietnam, but also in Korea. Jerry's a comedian and gadgeteer, having numerous devices such as "such as "panic buttons" about his desk. His family resides in San Pedro, California.

Lima, Ohio is the birthplace of Maj Edward R. Lesher, MSC, Plans Officer for the Surgeon's Office. His army career began in World War II in 1943.

He spent 18 months in combat in Europe with the 376th Infantry Regiment of the94th Division. In civilian life he attended the University of Hawaii and the University of Maryland and has only a few hours to complete requirements for a bachelors degree. His Army schooling has included both the Basic and advanced courses at the Medical Field Service School and the Regular Courses at the Command and General Staff School. Maj Lesher now has a total of over 22 years service. He enjoys stamp collecting, photographing and hunting. His family is living at Kileen, Texas.

Maj Glenn E. Thompson Jr., MSC, the Administration Officer , is from West Virginia, but his family is now residing in Maryland. A graduate of Morris Harvey College, West Virginia, he has a B.A. Degree in Socialogy and Psychiatry and an M.A. in Education from the University of West Virginia. His Army schooling consists of a most unusual MFSS Course in Clinical Psychology in 1952 and in the Advanced AMEDS course in 1960. He has had tours of duty in Japan where he was with the 141st General Hospital in 1953 - 1955 and in France where he was CO of a Medical Holding Company and Adjutant of the 819th Hospital Center at Orleans. His principal hobby is coin collecting.

The important job of Medical Reports and Statistics Officer is filled by Maj William C. Donner, MSC, native of Sharon, Pennsylvania. He has had varied experiences in the service since his entry into it in 1947. He spent 5 years with 82nd Airborne Division at Fort Bragg, North Carolina. He completed the Airborne School at Fort Benning, had the Basic Typing and Administrative Course at Fort Lee, Virginia. He rose from Private to Sfc after only 4 years service. He finished OCS at Fort Riley in 1952. He has spent much time in Europe, Austria, Germany and Italy. He began college courses while on active duty and earned a Bachelor's Degree in Business Administration from the University of Omaha. His family lives in Fayetteville, North Carolina. His hobbies are fishing and water skiing.

A MESSAGE FROM THE ASSISTANT CHIEF, ARMY NURSE CORPS

It has been a distinct honor and privilege to represent the Chief of the Army Nurse Corps, Colonel Mildred I. Clark, and visit the officer and enlisted personnel assigned to the Nursing Service of the U.S. Army Vietnam Medical Units from 23 December through 4 January. As I anticipated, members of the Nursing Service are making an outstanding contribution toward the accomplishment of the mission of the Army Medical Service.

In Vietnam, Army Nurse Corps officers are once again performing their traditional role in the care of the sick and wounded as in W.W.I, W.W.II and the Korean War. They give of themselves selflessly while sharing the hardships endured by other members of the Army. I was particularly impressed by their indomitable courage, high motivation, compassion, dedication and ability to transfer professional skills from a hospital situation to the battlefield.

Their maintenance of the highest standards of the nursing profession assures optimum nursing care for the patients.

May I salute all members of the medical team in the U.S. Army, Vietnam. The American people, especially your loved ones, can be proud of you as you serve our country and provide the American soldier with the best possible medical care, even under adverse circumstances by Army Nurses untiring efforts and devotion to duty.

God bless you.

ANNA MAY HAYS
Lt Col, Army Nurse Corps
Asst. Chief, Army Nurse Corps

Lt Col. Hays was born in Buffalo N.Y. She received her R.N. from Allentown Hospital School of Nursing and a B.S. in Nursing Education from Columbia University. She has been on active duty since 1942. She is a member of Kappa Delta Pi and Pi Lambda Theta Honor Societies. Besides having had tours of duty in Korea, India, Japan and Walter Reed as well as many others, she has been in the office of the Surgeon General as the Asst Chief, Army Nurse Corps since Sep 1963. She recently toured hospitals in Vietnam accompanied by Lt. Col. Margaret Clarke ANC., USARV Chief Nurse.

NOTICE OF CONSULTANT VISIT

Dr. Oscar P. Hampton Jr, Washington University, St Louis, civilian consultant to the Surgeon General Orthopedics and Trauma will visit USARV Medical Units during February 1966. Current plans are for him to give a short talk on Traumatic Orthopedics at some of the hospitals. The itinerary of his visit and talks will be published in the near future. Doctor in the vicinity of hospitals at which a talk is planned, are encouraged to attend if at all possible.

Medical personnel are encouraged, when their duties will permit, and with the concurrence of their commanders, to visit their counterpart medical units, i.e., division level doctors visiting hospitals and vice versa. Not only will this be of personal interest, but the increased appreciation of the work and problems at another level of medical care will materially aid all in the professional and administrative management of patients.

Doctors are urged to keep some type of personal record of patients treated by them. Such records are of value now for reference, will be invaluable later for specialty board or college requirements and for possible professional papers.

GEORGE W. FISHER
Lt Col, MC
Surgery Consultant

THE 3RD FIELD HOSPITAL

by Sterling B. Mutz, Maj., M.C.

The 3rd Field Hospital, with an illustrious history of service in the South Pacific during W.W.II and in Korea, was reactiviated at Ft. Lewis, Washington on 11 March 1965 to provide medical support for a rapidly expanding US committment in another fight for freedom. A 100 bed unit of the 51st Field Hospital supplied the nucleus of our unit which was designed to hold the gap while the full medical support could be assembled and deployed to Vietnam. Considerable care was taken to insure that each of the key sections including Professional Service, Nusing Service, A & D, supply and mess was under competent experienced persons. This was the prime factor that guaranteed success in its mission.

The unit left Fort Lewis on 23 April 1965 and traveled into two sections on MATS C-119 across the Pacific to Tan Son Nhut. The prevailing thought of our entire unit was the anticipation of an important job that needed doing and doing well, so that many Americans would return home who could not have returned if we had not come.

The expectation of living in tents was not realized since the excellent buildings of the American Community School Saigon were to be converted into a hospital with our field equipment which had been sent ahead from Ft. Lewis by surface. Direct medical support was needed immediately for the southern half of the country and as renovation on the buildings was completed, usually before the paint dried, nurses and corpsmen swooped into set up the wards. Steel elevated hospitals beds were procured from the ARVN medical depot; eight refrigerators appeared mysteriously, the embassy donated typewriters, desks and bookcases and other school equipment including a mimeograph machine which proved to be most valuable. The unit stood tall on 12 May 1965 and declared itself operational to General Norton then commanding general of Support Command.

The air craft explosion at Bien Hoa AFB provided us with our baptismal operation within a few days after opening. Thirty-five casualties were received and cared for over a period of a few hours.

Our TO & E handicapped us from the beginning. Electrical power was a major problem. A 150 KW Caterpillar generator was "borrowed" from the civilian contractors to supplement our two generators, these latter were totally inadequate to handle the requirements of a fixed installation with its air conditioned operating rooms, refrigeration and resuscitation equipment.

The Bien Hoa explosion was followed by a succession of episodes which taxed the capabilities of our unit. A terrorist bomb exploded at the Tan Son Nhut terminal, the Dong Xoai outpost was over run, the 173rd Air Borne Brigade and the 1st Royal Australian Reg. initialed several conflicts, and the Bien Hoa air base was again mortared one dark midnight. In early June the 1st Brigade of the 1st Inf. Div. required medical support.

The casualty load was shared by the 3rd Field Hospital and the U.S. Naval Station Hospital Saigon. An excellent working arrangement was established to facilitate the operation of the two units and provide the best patient care. Cooperation was essential in both the deployment of personnel and supplies. At the time the My Canh floating restaurant in Saigon was hit with claymore mines, two surgeons and an anesthetist were dispatched to the Navy hospital. This practice was beneficial to the total casualty flow and was to be repeated many times.

At no time were we ever out of any critical supply item. The ingenuity of the supply personnel was frequently called upon and there were periods of anxiety over the quantity available but there was always enough to accomplish the mission. The sources of supply were numerous and highly variable and the methods of obtaining them were unique to say the least. The ARVN medical depot proved to be the most reliable source during the 3 month period of time it took to establish a regular flow through standard channels.

The mission began to change after the 3rd Surgical Hospital became operational on 15 September 1965 and the 93rd Evacuation Hospital on 1 December 1965. The 3rd Field Hospital was still in support of tactical troops but now began to function also as a holding installation and an evacuation hospital. This was not added strain since in the month of October 497 patients had been evacuated through this facility. On 3 November 1965 we were augmented by the HQ unit and two complete 100 bed hospital units of the 51st Field Hospital. This allowed expansion to 325 beds which had been set up in preparation for the new units. Surgeon General Leonard Heaton was on hand to cut the ribbon, signifying this expansion.

It was elected to retain the already established name of the 3rd Field Hospital. The incoming personnel were a welcome addition to the unit and the physicians, nurses, ancillary staff and enlisted personnel continue to work together to ensure that optimum patient care is given. Currently we feel we have the finest physical plant in South Vietnam staffed by an excellent professional staff of Physicians, Surgeons and Nurses with qualified specialists in intern medicine, and a Neurosurgical, thoracic, vascular, orthopedic and general surgical capability. A complete new surgical suite is now under construction.

In the years to come it is felt that the basic foundations laid by those early arrivals will provide an ample base on which to build more complete and better medical support. The initial growing pains are now fading from our memory.

COMMANDING OFFICER

Sterling B. Mutz Major/MC was born of Canadian parentage in Portland, Ore., 13 May 1929. The family migrated back to Vancouver, British Columbia after a few months and he received his grade school and high school education in Canada.

He received pre-medical education at Pasadena City C llege and the University of California at Berkley. He studies medicine at the George Washington University in Washington D.C., graduating in June 1956.

Shortly before graduation he joined the U.S. Army, completed an internship, at Tripler General Hospital and was commissioned a 1st Lt in the regular Army. Following a year of pre-specialty surgical training at Madigan Army Hospital, he completed an Orthepedic residency at Letterman General Hospital, including one year of pediatric orthopedics at the San Francisco Shriner's Hospital for crippled children. After serving a tour of duty at Ft Dix, N.J. he completed to course in Hand Surgery at Walter Reed General Hospital in December of 1964, and assumed command of the 3rd Field Hospital on 19 April 1965.

WOUND CARE

by Francis J. Heck, Maj, MC

The 3rd Field Hospital has had the unique experience in its short service in Vietnam of a telescoped panarama of medical mission from first line care of casualties directly evacuated by helicopter from the field, to receiving patients from other facilities for delayed care, and finally acting as a convalescent and evacuation center. Acute injuries are still received from terrorist activities in Saigon and Mekong Delta. From our experience there are five points of surgical care which are worthwhile reiterating.

1. Resuscitation should be efficient and rapid. Prolonged evaluation is not needed until the airway is established and a lifeline and more ofter several intravenous ports are used. Polyethylene catheters should be in a cannister already attached to blunt needles. If shock is profound, a cephalic vein (it's always there) or saphenofemoral cutdown should be done. Suturing the needle to the adjacent skin insures against dislodging a catheter painstakingly inserted. A three way stopcock attachment allows ease changing of blood infusions sets since the filter handles only 2 or 3 units well during pressure infusion. Resuscitation should be done with type specific blood which is available in 5 minutes giving ample time to prime the lifeline using one or two litter of saline. A separate blood request form for each unit desired is marked 5 minutes for type specific blood or 30 min. for a saline cross match.

2. Liberal but still judicious use should be made of tracheostomies, tube gastrostomies, and exploratory laporotomies. The frequent use of the latter is better than delayed operation after prolonged observation, even if a few more negative explorations are done.

3. The principles of adequate debridement for high velocity missles promulgated by Artz including wide skin incision (longitudinal on the extremities and curved in flexion areas) with minimal skin excision, fasciotomy the full length of the skin incision, debridement of all devitalized muscle using as criteria the color, consistency, bleeding and contractility, and laying dressing on wounds, are routinely followed.

The majority of wounds treated in Vietnam are low velocity from mortar, claymore mine, or grenade fragments. Each of the possible hundreds of fragment wounds should be incised or curetted. If the fragment has penetrated the fascia, this should be opened and irrigations done. No effort is made specifically to locate the metallic fragment. Success is insured by irrigating out the organic foreign matter and allowing drainage. Packing the wound defeats this important principle. Adequate debridement demands adequate anesthesia and preference is given to regional or general anesthesia. Amputation is a difficult professional decision demanding wise judgement and sometimes bold action. Procrastination wil often result in a debilitated septic patient who succumbs even after a late amputation possible only at an even higher level.

4. Wounds of the scalp, face and hand do well with primary closure. Mobilization of flaps is desirable at the initial treatment of head and neck wounds. All other wounds are closed in 4 to 5 days by delayed primary closure taking advantage of the lag phase in wound healing. In wound care we advise the five "S" as indications for dressing changes:

a. Slippage

b. Seepage (blood or serum)

c. Stench or sepsis

d. Soakage

e. Surgeon's curiosity

The last is never a good reason.

5. Antibiotics are employed for any wound which penetrates a cavity, namely cranial, sinus, pleural, peritoneal, joint or marrow cavity.

Forgetting the lessons of previous battlefields or "trying to get away" with some shortcut only courts disaster. Success crowns the meticulous application of the basic principles of wound care. Our serviceman has learned to expect only the best care and our efforts will not disappoint him.

Major Francis J. Heck was born and raised in Passaic, New Jersey, and received his college and medical training Georgetown University, Washington, D.C. He completed a rotaior internship in 1957-58 at D.C. General Hospital and then entered the US Army Medical Corps. After initial orientation at AMFSS, Ft. Sam Houston, he was assigned to Ft. Leonard Wood and then to US Army Tripler General Hospital, and Paul Kiehl. Staff assignments for teaching surgery followed his formal training with one year at Tripler and another at Madigan. With the activation of the Third Field Hospital, he was made Chief of Surgery of that unit and is currently directing its professional program.

MEDICAL SERVICE 3D FIELD HOSPITAL

by Peter Bartelloni, Maj, MC

The Medical Service at the 3d Field Hospital is organized into twoosections, General Medicine and the Infectious Disease Service.

The chief is Major Peter Bartelloni who obtained his MD degree from the College of Medicine, University of Vermont in 1958. He interned at Marteil Army Hospital and completed his training in Internal Medicine at Walter Reed Army Hospital in 1963. Prior to being assigned to Vietnam, he was chief of clinics at USAH Ft Ord, California. His main interest is in infectious disease.

The General Medical Service has 50 beds with an additional 60 beds on the infectious disease service. In addition there are three convalescent words with 15 beds each.

Among the most difficult but interesting and challenging problem is the management of Malaria secondary to P. falciparum, we feel it's important to obtain the patient early during the course of his illness so that therapy will not be delayed. The presence of sick individual with severe partal or retrorbital headaches, fever, rigors, diaphoresis, a palpable spleen or tenderness in the left upper quadrant is generally sufficient to initiate therapy. A study is presently in progress to evaluate the results with chloroquine and quinine therapy. Scrub typhus, amobic and bacillary dysentery are an infrequent cause of admission. Acute nonspecific diarrhea, self limiting in character is a routine admission. Infectious hepatitis of a mild nature is seen frequently.

Chest pain, opigastric pain, and renal colic constitute common problems on the General Medical Service.

Fevers of undetermined origin are frequent and attempts to delineate the etiology are pending acute and convalescent serum specimens.

We are fortunate in having adequate laboratory facilities which is so essential in the operation of a medical service and in having a fine physical plant to conduct our work. In addition devoted corpsmen, nurses and medical service corps officers working together and for us have helped us performing our mission to "conserve the fighting strength".

RADIOLOGY SERVICE

by Richard A. Friedman, Capt, MC

The Radiology Service of the 3d Field Hospital furnishes another example of the quality of medical care afforded our soldiers in Vietnam. The 3d Field Hospital is situated in a converted school in Tan Son Nhut, just outside Saigon.

The temporary physical plant of the Radiology Dept consists of large exposure room equipped with a 50 MA Picker field unit, a polaroid Unit, and a 15 MA portable. A reception room, technicians quarters, and air-conditioned darkroom and radiology office complete the physical set-up. Although we now use "Wet-tanks" which efficently handle approximately 30 cases at a time, an automatic processor is on order. Our equipment, which is growing daily, will soon include a 50 MA portable and 2-100 MA units, one of which will be used for fluoroscopy.

With our present facilities we accommate the specialists here by performing examinations such as ventriculograms, arteriograms, venograms, gall bladder and small bowel studies, polaroid films in surgery, portable radiographs, and, of course, all routine studies.

The Radiology service is run in a fashion similar to a general hospital. Emergency studies are performed and interpreted at any time, special studies are scheduled 1-3 lays in advance and routine work is done daily. We average 50 cases per day. All films are checked before the patient is discharged and "Wet readings" are given as requested. All dry films are read independently by both staff radiologists.

The Radiology Dept., as are many of the services, is in temporary quarters. Construction will soon begin on a new completely equipped X-ray Dept which will have all the capabilities and conviences of a station hospital.

RICHARD A. FRIEDMAN
Chief, Radiology Dept
3rd Field Hospital

Captain Friedman was born in Ithaca, N.Y. He attended the University of Chicago for his pre-med and received his MD from University of Missouri. After an internship at Mt. Zion Hospital in San Francisco, he had a 3 year residency in Radiology at Cedars of Lebanon Hospital in Hollywood.

COMBAT PSYCHIATRY

by Peter G. Bourne, Captain, MC.

It is only since World War I that the Medical Corps has been called upon to prevent and treat psychiatric casualties in an effort to conserve the fighting strength. At that time because the primary cause of such casualties was apparently artillery fire the term "Shell Shock", was coined. This term was unfortunate because it led many people, both patients and physicians to believe that it was an organic disorder. By the early part of World War II this concept had been discarded, and such terms as "psychoneurosis, anxiety state", "psychoneurosis mixed", and conversion hysteria" were being used.

These designations, like "shell-shock", were misleading because they implied the presence of a fixed neuretic disease. Finally in 1943, the term "combat exhaustion" was orginated to convey a more appropriate picture of a transient psychological breakdown caused by battle stress.

The clinical picture which is seen may take many forms. The soldier may be literally "paralyzed with fear". Muscular function is prevented by simultaneous contracture of flexers and extensors, and signs of sympathetic overstimuation, with pupils dilated, eyes slightly proptosed and tachycardia, are present. In other instances the man may develop a severe tremor affecting the upper extremities more than the lower, and sudden protective reactions such as "ducking" and covering his head at the slightest sound, even those produced by friendly weapons. A wide variety of conversion symptoms may be present including hysterical blindness, deafness, paralytic phenomena and myoclonus. In addition in some cases there may be disturbances in orientation varying from temporary confusion to total amnesia.

The etiology of "combat exhaustion" is complex and is related to more than simply fear of death or mutilation. Acute stress of any intensity rarely produces psychiatric casualties, and for this reason guerilla type warfare or battles of short duration result in few cases of "combat exhaustion". Psychiatrically the most distructive situation is that of the fixed battle line, where the soldier is under constant fire for days or weeks at a time, and particularly if he is unable to effectively return the fire.

Early in the history of military phychiatry it was the custom to evacuate all casualties well out of the combat area. However it rapidly became apparent that most cases were responding poorly to such treatment. It has subsequently been found that by keeping these people as near the combat zone as possible while at the same time providing them with rest, sedation, warm food, and relative safety the majority would be able to recover and return to duty in a matter of 48 to 72 hours. In addition more attention is now paid to providing frequent rotations for the troops under fire, as well as recognition of the importance of group identity and the role of leadership as factors in helping to minimize the incidence of "combat exhaustion".

Captain Peter Bourne, MC, was born in Oxford, England, attended undergraduate school at Whitgift, England and at Emery University in Atlanta, Georgia. After also completing Emory University Medical School, he interned at Kings County Hospital in Seattle, Washington. He returned to Emery for a year's residency in phychiatry and neurology division at Walter Reed Institute of Research for two years. He is now at WRAIR, Vietnam.

U.S. ARMY HELICOPTER DEATHS IN VIETNAM

by Frank W. Kiel, Major, MC, USA*

A. Deaths in Army helicopters in Vietnam 1962-1965

	American	Other
1962	7	2
1963	24	0
1964	46	11
1965	117	12
	194	25

Since the summer of 1962, the year in which American helicopters first started giving support to the Vietnamese, there have been 86 incidents in which at least one American has been killed involving a helicopter. Total American deaths (through 31 Dec 1965) were 194; 25 deaths of other nationalities have also occurred, making total helicopter-associated deaths add up to 219.

The fate of companions is known in the 28 "shot down" incidents. Of 126 people aboard these aircraft which were shot down, 27 survived. In 16 of the 28 incidents, however, all aboard were killed. The fate of other persons is also known in the 19 air accidents. Of 102 people aboard these aircraft which crashed, 25 survived. In only 6 of the 19 accidents were all aboard killed.

B. Positions of American Casualties

Pilot	46	Gunner	45	Passenger	16
Copilot	39	Other crew	5	Bystander	2
Crew chief	41				

In American casualties, a nearly equal number were in the pilot section and at gunners' positions. Among this group are 35 killed by sharp-shooting from the ground: pilots - 8, copilots - 7, crew chiefs - 8, gunners - 11, passenger - 1.

Fourteen American passengers have died in helicopters. The first was an officer shot by Viet Cong after being rendered unconscious when his aircraft was shot down. A medical aidman was killed when a machine gun aboard an H-21 was accidentally discharged. One passenger was shot in the head by hostile ground fire. An advisor was among six killed when his aircraft was shot down near Saigon; two other passenger deaths occurred in crashs judged to be accidents.

The bystanders represent men who walked into revolving tail rotors on UH-1 aircraft, sustaining skull fracture and brain injury.

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* Flight Surgeon, 406th Mobile Medical Laboratory, Vietnam

C. Helicopter type involved in death incidents

H-21	9	CH-47	1	UH-1	69
H-37	1	OH-13	2	Unk.	4

With the replacement of the older helicopters by the UH-1B and Uh-1D, these aircraft now predominate in death incidents. In fact, all cases from April 1964 to September 1965 involved UH-1 models.

D. Causes of helicopter fatality incidents

Gunshot wound from ground fire	35
Helicopter shot down	28
In-flight accident	19
Accidental machine gun firing	1
Ground accident (rotor injury)	2
Unknown	1
	86

Causes of these incidents have been hostile fire from the ground in 3/4 of the episodes, including 28 aircraft shot down and 35 victims of sharp-shooting from the ground. Causes of in-flight accidents have been control malfunction, tail loss, pilot error in pinnacle landing, collision with high tension wires, disorientation in a storm, RPM governor failure and mid-air collision.

E. Causes of death in helicopter fatalities

Multiple injuries		73
Gunshot wounds		37
Head and neck	17	
Chest	14	
Abdomen	3	
Legs	2	
Unspecified	1	
Cardiovascular injury		23
Head and neck injury		13
Burns		9
Drowning		8
Abdominal injury		3
Chest injury		2
Fat embolization		1
Unknown or unspecified		25

In the American deaths, the cause of death has been designated as "multiple extreme injuries" in most cases, because few autopsies have been performed. In the 51 autopsies which were done, lethal internal heart or brain injury was often found, which was obscured by the surface wounds or burns. A significant group of 37 deaths due to gunshot wounds includes 17 of the head and neck which body armor would not have prevented. The fat embolization case was due to massive release of marrow fat from a broken leg into the circulation with death two hours post-accident.

HEMOTOLOGIC FINDINGS IN MALARIA

by T. W. Sheehy Lt Col, MC
Medical Consultant

At sporulation the malaria parasitized red cells disintegrate with liberation of merozoites, while hemolysis of non-parasitized cells may occur simultaneously. The severity of the anemia in malaria is related to the severity of infection, the degree of hemolysis, and the suppression of erythropoiesis and depends upon the balance between the destruction of red cells and their regeneration in the bone marrow. The mechanism of hemolysin in malaria is still obscure. Past attempts to identify the hemolysis were unsuccessful and lead some observers to believe red cells lysis was mainly the result of an intercellular defect. This belief was disputed by Foy and Kondi who transfused normal red cells into malaria patients who were actively hemolyzing red cells and found the donor red cells were lysed rapidly. They attributed hemolysis of the transfused cells to the presence of a circulating hemolysin in the recipient's plasma.

Later, Foy and Kondi extended their studies on the survival of transfused normal red cells into "blackwater fever patients" and concluded that in this condition the fundamental hemolytic factor was an extracellular hemolysin. This hemolysin was believed to cause the hemolysis of normal cells in patients with blackwater fever; it also altered the cells of blackwater fever patients, for the red cells taken from patients with blackwater fever failed to survive normally when given to healthy volunteers.

Much work must be done to define the underlying causes of anemia in malaria. In acute P. falciparum infection, the red cell count may fall to a million cells in the course of 24 hours. In chronic malaria, the peripheral red cell findings a are often similar to those found in pernicious anemia. Even in young Americans megalocytes are found sometimes in association with malaria anemia. The bone marrow in well established cases of malaria usually undergoes a compensatory hypertrophy and erythroid hyperplasia occurs. Most likely, these changes reflect an increased demand on the bone marrow for new red cells. In keeping with this demand, high reticulocyte counts are found frequently in the peripheral blood. In one series of patients studied by Fairley and Bromfield, the reticulocyte count before treatment ranged from 2 to 7.8 percent and it rose considerably higher during treatment or after cure. High reticulocyte counts have also been noted by others during the untreated course of all forms of human malaria. In some instances the delay in reticulocyte response following treatment is probably due to suppression of erythropoiesis.

The bone marrow is a revealing organ in falciparum malaria but not in vivax malaria. Bone marrow puncture may reveal falciparum parasites when thick smears of peripheral blood are negative. P. falciparum parasites are often demonstrabled in the bone marrow prior to and subsequent to appearance of parasites in the peripheral blood. The bone marrow is also a favorite site for obervation of gametocytes, which are usually found there 6 to 7 days after infection begins clinically. In mild infections, phagocytosis of red cells containing parasitic ring forms is seldom observed but in infections of high parasite density erythrophagocytosis is often marked.

Usually the reticulum cells and the neutrophils phagocytize ring forms. In the neutrophils, ring forms of the parasite may be seen scattered among the granules of the cytoplasm.

Over 40 years age, Maslova pointed out that during a malaria attack the quantity of blood platelets was decreased and the coagulation time was altered. Thrombocytopenia (due to a decrease in production or to failure to release platelets) occurs in P. vivax malaria. Usually the platelet count falls sharply in the first few days of clinical infection and prior to treatment. Little is known about the appearance of the megakaryocytes or their function in P. falciparum malaria. Plasma acid phosphatase studies in malaria might be helpful, for Oski claims increased platelet destruction is associated with raised circulation levels of this enzyme. Platelets may be sequestered in the spleen, or their numbers may be decreased as a result of intravascular coagulation. Autoimmunity is another conjectural mechanism which might lead to platelet destruction in malaria. Platelet agglutinins have not been looked for in this disease.

It is generally recognized that plasmodial infections are characterized by leucopenia. Although a depression of the white blood cells is not always evident at the onset of the attack of malaria, sooner or later neutropenia develops. The presence of this neutropenia in a patient with a temperature of 103 to 104°F is also helpgul diagnostically, for in the event of a bacterial complication the leucopenia reaction fails and leucocytosis occurs. There is also a relationship between the mononuclear cells and the patient's temperature. During afebrile periods, the polymorphonuclear cells will diminish in number while the mononuclear cells (i.e. lymphocytes and monocytes) increase in number. Stephens and Christophers consider this pyrexial increase in mononuclear cells so important they state, "if during a period of low temperature this change is not found, there is a strong presumption that the case is not malaria."

Other changes occur in the blood of malaria patients. Malaria pigment is liberated as the red cells are destroyed by the sporulating parasites. It is the malaria parasite's proteolytic enzymes which break down the hemoglobin of the red cells to the pigment hematin. Conversion of the hemoglobin in the parasitized cell to hematin may account in part for the absence of hemoglobinemia and hemoglobinuria in many patients who have sustained considerable red cell destruction.

ROUTINE IN COUNTRY MEDICAL EVACUATIONS

The constantly increasing number of medical facilities in USARV will permit increased usage of routine in country medical evacuation between the various installations. Procedures for obtaining emergency evacuations are known and pose little or no problems. Similarly, procedures for obtaining out of country evacuation, either on a routine or emergency basis, seldom offer difficulties. Less use is made, however, of routine in country patient transfers between hospitals and of out-patient consultations from various specialists now in country.

Examples of some of the newly arrived specialists are the neurologist and psychologist at the 935th KO team at the 93rd Evacuation Hospital in Long Binh, and the Walter Reed Institute of Research's Renal Dialysis Team at the 3rd Field Hospital in Saigon.

To obtain air transportation for either in patients or out patient consultations, the initiating medical facility follows the same procedures as for obtaining out of country evacuation except that the request is made to the USARV Medical Regulating Officer, Maj Gerald Rose, MSC., (phone army 616 or 603) instead of to the FEJMRO. Maj Rose immediately makes the necessary arrangements with the 9th Aeromedical Squadron or appropriate Army Medical Evacuation Unit. Patients in all categories including psychiatry patients requiring litter sedation and restraint can be routinely transferred between in country medical installations.

The Editor

THE POSTERIOR COLUMN

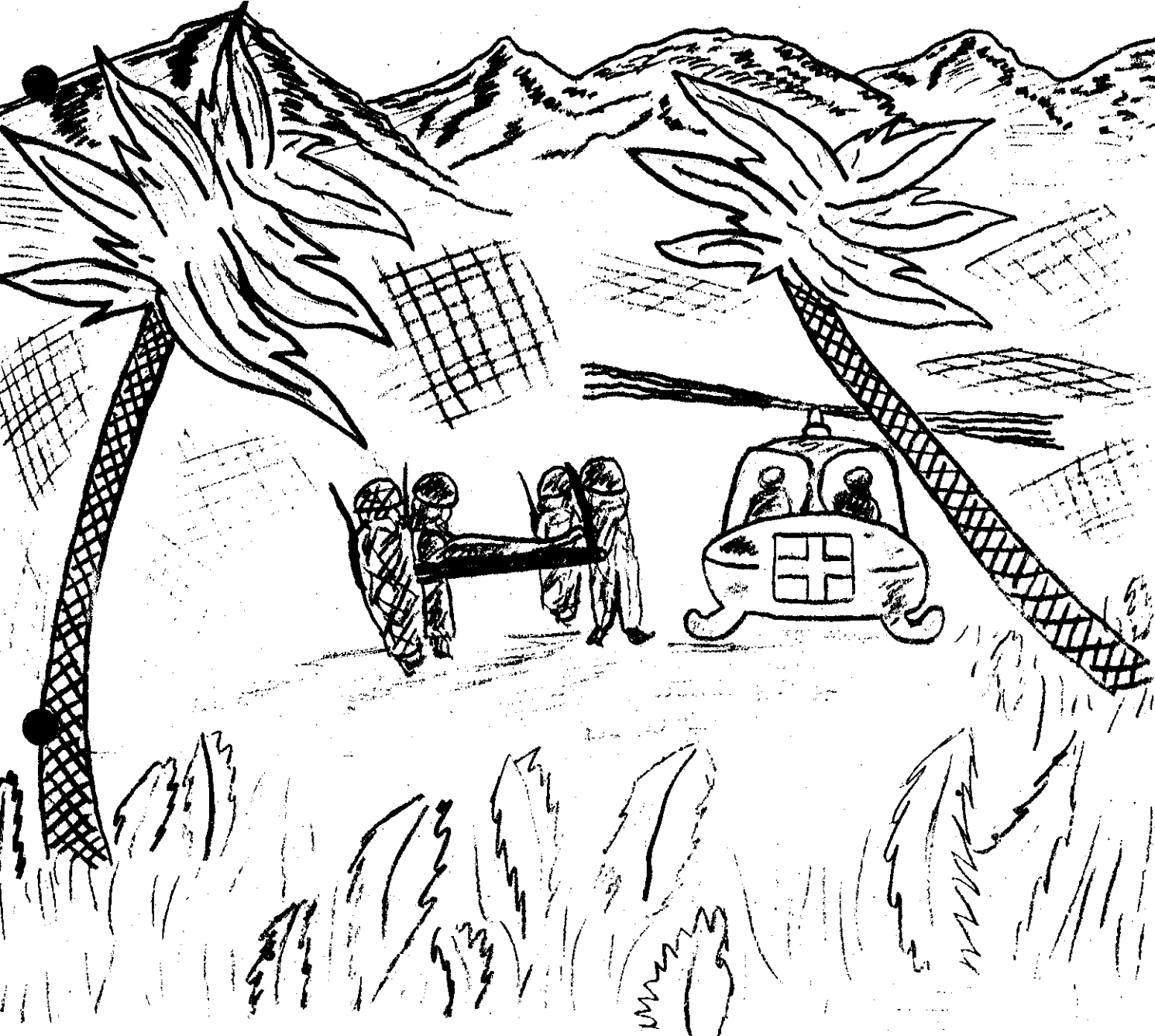
by Harold Rosegay, Lt. Col., M.C.

Last is not necessarily least, and as the Editor has placed Neurosurgery in this position in the Bulletin it has given men the irresistible opportunity of using this title. As you all may know, Neurosurgery has been concentrated in two treatment centers, the 85th Evac Hosp and the 3rd Field Hosp. This not only allows for the best use of the four neurosurgeons in Vietnam, but it also makes it easy for Time Magazine to keep up with our work.

We have recently begun doing cerebral angiography, not to look for trouble in elective cases, but only as an adjunct in the management of head trauma. Even though the films are not of the best because of the long exposure time (about three seconds) with the 50 MA apparatus, they are nevertheless of diagnostic quality and have been useful. As the 100 MA machines appear in the theatre (Christmas is coming) we will be able to offer No.1 studies. We can also be helpful in seizure cases if pneumoencephalography is required. Capt. Bob Daroff (953th KO (NP) team, 93rd Evac Hosp) is now the neurological consultant, and if his hammer is as microscopic as most neurologists' he will soon be asking for air studies. And with good reason. One more air study might mean one less air evac, and that is our mission.

85th Evac Hosp	Col Harold Murphree
APO 96328	Capt Ben Blackett
3rd Field Hosp	Lt Col Harold Rosegay
APO 96307	Capt George Jacobs

HR, Esq.



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USARV
MEDICAL NEWSLETTER

LJR

THE SURGEON'S PAGE

In this issue there is a continuation of brief biographies of the officers of the USARV Surgeon's Office. Last months issue dealt with those in building #17, while this month's issue will deal with those in building #15.

The USARV Dental Surgeon is Col. Ralph B. Snead. He was born in Whitesville, W. Va., and he attended W. Va. University. He attained his Degree in Dentistry from Northwestern University in 1944. Following graduation he began his career in the Army. Among the many tours of duty he has served are included ones in Tokyo, Japan, Kaiserslautern, Germany, the USMA West Point, N. Y., Ft. Monroe, Va., and Ft. Meyer. He attended the advanced course at MFSS in San Antonio, Texas, and the advanced Dental Course at Walter Reed. Col Snead's family resides at Hampton, Va. His hobbies include bowling and boating.

Lt. Col. George W. Fisher, the Surgical Consultant for USARV, was born in Reading, Pa. He attended Franklin and Marshall College, receiving a BS Degree in Chemistry. He attended the University of Maryland where he received his Medical Degree in 1947. He entered service in 1949 and became Regimental Surgeon with the 19th Inf. Regt. 24th Div. in Korea, from July to Dec. 1950. He later saw service in Leghorn, Italy, from 1952 to 1954. He completed his three year surgical residency in 1957 at Fitzsimons, following which he was assigned to Nuremburg, Germany. From 1959 to 1964 he was Thoracic Surgery Resident at Walter Reed serving as assistant chief of service. He is certified in both surgery and Thoracic Surgery and is a Fellow of the American College of Surgeons. He served as assistant Executive Officer at Fitzsimons for three months prior to coming to Vietnam. His family is currently living in Denver. His hobbies include golf and swimming. In addition to being Surgical Consultant, he is also Chief of Professional Services.

Lt. Col. Harold W. Rosegay, the Neurosurgical Consultant, was born in New York, he obtained a B.S. Degree from N.Y.U., a PHD in Neuro-anatomy from Cornell University, and M.D. Degree for Columbia University. He taught Neuro-anatomy at Cornell for three years. His Neurosurgery residency was at the University of Pa. He was certified in 1954 and served as USAREUR Neurosurgery Consultant from 1954 to 1957. He was Chief of Neurosurgery at Fitzsimons prior to coming to Vietnam. Harold has six children and his family resides in Denver. His principal hobby is playing the violin at which he is quite accomplished.

The Medical Consultant of USARV, is Lt. Col. Thomas W. Sheehy. Tom was born in Columbia, Pa. and attended St. Vincent College in Latrobe Pa. where he obtained a B.S. Degree, he received his medical degree from Syracuse. Tom served four years as a infantry officer in the 3rd Infantry Division. He completed a residency in medicine at

Brooke General Hospital in San Antonio. In addition he attended the Basic Science Course at WRAIR. He had a Hematology Fellowship, and he was Chief of Clinical Hematology for three years. He also was Chief of Medicine at the Tropical Research Lab. in Puerto Rico. He was Chief of Gastrointestinal Research at WRAIR from 1963 to 1965. He has written over 100 scientific articles, and he is the author of a book entitled Portal Hypertension and one entitled "The Small Intestine". He has served as Associate Professor of Clinical Medicine at George Washington University. His family resides in the Silver Spring, Maryland area. His hobbies appear to be writing about "blood and guts".

Lt. Col. John N. Gordon, the Psychiatry Consultant, was born in Richmond, Virginia. He attended the University of Richmond obtaining a BA degree and the Medical College of Virginia where he received his MD degree. He has had a psychiatry residency at Fitzsimons and a neurology residency at Walter Reed. He completed the basic course at MFSS following which he went to France from 1954 to 1957. He has been Chief of Neuropsychiatry at Martin Army Hospital, Fort Benning, Georgia and at Fitzsimons General Hospital in Denver. He came to Vietnam from Fitzsimons. His family lives in Denver, and his hobbies are skiing and tennis.

Lt. Col. Clarence H. Piercy Jr., is the USARV Medical Supply Officer. He was born in San Antonio, Texas and attended Miami University in Ohio. Some of his important assignments were as Assistant Chief of the Data Systems Division, Headquarters Defense Supply Agency in Alexandria, Virginia, as well as supply officer for the 9th Field Hospital in World War II. He has seen service in Ireland, England, France and the low countries. He has completed the advance course at MFSS and the Command and General Staff School. His family lives in Alexandria, Virginia, and his hobbies include woodworking.

Lt. Col. Kenneth N. Ports, the USARV Sanitary Engineer, comes from Frederick, Maryland. He holds a BS Degree in Civil Engineering from the University of Maryland and an MPH degree from the Univ. of Minnesota. He has served as an instructor at MFSS in 1951-52 and as CO of the 485th PM Co, 7th Army. He comes to Vietnam from San Antonio where he was 4th Army Sanitary Engineer and where his family currently resides. His hobbies include hunting, camping and scouting.

The position of the Senior Flight Surgeon USARV is filled by Major James E. Hertzog. Jim comes from Ebensburg, Pennsylvania. He obtained his BS degree from Franklin and Marshall College. His MD degree was obtained from the University of Pittsburg and his MPH degree from Harvard. He has had a 3 year residency in Aerospace Medicine. He is certified by the American Board of Preventive Medicine in Aerospace Medicine. He has traveled through many countries of the world such as Australia, South Africa and the Canary Islands

while serving as a medical monitor for projects Mercury and Gemini. In addition he has completed Airborne training and has served as the Director of the Department of Aeromedical Education and Training at the US Army Aviation School, Fort Rucker, Alabama. His wife and family remain at Fort Rucker. His hobbies include electronics, music and swimming.

Major Taras Nowosiwsky, the USARV Preventive Medicine Officer, is from Ispas, Ukraine in Russia. He attended Columbia University obtaining a BA degree, Harvard University obtaining an MD degree and John Hopkins University obtaining an MPH degree. Among his notable assignments he has been preventive medicine officer of the 24th Infantry Division and chief of preventive medicine at Fort Benning, Georgia. His family remains in Chicago, and his hobbies are chess and skiing.

Major Charles H. Segars, the Assistant USARV Medical Supply Officer is on TDY from Tripler General Hospital where he is the hospital Medical Supply Officer. He was born in Athens, Georgia and attended the University of Georgia in Athens where he obtained a BS degree in Agriculture. His service schools include the Assistant Battalion Surgeon School the advance course at MFSS and the Medical Supply Course as well as the Supply and Distribution Management Course, the latter at Fort Lee, Virginia. His family remains in Hawaii. His hobbies include woodworking and photography. We expect to see him over here on PCS in the near future.

EDITOR'S NOTES

For those who can remember as far back as the January issue, it may come as a surprise that the USARV Medical Bulletin has had a name change. Yes, it is now entitled the USARV Medical Newsletter and no further name changes are contemplated in the immediate future. Our thanks go to the AG Section of USARV who pointed out that use of the word "Bulletin" was prohibited by AR in publications of this nature. Our more discerning readers may notice a rather marked similarity between the old "Bulletin" and the new "Newsletter". This is purely intentional, and the name has been changed to protect the guilty.

Thanks are in order to members of the 3rd Field Hospital who generously contributed to the first issue. Apologies are due any authors who were misquoted or misinterpreted.

This issue features the 8th Field Hospital at Nha Trang. The next issue will feature the 85th Evac Hospital at Qui Nhon.

THE 8TH FIELD HOSPITAL IN VIETNAM

The 8th Field Hospital has been located in the coastal city of Nha Trang since 1962 and was the only Army hospital in the Republic of Vietnam until the escalation of the War effort and troop buildup in May of 1965. The hospital is located near the Lon Van Air Base and is approximately 400 yards from a beautiful expanse of sandy beaches. During the period of 1962 through 1965 the 8th Field Hospital provided medical support and served as a specialty treatment center for all of the United States Armed Forces and their dependents in Vietnam. In May 1965 the 9th Field Hospital joined with the 8th Field Hospital to increase the bed capacity to 400 beds.

An extensive building program has been in effect since June 1965 with the original permanent and semi-permanent type buildings being renovated and additional buildings constructed to obtain an ideal physical plan for the total patient care required in the area.

The 8th Field Hospital is assisted by a unit of the 406th Medical Laboratory, 137th Medical Dental Det., 20th Preventive Medical Det., 29th Engineer Det. and the 148th QM Det. The hospital compound is also the home for the Headquarters of the 43d Medical Group and the 32d Medical Supply Depot.

RECENT ANC ARRIVALS IN VIETNAM

Lt Col Marian Tierney	ANC	HQ, USARV
Capt Nancy Christ	ANC	3rd Field
Capt Anna Clark	ANC	3rd Field
Capt Margaret Grice	ANC	93rd Evac
1/Lt Shirley Minor	ANC	8th Field
2/Lt Sara Bavcom	ANC	93rd Evac
2/Lt Susan Eastman	ANC	3rd Field
2/Lt Marlene Lohmiller	ANC	3rd Field
2/Lt Patricia McHugh	ANC	93rd Evac
2/Lt Warren Propst	ANC	93rd Evac
2/Lt Robert Williams	ANC	2nd Surg
2/Lt John Zielozkiewicz	ANC	9th Field

HISTORY OF THE 8TH FIELD HOSPITAL IN WORLD WAR II

The 8th Field Hospital was activated at Camp Butner, North Carolina on 25 January 1943. The unit was deployed to the European Theater of operations and docked at Swansea, Wales on 15 September 1943. This was but the beginning of the frequent moves of the unit to meet the changing requirements of World War II. The unit was moved in succession to Berks, Ringwood, and Everleigh. In these areas 750 bed tent hospitals were erected and made operational. In December 1943 the unit moved to a location near Truro, Cornwall and on 14 December 1943 received their first patient. The hospital acted as second echelon in the chain of medical evacuation, receiving sick and wounded from marshalling areas. 2,515 patients were admitted during the period of 14 December 1943 to 21 April 1944. The spring of 1944 saw the unit preparing for its important role in the Normandy Invasion. On 27 June 1944 the 8th Field Hospital landed on Utah Beach.

The 8th Field Hospital was active in the treatment of battle casualties and was located in Pont L'Abbe, Beneville and Montebourg, France from June 1944 to September 1944. The three hospital units were separated in September 1944 and set up separate treatment facilities at Melum, France for the 3rd Replacement Depot and Le Bourget Air Field to augment the 93rd Medical Gas Treatment Bn. The third hospital unit subsequently joined the unit at Le Bourget Air Field. In October 1944 the hospital opened for receipt of patients in permanent buildings. In the initial phases of this operation a 600 bed hospital was activated. This was later expanded to accomodate 1250 patients a day. In December 1944 the 8th Field Hospital was located near an airfield in the Seine Base Section and was serving as a holding unit. Patients arrived 5 to 7 days after wounding and the average holding time was 24 to 36 hours, with a maximum of 5 days. Up to 1,400 litter cases have been evacuated from this hospital in a single day.

The Headquarters detachment and 1st Hospital Unit was deployed to Biarritz, France to serve troops setting up University Center. One hospital unit continued to function as a station hospital in support of the 366th Medical Bn at the Arles Staging Area with a bed capacity of 100.

The end of 1945 found the 8th Field busily engaged in support activities in France with the three hospital units in different areas operating as 160 bed treatment facilities.

The 8th Field Hospital received Battle Credits for Normandy, Northern France and Central Europe during World War II. The unit was inactivated on 31 June 1946 in France following its highly commendable period of contribution to medical care during the critical times of conflict in France.

KEY HOSPITAL PERSONNEL

LT COLONEL STANLEY NEWMAN - Hospital Commander.

Lt Colonel Newman graduated from the Medical College of Virginia in 1949, and entered the United States Army for his intership at Walter Reed Army Hospital. He completed his residency in Internal Medicine at Walter Reed Army Hospital and followed this with the Military Medicine and Allied Science Course at the Walter Reed Institute of Research and Training in radio-active isotopes at the Walter Reed Army Hospital.

Lt Colonel Newman next served at Letterman General Hospital for three years where he performed clinical work in the Radio-Active Isotope Clinic and in the field of Endocrinology. He next completed a one year Fellowship at the Peter Forsham Clinic, University of California in the Field of Endocrinology and Metabolism.

Lt Colonel Newman's last stateside duty was at Madgan Army Hospital where he served as Assistant Chief, Department of Medicine. Lt Colonel Newman departed from Fort Lewis, Washington as Commanding Officer of the 51st Field Hospital in October 1965 enroute to Vietnam for Augmentation of the 3rd Field Hospital in Saigon. Subsequently he was reassigned as Commanding Officer of the 8th Field Hospital in Nha Trang.

Lt Colonel Newman is a Diplomat of the American Board of Internal Medicine, a member of the American Endocrinology Society, the Society of Nuclear Medicine, American Medical Association and the American Federation for Clinical Research.

Lt Colonel Newman has made many significant contributions to medical literature in the fields of Endocrinology and Metabolism and is a major contributor to "The Textbook of Disease of Medical Progress", edited by Robert H. Moser.

During Lt Colonel Newman's tour of duty in Vietnam, his wife and four children are residing at Fort Lewis, Washington.

MAJOR ANNA BUTCHER - Chief Nurse.

Major Butcher entered the Regular Army in November of 1951 following her nursing education at Logan General Hospital, West Virginia. She was a member of the Last Basic Course for Newly Commissioned Nurses which was given at Fort Meade, Maryland. She also a graduate of the Head Nurse and Supervisor's Course at the Medical Field Service School in March 1958.

Major Butcher has had sucessive tours at the Pentagon Dispensary, France, Germany, Fort Hamilton and Fort Bragg. She served with the 121st Evacuation Hospital is Korea in 1962 to 1963.

Major Butcher arrived in Vietnam with the 85th Evacuation Hospital in September 1965. She was assigned to the 8th Field Hospital as Chief Nurse on December 1965.

MAJOR ELBERT B. FOUNTAIN - Chief of Professional Services
Chief, Surgical Service

Major Fountain graduated from Howard University in 1948 and was in private practice in North Carolina when he entered the Army as what he call a "Reluctant Reservist" during the Korean conflict in 1951. Following a tour of duty in Korea and Japan he entered the Surgical Residenary Program at Tripler Army Hospital and completed the residency in June 1958.

Major Fountain completed the advanced Medical Officer's Course at Fort Sam Houston and was next assigned as Chief, General Surgical Service, Fort Dix, New Jersey. A tour of duty in Germany followed in 1961 with successive, assignments as Commanding Officer, 4th Surgical Hospital, 5th Surgical Hospital and Chief, General Surgery at the 130th Station Hospital in Heidelberg. On his return to the United States in September 1964, Major Fountain was assigned as Chief Professional Service and Chief, Surgical Service at the U.S, Army Hospital, Fort Irwin, California.

Major Fountain came to Vietnam with the 51st Field Hospital on 31 October 1965 and was subsequently assigned to his present position at the 8th Field Hospital.

Major Fountain is Diplomat, American Board of Surgery and a member of the American Medical Association.

BACKACHE IN VIETNAM - A STUDY OF 58 CASES

Michael Mittlemann, Maj., M.C. and
Russel W. Van Norman, Maj., M.C.
Orthopaedic Surgery Service
8th Field Hospital
APO US Forces 96240

The patient with a painful back has always been a well known non-combat, bedclogging orthopedic entity in overseas theaters of military operation. To limit the time lost from duty, the time of occupancy of a hospital bed, and the time of total disability from the backache itself, a positive approach was evaluated and is presently being used at the 8th Field Hospital, Nha Trang.

Of 454 orthopaedic admissions from April 1965 through September 1965, fifty eight cases were due to backache (Table 1). Following the patient's admission, a brief, but concise history was taken including, particularly questions of acute injury, chronic disease and psychological overly. Physical examination required observation of the patient's behavior and attitude, range of motion of the spine and neurological status. Each patient had x-rays taken of the lumbar spine. A uniform program of therapy was conducted. Absolute bed rest, especially in acute cases, was mandatory. Local ice packs were applied for relief of symptoms. No muscle relaxant drugs were used. Although analgesics were always available, few if any of the patients asked for, required or received medication. Back mobilization exercises were initiated as early as during the physical examination and were continued throughout the full hospital course. A mineographed copy of the instructions was given to each patient (Table 2). Relaxation between exercise maneuvers became an additional point of instruction. Progressive mobilization was allowed as tolerated with the limits of comfort. With improvement, ambulation was permitted. Repetitive use of the phrase "back pain" while on daily rounds was avoided by the authors in preference to objective observation of behavior, mobility and performance of the motion exercises. Thus, the patient with backache had a program of rest combined with progressively increasing activities as tolerated.

Table 3 summarizes the diagnostic categories and the disposition of these patients. There were forty one Army, thirteen Marine and four Air Force personnel. The average age of the patients was 28.5 years (range 18-53) with an average of 8.2 years military service (range 1 - 20.8). Hospitalization time for the entire backache group averaged 4.1 days (range 1 - 12) compared with 6 days for the average hospital patient. The number of days a patient remains in a combat zone hospital are influenced by a number of factors including urgent need for beds, priorities in aeromedical evacuation out of the country which would delay departure, and delay in return to duty due to transportation schedules.

Of the 58 patients admitted, 38 (66%) were returned to combat or combat support duty. 18 (30%) of the patients were evacuated from Vietnam, two patients (4%) were returned to duty, later readmitted, and finally evacuated for neurosurgical consultation. They both occupied hospital beds for a total of 24 days. One of these had the diagnosis of Herniated Nucleus Pulposus made in 1956 but no surgery was recommended. In the group of 9 patients with the diagnosis of Herniated Nucelus Pulposus, 8 were evacuated. Psychiatric aspects were noted in only 3 cases, one of which was transferred from Vietnam with the diagnosis of schizoid personality. The low number of readmissions (total 2) might be due to factors such as a former patient's rotation to the States, troop movements, the combat situation and the possibility of eventual direct evacuation from other medical facilities.

The management of backache may often be a source of frustration to the patient and physician alike, particularly in a combat zone. The purpose of this review has been to analyze the results of a positive approach to the patient with backache. Through early diagnosis by evaluation of history, physical examination, x-ray, and a rapid positive mobilization program, a high percent (66%) have been returned to duty. This has been accomplished in a much shorter time than Stateside experience has led us to expect. By critical selection, evacuation was necessary for a small but significant group who required care beyond the facilities of a Field Hospital. It is felt that this program of excercise therapy provides the backache patient with the concept of physical conditioning as a primary means of treatment for relief which may serve him well in the future.

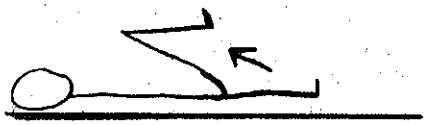
Backache in Vietnam — Table 1

1965	Total pts admitted	Orthopaedic pts admitted	Backache pts admitted
April	250	76	8
May	314	67	10
June	392	71	8
July	378	48	10
August	556	83	10
September	632	109	14
Total	2512	454	60*

* Actual patient number 58. 2 were readmissions.

BACK EXERCISE PROGRAM FOR ACTIVE MOBILIZATION TREATMENT

I. KNEES TO ARMPITS

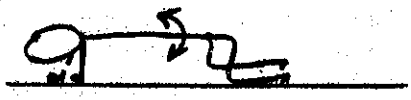


II. SITUPS

(A) KNEES BENT

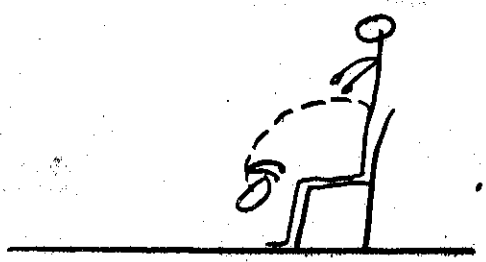
(B) KNEES STRAIGHT

III. PELVIC TWIST



IV. BACK ARCH UP & RELAX

V. LOOK UNDER CHAIR



VI. PROPER POSTURE

CORRECT LIFTING HABITS

BODY WEIGHT EVALUATION

The performance of this program-with repetitions of exercises as tolerated
-with additions where needed
-at almost any level of medical care in RVN is a positive step towards the patient helping himself to recovery.

TABLE 3

Diagnosis Category (DOD TBMed 15 July 1963)	Total number of patients	Duty	Evacuated
ACUTE LUMBAGO acute lumbosacral strain lumbar strain strain low back	22	19	3
CHRONIC LUMBAGO recurrent lumbago	11	5	6
HERNIATED NUCLEUS PULPOSUS possible HNP residuals HNP sciatica	9	1	8
CONTUSIONS	8	-	8
MISCELLANEOUS spondylolisthesis spondylolysis schizoid personality	3	1	2
LUMBAGO (ill defined) pain in back back pain low back pain	5	4	1

THE FIELD ARMY MEDICAL INSTALLATION AS A CLINICAL LABORATORY

Russel W. Van Norman
Major, Medical Corps
8th Field Hospital
APO US Forces 96240

It has been stated repeatedly that the experiences gained in previous wars must be learned again at the start of a new war because no one bothers to review that which had been written. Certainly this is as pertinent in military medicine as in all other military fields. But even having learned well the lessons of a previous war, one should only have a starting place for improving upon the care of the wounded. Certainly, there is little time in a mass casualty situation to record data, summarize treatment and draw generalizations, but if it is not done then the data is lost and, although numerous patients are treated, no helpful experience is gained which can be passed on to the doctors

that follow. So, in essence, each level of medical care in the combat zone must become a clinical laboratory or else our care of patients can only reflect the percentages of the past and cannot reduce mortality nor improve patient handling.

One of the most significant studies to come out of the Korean War was the four volume series entitled "Battle Casualties in Korea: Studies of the Surgical Research Team". Volume III is devoted to Clinical Experiences. The Surgical Research Team of Korea was stationed at the 46th Surgical Hospital and their studies reflect the statistics of the last eighteen months of the war. Situated ten miles behind the Main Line of Resistance, the 46th Surgical Hospital supported the 45th Infantry Division, the 40th Infantry Division and the Philippine Expeditionary Force. Casualties included those from such actions as the Punch Bowl, Sandbag Castle, Heartbreak Ridge, and Christmas Hill. Team leaders included Captain John M. Howard in 1952 and Major Curtis P. Artz in 1953. Results were compiled from operative records and statistical data sheets. These sheets were prepared as study sheets and incorporated, on admission, as part of the patient's chart. The surgeon responsible for the patient's care completed the chart. The surgeon responsible for the patient's care completed the sheet at the time of the patient's evacuation and the sheet was kept by the Research Team. Besides a tabulation of the total statistics, the results were also studied at monthly surgical meetings and resulted in "on-the-spot" improvement in management.

This particular volume consists of twenty-three papers covering general and specific problems and special laboratory surveys. A review of several of the interesting charts and papers lends support to the plea: the field army medical installation is a clinical laboratory.

A Survey of Evacuation, Resuscitation and Mortality in the 46th Surgical Hospital covering the last three months of the conflict, 1 May to 1 August 1953 was made. They felt that, in general, this study reflected experiences gained in the previous fifteen months. The constants in the situation were: 1) little change in the tactical situation, 2) patient load, 3) mode of evacuation and 4) stationary hospital site. Patients included in the survey were: 1) wounds of the abdomen, chest, or combined abdomen and chest; 2) patients with wounds requiring amputation; and 3) patients with open fractures.

A condensation of several of their charts (Chart 1) reveals the mortality to have from 1.2% in open fractures to 12.0% in abdominal wounds. Total time from injury to surgery in this group was 6.6 hours compared with 8.9 hours in World War II (Mediterranean Theatre). The number of units of blood used seems much larger than has been found necessary in the present war.

Several other selected charts appear of interest. Chart 2 reflects the number of injuries and percent mortality in various abdominal organ

injuries as compared with a comparable installation of World War II, the Second Auxiliary Group. Chart 3 compares the number of organs injured in any one casualty and the mortality between Korea and W.W.II patients. Frequency of organ injury was: colon, small intestine and liver, kidney, spleen and stomach.

The lower mortality rate in the Korean Conflict is attributed to three factors:

1. The shorter evacuation time. Even though more patients are saved, the overall mortality rate increases because the more severely wounded casualties will now reach the definitive treatment center.

2. Administration of large quantities of resuscitative fluids pre-operatively and during surgery. The Research Team concluded, however:

> "The greatest single difference in the management of casualties in Korea appears to be the large quantities of blood administered throughout resuscitation."

3. Routine use of antibiotics.

Captain John M. Howard in a final paper in the volume entitled "Future Research in Support of the Battle Casualty" suggests a number of projects which should be carried out "should the occasion ever arise again when American troops are engaged in combat." Several areas which seem pertinent for us in the Combat Theatre include:

1. Clinical Surgery and Organized Follow-Up: Examples given for Korea include the advances in neurosurgery and vascular surgery. The experiences of forward areas correlated with secondary hospital follow-up must lead to new techniques in all phases of war surgery.

2. Management and Study of Abdominal Trauma: The mortality remains high. Forward hospitals must engage in clinical and basic studies not only to lower the current fatality rate, but also to describe the causes of fatalities in those not saved.

3. Debridement and Wound Infections: The hospital in the combat theatre has unlimited subjects for study in further advancing the care of wounds.

4. Anesthetic Management: As opposed to civilian injuries, the battle casualty has sustained blood loss and has had some autonomic nervous system response. This latter is blocked by anesthesia so that there is greater hazard than in non-traumatic cases.

5. Study of the Blood and Plasma Expander Program: Is our experience in using limited amounts of blood peculiar to our type of casualties or does this reflect new trends in patient care?

At present, a study is being undertaken to review casualties at the Field Hospital Level (Chart 4). It is hoped that with a concentration of facts, trends toward better patient care and decreased mortality can be realized and developed.

REFERENCE:

Howard, John M., Battle Casualties in Korea: Studies of the Surgical Research Team. Army Medical Service Graduate School, Washington,D.C., 1955.

(See Charts - Pages 15, 16 & 17)

POIGNANT POINTERS

A number of morphine intoxication cases resulting from overdosage of wounded patients have been observed. Great care should be exercised to avoid this in every patient especially in those with symptoms of shock. All AMEDS personnel authorized to give morphine should be advised of this fact.

The use of gasoline to burn human waste or other substances has resulted in painful burns in several patients. The use of diesel oil with its' higher flash point is much safer. Unit medical officers should advise commanders to prohibit their men from using gasoline in such a dangerous manner.

Trials of inflatable splints for arms & legs have been made in the field and in hospitals. These splints have proved to be most valuable and practicable. They will be issued to medical units as they become available.

Both officer and enlisted personnel who have experienced severe & terrifying combat experiences should not be permitted to go on R & R Trips to exotic places such as Hong Kong or Bangkok unless they are entirely free of symptoms of combat exhaustion. The R & R in those with symptoms such as depression, insomnia and tremulousness makes rehabilitation quite difficult and seldom diminishes the symptoms in the slightest.

Artillery personnel should be cautioned to use ear plugs, to prevent hearing loss. Personnel with H-2 or H-3, profiles should not be used to man listening posts as serious consequences may result from this practice.

CHART 1.

COMPILATION OF WOUNDS, MORTALITY, ELAPSED TIME AND BLOOD USED, 46TH S.H.

TYPE OF WOUND	TOTAL #	# DIED	MORTALITY %	INJ. TO ADMISSION (hours)	ADMISSION TO SURG. (hours)
ABDOMINAL	75	9	12.0	3.1	3.2
THORACO-ABD	29	3	10.3	4.7	2.7
THORACIC	33	2	6.1	3.7	3.8
AMPUTATIONS	31	3	9.7	4.2	2.6
OPEN FRACTURES	82	1	1.2	3.5	2.7
AVERAGE				3.6	3.0

	INJ. TO SURGERY (hours)	OP. TIME (hours)	TOTAL BLOOD (to end of 1st 24 h's)
ABDOMINAL	6.3	2.4	14 units*
THORACO-ABD	7.9	2.3	11 units
THORACIC	7.5	1.6	7 units
AMPUTATIONS	6.8	1.6	14 units**
OPEN FRACTURES	6.2	1.3	4 units
AVERAGE	6.6 (WW II 8.9)	1.8	

NOTE: * Excludes transfusions of 40, 46, 56 units and 1 not recorded.
** Excludes one transfusion of 35 pints

CHART 2.

ABDOMINAL ORGAN INJURIES AND MORTALITY

ORGAN	KOREA 1952-1953		WW II* 1942-1945	
	No. pts.	% Mortality	No. pts.	% Mortality
Colon	140	15	1106	37
Jejunum & Ileum	134	13.4	1168	30
Liver	102	15.6	829	27
Stomach	45	17.5	416	41
Kidney	55	25.4	427	35
Spleen	54	15.0	341	25
Rectum	22	18.1	155	30
Bladder	21	9.4	155	30
Duodenum	17	41.1	118	56
Pancreas	9	22.2	62	58
Gallbladder	33	0	53	30
Ureter	4	50.0	27	41

*Second Auxiliary Group

CHART 3.

NUMBER OF ABDOMINAL ORGANS INJURED VS. MORTALITY

NUMBER OF ORGANS INJURED	KOREA (Injury to Operation Time avg's 7 H's) No. pts. Wounded	% Deaths	(Injury to Operation Time 7 h's or less) No. pts. Wounded	% Deaths
0	36	2.80	98	5
1	181	6.62	496	10
2	102	6.82	402	24
3	45	26.60	132	42
4	12	58.30	41	54
5	6	16.00	13	92
6	2	50.00	3	100
TOTAL	384		1185	
AVERAGE		10.68		20.51

* Second Auxiliary Group

REHABILITATION IN THE COMBAT ZONE

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Planning for the rehabilitation of the patient in the combat zone is not an easy task. Due to many uncertainties, such as mass casualties the organization and completion of the program naturally depends on the situation. It has been found at the 8th Field Hospital that within a thirty day evacuation policy a considerable amount of physical therapy can be accomplished. Immediate rehabilitation following injury aids both in the recovery of the wounded part and the individual's outlook for the future. A patient with an open gunshot fracture of the tibia instructed in the use of his quadriceps muscle before surgery demonstrates to himself that the function of a major muscle is still preserved. Daily reassurance by the physician stimulates him to continue the program with optimism. The gloom and despair so often found in the fresh battle casualty can be reversed. How often we have seen the patient smile for the first time when he can see for himself what can be done.....even if it is just a little toe motion. The intensive preoperative quadriceps reconditioning before medial menisectomy and continuation immediately upon recovery from anesthesia is well known. Why not in combat and noncombat casualties?

To support an approach of this type the concepts of the Convalescent Center as described in Field Manual 8-16 (Medical Service Field Army) have been modified. Without a specific physical therapy section this responsibility has been assumed by the Orthopaedic service. It has been called the Rehabilitation Unit. The mission is to provide physical reconditioning to patients at the 8th Field Hospital. The benefits are twofold. This Unit limits the necessity for evacuation of patients who require care but who can be returned to duty within the designated evacuation policy. It also assists future rehabilitation in CONUS by prevention of muscle atrophy and particularly initiates early thinking in terms of self therapy and recovery.

Primary instructions are outlined by the officers (orthopaedic surgeons) in charge of the Unit. This is often done prior to surgery while the patient is in the Xray section or the preoperative ward. It takes only a few extra minutes. Muscle and nerve testing is part of the physical examination. It may indeed be the moment to indicate that this muscle activity is the first step to rehabilitation. Postoperative orders include instructions such as finger exercises, toe motion, isometric quadriceps, and straight leg raising according to the needs of the case. Nurses, ward corpsman, and surgical technicians assist by continuing encouragement to use the injured part

within the limits of comfort. Use of the uninvolved parts is stressed. Where possible patients who are talented in sports, physical conditioning, or who reveal proficiency in their own exercise performance are utilized as supplementary instructors under careful supervision. As the Red Cross facilities expand in the area of recreation further coordination will provide better occupational and diversional activity.

For over eleven months nearly 1500 patients on the surgical and orthopaedic service have had direct attention paid to their need for physical therapy. In January 1966, for example, 80 patients have had additional specific bedside visits for exercise instruction, supplementing the instructions given on ward rounds. Conditioning exercises of all major joints following combat and noncombat injuries have been carried out. Active range of motion exercises, self assistive pulley exerciser devices attached to beds or to roof rafters, isometrics beneath plaster casts or dressings, dynamic hand splints with outrigger attachments, gait training with or without crutches are but a few of the types on the program. Recently consultations have been accepted from the General Surgery and Medical Services. Examples of cases seen in this group include postoperative chest cases, and in the months to come may add reconditioning activities for malaria patients who are selected for return to duty. Active mobilization therapy for lumbago patients has been highly successful in returning over 65% of backache admissions to duty.

In conclusion, it is felt that in a facility such as a 400 bed Field Hospital working under a 30 day evacuation policy improvement in patient care can be afforded by the establishment of a Rehabilitation Unit. The patient will benefit in several ways:

1. By overall improvement of performance and function of the injured part and the body as a whole.

2. By psychological reassurance that preservation of function has been maintained prior to return to duty in the combat zone.

3. By immediate rehabilitation inspite of evacuation to CONUS.

4. By the team effort towards full recovery.

HOOKWORM INFESTATION

R. Levine, Capt MC & T. W. Sheehy, Lt Col MC

Recently, within a ten day period, eleven patients were hospitalized at the 3rd Field Hospital, Saigon with an admitting diagnosis of probable peptic ulcer. The primary complaint of each of these individuals was directed towards the gastrointestinal tract for most complained of abdominal pain and or cramps of varying severity and intensity. The duration of these gastrointestinal symptoms ranged from 1 to 8 weeks. (TABLE I) Four individuals characterized their abdominal pain as crampy; two claimed the pain was "burning" and in others the pain was described as generalized. Seven patients localized their abdominal pain to the midepigastrium; one to the infraumbilical area and one to the lower abdominal quadrants. Four of the patients had a watery type diarrhea and four had intermittent nausea and vomiting. Two of the patients had been hospitalized recently because of gastrointestinal symptoms and had been treated with an ulcer regimen. A recent weight loss of 10 to 30 pounds was experienced by 4 of the patients. The one initial clinical clue to final diagnosis in this group was eosinophilia. This is a valuable tip when dealing with patients who have gastrointestinal distress or ulcer symptoms in tropical areas.

On physical examination, midepigastric tenderness was elicited with ease in five patients, (a finding also noted in amebic liver abscess) and in two lower quadrant tenderness was marked. The others had generalized tenderness to deep abdominal palpation. One patient had bilateral wheezes over both lung fields.

A past history indicated five of the patients had recently had symptoms suggestive of an upper respiratory infection and four remembered having a recent cough. None were certain that they had an itch or a dermatitis.

Laboratory data: The hematocrits values for the group were within expected limits and peripheral blood smears showed normocytic, normochromic red blood cells. White cell counts ranged from 4850 to 14,450 cells per cu mm. Ten of the eleven patients had eosinophilia (range 6 to 38 per cent). All the patients had normal values for the following test: Serum bilirubin, SGOT, BUN and urinanalysis. Their chest X-rays were normal. Stool examinations were positive for hookworm ova in all 11 patients; occult blood was found in 5 stools checked for blood.

Hospital Course: All eleven patients were given a liquid supper the night prior to treatment with tetrachloroethylene (4 capsules each)

(Cont'd p. 22)

TABLE I

Findings in Hookworm Infestation

Simulating Peptic Ulcer

CASE	SYMPTOMS	DURATION (Months)	STOOL (Hookworm)	HCT (%)	WBC (cu mm)	EOSINOPHILIA (%)	WT LOSS (Lbs)
1.	Epigastric pain	1	+	47%	7650	26%	
2.	Epigastric pain	1 1/2	+	43%	7000	31%	
3.	Epigastric pain occ. vomiting	1	+	44%	9000	38%	20
4.	Epigastric pain	1 3/4	+	47%	9650	2%	10
5.	Abdominal cramps nausea & vomiting	1/2	+	48%	10000	28%	
6.	Inframbilical diarrhea	2	+	42%	12300	37%	
7.	Epigastric pain RUQ pain, nausea	3/4	+	45%	4850	6%	
8.	Epigastric pain Flatulence diarrhea	1/2	+	47%	9600	16%	20
9.	Epigastric pain diarrhea	1	+	50%	14450	35%	30
10.	Generalized Abdominal pain, diarrhea	1/4	+	45%	10250	20%	
11.	Lower Abdominal quadrant pain & cramps	1	+	46%	8100	7%	

and received a saline purge 3-5 hours after the drug was administered. All subsequently did well and are being followed for evidence of continued infection.

Discussion: The interesting factor of this small study was that eight of the 11 patients were from the same infantry unit. Their company had been stationed in the neighborhood of a small village near Bien Hoa, RVN for several weeks. None of the patients admitted walking about the area barefoot but many had worn rubber clogs to the company shower. Ten men had also spent considerable time digging trenches or sitting in foxholes and many admitted to leaning with bare arms on the ground around their foxholes.

TIPS FROM THE FIELD

In a country such as RVN where hookworm and strongyloides abound, all patients with bronchitis, viral type pneumonia or dyspepsia should receive a careful examination of their feces. Gastrointestinal symptoms comprise a prominent part of the clinical syndrome caused by hookworm infestation and usually such symptoms begin six to eighteen weeks after exposure. In some patients, the disease first makes itself apparent by an acute attack of abdominal pain, nausea, vomiting or diarrhea; in others, abdominal complaints develop gradually and are associated with weight loss and intractable diarrhea. Pain is the most prominent intestinal complaint. Usually, it is epigastric and often as in the present cases it is suggestive of peptic ulcer. As a rule the epigastric pain associated with hookworm infestation is made worse by food. A large percentage of patients with hookworm will have roentgenologic changes in their gastrointestinal tracts and these may appear within one month of exposure. Usually, these roentgen changes are first demonstrable in the proximal jejunum; later they spread to the distal duodenum, distal jejunum and throughout the ileum. In patients with minor roentgen changes on barium sulfate examination of the small bowel, jejunal tenderness on compression of that area occurs with enough regularity in the tropics to suggest a clinical diagnosis of hookworm infestation. The roentgen changes in the small bowel are those of a "deficiency pattern" and they are characterized by excessive persistalic and segmental contractions of the small bowel plus distortion of the mucosal pattern. These changes are due in some instances to a loss of the normal architecture of the small bowel mucosa and to edema of the submucosa. Usually, improvement in the roentgen manifestations, the bowel mucosa and the gastrointestinal symptoms occurs soon after proper therapy for hookworm is instituted.

The fact to be emphasized in this study is that ancylostomiasis may produce the clinical manifestations of peptic ulcer and these symtoms clear after treatment with the proper vermifuge. This is important for in a military area where a gastrointestinal series is

unavailable, the intractable ulcer symptoms may often be cured by antihelminthic therapy and a needless evacuation forestalled. In essence the vermifuge serves as a therapeutic diagnostic test.

Another misconception that should be put to rest is the belief that hookworm infestation is gotten only by going barefoot in an infested area. The foxhole is an ideal place to acquire hookworm and the infection may be acquired on the face, the head, or the arms. It can also be acquired in other ways and the following example is worth quoting: "In a practice march into the countryside and through a coffee plantations, 2 of 4 companies of a battalion were unfortunate enough to pass through infected mud; they were well shod with Army shoes and leggings and yet the muddy water, entering through the eyelets of the shoe and over its top infected 50 men".

Other parasitic infections may also simulate peptic ulcer disease: notable for this are giardiasis, strongyloides and amebiasis.

(See Chart p. 21)

THE POSTERIOR COLUMN
BYGONE DAYS

The following story is told of Sir Henry Head, noted for his studies in aphasia. He came out of the National Hospital one day, very lighthearted and pleased with himself about certain thoughts that had occurred to him in regard to disorders of speech, and walking down the street he saw Hughlings Jackson waiting there. Jackson is said to have been a morose, somewhat dour individual, and that day he looked particularly so. Nevertheless, Sir Henry bounced up to him and began to tell of his latest ideas, whereupon Jackson said, "Please, Sir Henry, not now. I'm making observations on my own migraine."

Very few things are new or at least different in clinical Neurosurgery and it is a safe bet that anything we are excited about is old stuff to the oldtimers. And Dr. Howard Naffziger was one of the best. For one of his regular consultant visits at Letterman we had collected three unusual cases of circumscribed, densely calcified desions of the brain for presentation. He listened to the histories and the findings, and regarded the x-rays, and then as we settled down for the discussion, he made his move. "In the olden days," he said, "We used to call these 'brain stones'." And that was that.

Dr. Francis Grant is another master of deflation. I was assisting him in a case of meningioma of the cerebello-pontine angle. The patient had only presented with unilateral hearing loss and hypalgesia of the side of the face, and there we were, involved in a bad situation with the tumor impacted against the brain stem and among the cranial nerves. It could not be budged. It began to bleed, and things got worrisome. Dr. Grant took a generous piece for biopsy, and closed. He went up to see his office patients, and I went to the postop ward. The patient was deeply comatose, the breathing labored, and the blood pressure high and rising. After tapping the ventricle I went up to the office and told Dr. Grant we would lose the case if nothing more were done. He then had me take the patient back to the operating room and set up again. He came down in a few minutes, scrubbed only very briefly, and re-opened the wound. As he detached the suboccipital muscles the tumor slid out, right into his hand. I suppose the bleeding around the capsule combined with the pressures against it had loosened the tumor in its bed. He irrigated the cavity; there was no additional bleeding. The cerebellum was soft and relaxed. Turning to me he said, "I always do these cases in two stages." He might at least have winked.

Harold Rosegay

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USARV MEDICAL NEWSLETTER

DPS RAUES

PLAGUE, CHOLERA AND ENTERIC DISEASES IN CIVILIAN COMMUNITIES

(First Quarter 1966)

by Dr. Joe L. Stockard
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PLAGUE

Plague continued to be widely distributed in Regions I, II, and III. The Epidemic which began in Hue during January reached a peak incidence of 134 cases during the period February 13 to February 26. Subsequently the number of new cases has declined steadily to a new low of 24 cases during the week ending March 26. Lt. Col. Marshall of the MRT recently investigated the epidemic in Hue and Thua Thien Province. During the period from Jan 2 to Mar 6 a total or 213 suspect and 86 confirmed cases occurred. Of these 94 suspect and 60 confirmed cases lived in Hue. The remainder came from Thua Thien Province. The close proximity of the patient's homes to waterways suggests that river rats may be the important source of infection. The market in Hue appears to be another important focus of plague.

Plague cases officially reported to the Ministry of Health, Service of Preventive Medicine during the first 12 weeks of 1966 are presented in Table I. A total of 463 cases and 16 deaths were reported from March 1 through March 26. These came from 12 provinces and 3 prefectures. Specimens were received from a grand total of 87 patients. Bubo aspiration specimens from 43 patients were positive. Three of these patients yielded positive sputums, and a fourth patient also had a positive blood culture. Table II summarizes data obtained on positive cultures during 1966.

The Plague Laboratory reported the presence in Vietnam of Streptomycin resistant Pasteurella pestis organisms last year. These same strains were reexamined recently and were found to multiply in cultures containing 6.25 micrograms and 12.5 micrograms of Streptomycin per c.c. It appears that different lots or brands of streptomycin may differ in potency. However, there is no evidence of any therapeutic failures with streptomycin at present and this drug is still the treatment of choice. It is requested that anyone having evidence of failures of streptomycin in the treatment of plague cases report details to Lt. Col. John Marshall, US Army Medical Research Team (WRAIR) Vietnam, APO US Forces 96307, as soon as possible.

CHOLERA

Outbreaks and sporadic cases of cholera continued to be reported from the following provinces:

Thua Thien, Phong Dinh, Khanh Hoa, Bien Hoa, Long Xuyen, Vinh Long, Long An, Binh Tuy, Binh Long, Phu Yen.

Official Ministry of Health reports indicate that thus far during 1966 a total of 2,486 cases and 39 deaths have been notified. Of these 1841 have been admitted to Cho Quan Hospital and 419 to the Nhi Dong, Children's Hospital in Saigon. During the early part of March, the number daily admissions to Cho Quan Hospital varied from 45 to 60. It is understood that recently this number has increased to about 75 new cholera suspected admissions per day.

Miss Sahms, USAID nurse assigned to Cho Quan Hospital reported a shortage of intravenous tubing kits. None were on hand at Cho Quan Hospital and the supply at the Phutho warehouse was exhausted after she obtained 300 kits. An additional supply was obtained from a U.S. Military source. It was feared that a shortage intravenous fluid for treatment of cholera might also develop. However a new supply of lactated Ringer's solution has now been received.

OTHER ENTERIC DISEASES

The Enteric Disease Laboratory of USAMRTV, is isolating a wide variety of enteric pathogens from diarrhea disease patients in Saigon and some of the provinces. The volume of data being accumulated by the unit is large and it has not been possible to complete a satisfactory summary.

The PEMS proposes to assist in this task as soon as one additional staff member has been employed.

A serious epidemic of gastroenteritis and typhoid fever has been reported recently at Moc Hoa in Kien Tuong Province. One case of typhoid fever has been confirmed bacteriologically. The epidemic is occurring among a group of about 700 refugees who are living under very primitive conditions in the town of Moc Hoa. The group is comprised of women and children only. All are said to be V.C. sympathizers. It has not been possible to obtain an adequate supply of chloramphenicol. This problem was discussed with the Medecin Chef of Kien Tuong in Saigon last Saturday. I emphasize that under these circumstances of a mixed epidemic it was vitally important that typhoid fever patients be selected for treatment with Chlorampheicol. Patients suffering dysentery should be treated with other drugs. It was also pointed out that Huckstep found it necessary to conserve his limited supply of chloramphenicol. He gave this drug in 0.5 gram doses 3 times daily until the pyrexia settled and then in 0.25 gram amount 3 times a day for 2 additional days. Chloramphenicol

was then discontinued and resumed only if fever recurred or complications developed. Huckstep observed that this dosage scheme was far from perfect, that the relapse rate was high but the regimen permitted treatment of a maximum number of patients when supplies were short. (See Tables I & II)

EDITORS NOTES

The February issue of the Newsletter featured excellent articles by the staff of the 8th Field Hospital. One of these by Maj Hazlett was inadvertently omitted and appears in this issue. The 85th Evacuation Hospital is featured this month and the 93rd Evacuation Hospital will be featured next month.

It will be noted that biographical sketches of the authors and key personnel of the various medical installations vary considerably in length and detail. No attempt is made to edit these in any way which is in keeping with the general policy of editing any article a little as possible. This tends to avoid stereotyped phraseology and allows more of the personality of the author to permeate the article. Biographical sketches are desired from all authors with their first article.

The covers of the Newsletter are contributed by Sp/5 Larry Rhodes and the typing by PFC Ronald Knueppel, both of whom do an outstanding job. Each cover will feature some prominent landmark, scene or building in Vietnam or in the medical chain of evacuation. The cover for this issue features Hong Kong Mountain at An Khe, home base of the 1st Cavalry Division (Airmobile).

Manuscripts are welcome at any time and should be addressed to Lt Col John N. Gordon, MC, HQ., USARV Surgeon's Office, APO US Forces 96307. Articles from stateside or other chain of evacuation hospitals are desired and will be of great value in follow up of patient care.

TABLE I

INCIDENCE OF PLAGUE BY PROVINCE, 1966

PLACE	WEEK ENDING DATES													Total
	Jan 8	Jan 15	Jan 22	Jan 29	Feb 5	Feb 12	Feb 19	Feb 26	Mar 5	Mar 12	Mar 19	Mar 26		
REGION I														
QUANG NAM														
DANANG												10		10
QUANG NGAI												18		18
QUANG TIN														
QUANG TRI														
THUA THIEN														
HUE			1	22	15	22		134	45	39	27	24		329
REGION II														
BINH DINH														
BINH THUAN									5		13			18
DARLAC	6	1		15	13	17		37	34	48	32	31		234
KHANH HOA		3	9	18	3	5		5	6		9			58
KONTUM														
LAM DONG								2			1			3
NINH THUAN					47	1		29	34	17	14	9		151
PHU BON												5		5
PHU YEN											5	29		34
PLEIKU				1								1		2
QUANG DUC														
TUYEN DUC								3	2	1	6	3		15
REGION III														
BIEN HOA														
BINH DUONG														
BINH LONG														
BINH TUY														
GIA DINH														
HAU NGHIA														
LONG AN														
LONG KHANH						3								3
PHUOC THANH														
PHUOC TUY											6	1		7
TAY NINH														
CHO QUAN HOSP														
SAIGON		1				3			2	5	12	2		25
REGION IV														
AN GIANG														
AN XUYEN														
BAC LIEU														
BA XUYEN														
CHAU DOC														
CHUONG THIEN														
DINH TUONG														
GO CONG														
KIEN GIANG														
KIEN HOA										14				14
KIEN PHONG														
KIEN TUONG														
PHONG DINH														
VINH BINH														
VINH LONG							(4)							
Total	6	5	10	56	78	51		210	128	124	125	133		926

TABLE II

POSITIVE PLAGUE CULTURES FROM JANUARY 1st TO MARCH 17th *

PLACE	JANUARY				FEBRUARY				MARCH				Total +
	Bubo	Sputum	Throat	Blood	Bubo	Sputum	Throat	Blood	Bubo	Sputum	Throat	Blood	
REGION I													
HUE									3			1	4
QUANG NAM	12	1	2	1	10	1			9	2			38
Danang													
QUANG NGAI	9			1	1				26				37
QUANG TIN	1		1										2
REGION II													
BINH DINH	1				3				1	1			6
Quinhon													
KHANH HOA	3	2			2								7
Nhatrang													
NINH THUAN		1			1	1							3
PLEIKU				2									2
PHAN RANG		2		1	1								4
REGION III													
BIEN HOA									1				1
CHOLON									1			1	2
HAU NGHIA									2				2
Total	26	6	3	5	18	2			43	3		2	108

* Data supplied by Lt. Col. J. Marshall, USAMRTV

HEADQUARTERS
8th Field Hospital
APO US Forces 96240

ANTIBIOTIC RESISTANCE IN SHIGELLA INFECTIONS

by Major David R. Hazlett, MC

Increasing numbers of gram negative bacteria have been shown to develope resistance to the broad spectrum antibiotics. However, until recently, the development of drug resistant strains of shigella posed no particular problem.

The first indication of the development of drug resistant strains of shigella was during the second World War following the extensive use of sulfanamides for treatment.

The ensuing 25 years has witnessed the increasing incidence of sulfonamide resistant strains of shigella until the effectiveness of these drugs became markedly limited.

Bacteria, which become resistant to one drug, may under proper conditions develop resistance to others. Since tetracycline is the drug of choice in the treatment of Shigellosis, it is not surprising, but somewhat disturbing, to learn that many of the cases seen at the 8th Field Hospital are resistant to this drug.

From January 1965 to December 1965, 95 cases of Shigellosis were studied at the 8th Field Hospital. The peak incidence occurred in September and October 1965. It appeared to be directly related to the increase in the number of troops in the area and the poor sanitary conditions associated with the establishment of a new housing facility known as Tent City.

TABLE #I

			SENSITIVE			RESISTANT		
	Total cases	%	Neo %	Chl %	Tet %	Neo %	Chl %	Tet %
1.	S. flex	60(63)	58(97)	55(92)	21(35)	2(3)	5(8)	39(65)
2.	S. son	32(34)	32(100)	28(88)	18(56)	0(0)	4(12)	14(44)
3.	S. dys	3(3)	3(100)	2(67)	2(67)	0(0)	1(33)	1(33)
	TOTAL	95(100)	93(98)	85(90)	41(43)	2(1)	10(11)	54(57)

TABLE I reveals that 63%, 34% and 3% of the cases were due to shigella flexneri, sonnei and dysenteriae, respectively.

Thirty-nine (39) of the sixty (60) cases of S. flexneri, fourteen (14) of the thirty-two (32) cases of S. sonnei and one (1) of the three (3) cases of S. dysenteriae were resistant to tetracycline. Five (5) of the sixty (60) cases of S. flexneri, four (4) of the thirty-two (32) cases of S. sonnei and one (1) of the three (3) cases of S. dysenteriae were resistant to chloromycetin. Only two (2) of the sixty (60) cases of S. flexneri, none (0) of the thirty-two (32) cases of S. sonnei and none (0) of the three (3) cases of S. dysenteriae were resistant to neomycin. The simultaneously demonstrated lack of sensitivity to related drugs such as tetracycline and chloromycetin is not surprising. However, the presence of resistance to neomycin was surprising and disturbing. It has been known for some time the development of neomycin resistance is associated with a significant loss of sensitivity to streptomycin (ref #I). Although the reverse does occur, it is not nearly as common. Streptomycin is used liberally in the civilian community for a variety of diseases including venereal disease, tuberculosis, and upper respiratory infections. This would at least provide the organism with adequate exposure to streptomycin and give a tentative explanation for resistance to a related drug such as neomycin, which has not been used in this area to any extent prior to this year.

In the future treatment of Shigellosis, use of a combination of antibiotics should be considered. This should at least reduce the speed with which drug resistant strains appear. The combination most likely to be effective and offer the most synergistic antibacterial activity would be neomycin and polymyxin.

MEDICAL SERVICE 8TH FIELD HOSPITAL

by Major David R. Hazlett, MC

The Medical Department at the 8th Field Hospital is divided into two parts, ward III, 25 beds for care of the more seriously ill patients and ward 33, 96 beds for care of the convalescent type patients, and is directly supervised by Major David R. Hazlett, Chief of Medical Services, who received his MD degree from the University of Pittsburg in 1958. He interned at St. Margaret's Memorial Hospital in Pittsburg, Pennsylvania from 1958 to 1959. He also served as Command Surgeon of the 1st Corps Artillery at Camp St. Barbara, Korea from 1959 to 1960 and was awarded the Army Commendation Medal for this service.

Major Hazlett completed his Internal Medicine residency at Brooke General Hospital, Fort Sam Houston, Texas in 1964 and also attended and completed the basic course in aviation medicine at Brooke Air Force Base school of Aero-Space medicine.

Prior to this tour in Vietnam, Major Hazlett was assigned to the Pulmonary Disease Service at Valley Forge General Hospital, Phoenixville, Pennsylvania.

Ref #I: Principles of Internal Medicine; Harrison, Adams, Bennett, Resnik, Thorn and Wintrabe, 4th Edition.

POST - TRAUMATIC WET LUNG SYNDROME

Capt Richard K. Ricks, M.C.
155th Med Det (Thoracic Surgical Team) APO 96307

One of the most serious and frequently overlooked problems in the surgery of trauma is that of the wet lung syndrome. The concept of wet lung is a relatively young one, having been initially described in the later stages of World War II by Burford and Burbank. Almost all patients with chest or abdominal wounds or in comatose states manifest some degree of wet lung. Untreated, these patients respond poorly to emergency resuscitation, tolerate surgery poorly, have increased postoperative pulmonary complications, and produce increased morbidity and fatalities above that of their primary wounds.

In rather simplified terms, wet lung refers to the retention and inability to evacuate tracheobronchial fluids due to direct or indirect trauma to the chest. The actual mechanisms producing these serious changes are not clearly understood. Some have postulated viscerosomatic reflexes causing bronchial spasm as a major factor. Others stress mechanical factors, as splinting of the chest wall due to pain and decreased cough reflex, with resultant pooling of blood and secretions in the tracheobronchial tree. Probably, both theories are involved in this complex series of pathologic changes. The results, however, are clearly apparent. The filling of the bronchioles and alveoli with blood and inadequately evacuated secretions leads to a decrease in ventilatory capacity and reduced oxygenation of blood. Progression to plugging of larger bronchi with lobular atelcetasis causes further reduction in oxygenation. In its most serious manifestion, anoxia produces decreased capillary permeability and pulmonary edema. The end result at this stage is all too frequently, death.

The extent of pulmonary or chest wall injury as determined by missile size and velocity is an important factor in producing wet lung. However, in many instances, wet lung may be present in a severity not expected with apparently minor chest wounds or other injuries. Several other factors, then, are also involved in the development of wet lung. Pain, either chest wall or upper abdominal, may produce splinting of the chest with decrease in respiratory movement and aeration. Similarly, gastric dilatation with thoracic or abdominal injuries produce limitation of diaphragmatic motion and diminished ventilation. These same factors serve to suppress the normal cough reflex. Especially, with multiple rib fractures or severe upper abdominal pain, the forceful chest wall motion and tightening of abdominal muscles necessary for coughing are markedly limited. Over sedation, either during initial resuscitation or post operatively produces retention of tracheobronchial secretions and a decreased cough reflex. For these reasons excessive amounte of analgesia are contra-indicated. Prolonged periods of general anesthesia using inhalants also leads to accumulation of bronchial fluids.

Although, rarely seen now, administration of excessive amounts or intravenous fluids as blood and electrolyte solutions predisposes to wet lung by overloading a patient with limited cardio-respiratory function.

Wet lung most often occurs within hours after injury but may appear up to 3-5 days post injury. If looked for, the symptoms and signs of this condition are readily apparent. Early, a poorly productive wet cough, often gurgling or rattling in nature, is present. The cough is, invariably, a weak one. The patient is usually dyspneic, with shallow and often irregular respirations. In more severe cases, orthopnea, restlessness, excitement and disorientation, indicate cerebral anoxia.

Physical findings may vary with the type and extent of primary injury. However, splinting of one or both hemithoraces is generally present. One of the earliest signs is that of decreased breath sounds over involved areas. This may be obscured, however, by hemo or pneumothorax. Characteristic bronchial type, rough, rales are usually present and generally are bilateral and basilar in orgin. Occasionally, they may be heard at some distance to the patient. Rales and wheezing similar to those of brinchial asthma may be present. However, if larger bronchioles and bronchi have become obstructed with resultant atelectasis, rales may not be heard. Sputum is frequently frothy, bloody or pinkish in color, and, in later stages, muco-purulent due to secondary infection.

The diagnosis may be easily made if the possibility of wet lung is considered. Ruscultation usually reveals the characteristic rales, or areas of decreased breath sounds. In more severe cases, the presence of severe dyspnea with irregular respirations should suggest the diagnosis. Chest X-rays frequently are of little help in the early stages of wet lung. Later, patchy, areas of infiltration and atelectasis may be present. Thus, although chest X-rays are helpful in following the course of wet lung, the initial diagnosis is best made by clinical examination.

In practice, few conditions occur where wet lung may be confused with other pathologic states. Rarely, bronchial asthma, congestive heart failure from heart disease or injury, and pulmonary edema from peripheral - vascular collapse must be ruled out.

The best management for "wet lung syndrone" is basically the prevention of its occurrence, or once present, its progression. All casualties with chest, abdominal, or head injuries should be regarded as potential candidates for development of wet lung. If not in shock, the patient should be placed in fowlers position to aid diaphragmatic motion and position frequently changed. Nasal oxygen should be given to those dyspneic or cyanotic. Active encouragement and assistance in coughing is necessary. Oversedation for relief of pain should be avoided, although small amounts of intravenous analgesia may alleviate pain and allow improved respiratory motion. Resuscitative measures, depending on the

primary wounds, should be promptly carried out. For example: nasogastric intubation for acute gastric dilatation, closed tube thoracostomy or needle aspiration for hemopneumothorax, occlusive dressing for sucking chest wounds, and chest wall stabilization for flail chest.

Once established, wet lung syndrome may rapidly progress to its more serious relethal complications, unless energetically treated. An open airway must be maintained and in severe cases, tracheostomy is indicated. Pain relief, where possible, should be carried out. Adhesive strapping of the chest wall and excessive sedation is contra-indicated. Where chest wall pain is a serious factor, intercostal nerve blocks may be helpful. Endotracheal suction, performed a adequately and frequently, is the single most successful treatment for this condition. It results in removal of excessive fluid in the lower airway and helps loosen deeper secretions. Endotracheal suction also promotes an efficient and effective and effective cough. In a limited number of cases with aspiration of gastric contents or with lobar or total atelectasis, bronchoscopy is a mandatory treatment adjunct. Intermittent positive pressure breathing where available, or if not, blow bottle exercises, are helpful in loosening secretions and increasing ventilatory capacity. If available, the use of inhalant bronchodilators as dilute isuprel solution, or mucolytic agents as acetylcystine will further aid removal of excessive broncheal secretions.

The patient with wet lung frequently responds rapidly and dramatically, to adequate treatment. Respirations, color, and general well being are markedly improved and management of primary injuries is facilitated. With early recognition and prompt treatment of this serious and common clinical entity, patient morbidity and fatality can be greatly reduced.

TIPS FROM THE FIELD - NO 3

by Lt Colonel Thomas W. Sheehy
Medical Consultant

An amebic abscess of the liver is a metastatic lesion that arises when E. histolytica penetrate a small vein in the colonic mucosa and are carried to the liver. The arrival of amebae in the liver evokes a tissue reaction in which many invading organisms are destroyed, but the survivors multiply rapidly and become the focal point for a liver abscess. Within one or several of these fold the surviving amebae attack the healthy liver tissue with their cytolytic enzymes and cause central necrosis of the invaded liver lobule. Soon pus cells invade the area in an effort to handle the tissue debris caused by the amebae and the amebae and these cells give the abscess contents its yellow color. Later, the color may turn green as bile spills into the abscess. It becomes "anchovy" or "chocolate" colored when capillaries in the trabeculae spanning a necrotic area break and blood mixes with the pus and debris.

Roach reported a yellow colored aspirant in 90 percent of his series of amebic abscesses and Lamont etal found typical anchovy paste in only 43 of 106 patients with hepatic abscess. Generally, the aspirant taken from an uncomplicated liver abscess is sterile but an abscess can become secondarily infected during aspiration procedures or be bacterial invasion via the portal system. Aspiration releases the tension about the abscess and this results in a breakdown of the avascular zone of necrotic tissue surrounding it. As a result, portal blood, containing bacteria, can gain access to the cavity. For many years, it was believed that the pus of an amebic abscess had a bactericidal effect. In recent studies, it was shown that the pus did have some bactericidal effect against Shigella sonnei, Staph pyogenes and certain pseudomonas organisms but it had little effect against E. Coli and other enteric bacteria.

Abscess Location: Elsberg believes the more frequent occurrence of amebic abscess in the right liver lobe is due to the greater width and the straighter course of the right branch of the portal vein in contrast to that of the left branch. Talbot attributes the relative infrequency of left lobe liver abscesses to the smaller volume of the left lobe. Serge attributes the greater incidence of right lobe abscesses to a laminar blood flow; blood from the superior mesenteric vein which supplies the proximal colon is carried to the right lobe while blood from the inferior mesenteric vein is carried to the left lobe. Alkan etal believes the more vigorous treatment afforded acute dysenteric conditions of the rectosigmoid colon leads to reduced involvement of the left lobe whereas the ineffective or delayed treatment of chronic involvement of the cecum is responsible for the greater incidence of right lobe abscesses.

It is claimed that the left lobe liver abscesses occur in 6 to 33 percent of all liver abscesses. Alkan etal found 5 left lobe abscesses in a total of 18 cases, however, Kean found only 4 left lobe abscesses in a series of 90 cases. The upper part of the liver is the most common site of abscess formation.

Liver abscess may be single or multiple. If multiple, there may be two, three or many abscesses, but these abscesses are generally smaller in size than the single type. When one lobe of the liver is the seat of an enormously large abscess, compensatory hypertrophy of the normal lobe of the liver usually occurs.

Symptoms: Fever is an important symptom in liver abscess (Fig 1) and is a valuable aid to the clinician. In early amebic hepatitis, remittent fever is common and it may readily simulate the fever observed in malaria. In contrast, fever is relatively rare in uncomplicated intestinal amebiasis and usually less than one in ten cases of this type will have it. However, both entities may begin as fevers of undetermined origin. Although fever is present in 90 percent of patients with liver abscess, nothing is constant in this illness and fever may be absent in the presence of an abscess.

Early in the development of a liver abscess fever appears late in the afternoon, or begins as an evening rise to 103 or 104°F and a subsequent fall to normal in the morning. Profuse sweats accompany the fever and as the fever subsides, the patient often becomes cold and clammy.

Pain in the right hypochondruim or epigastric area is also a prominent symptom. Usually it is accompanied by a sense of fullness or weight in the epigastrium or over the liver area. Stabbing pains occur over the liver and these may be accentuated by deep inspiration, by coughing or by pressure exerted in the intercostal spaces bounding the liver or over localized area of the liver. Sometimes swallowing is painful in individuals with a left lobe abscess. Referred shoulder pain is another common occurrence in liver abscess, and it may develop even before onset of a fever. The sudden appearance of right shoulder pain in a patient with a known abscess should arouse suspicion of a diaphragmatis perforation. Referred left shoulder pain occurs frequently in a left lobe abscess. In patients with liver abscess, respiration becomes rapid and shallow as the liver enlarges due to abscess growth. Irritation of the diapragm often leads to a painful cough or the right rectus muscle may become rigid as the liver becomes tender. Occasionally, the heart is displaced laterally or upwards by pressure from a large abscess. Jaundice may develop due to pressure on the common bile duct or to parenchymal hepatic damage.

Diagnosis: Manson's golden rule in tropical medicine is a bit of common sense: "Think of hepatic abscess in all cases of progressive deterioration of health; suspect it in all obscure abdominal cases associated with an evening rise of temperature, particularly if there be an upward enlargement of or pain in the liver, leucocytosis and a history of dysentery - not necessarily recent". Here, in toto, is the triad of amebic abscess - fever, liver pain and/or hepatomegaly and leucocytosis. X-ray examination may confirm upward enlargement of the liver, tenting of the diaphragm, blurring of the diaphragm, a pneumonitis or show a pleural effusion. These signs usually appear when the abscess is in the dome of the liver; they are absent when it is located in the center of the liver. With a left lobe liver abscess, the stomach is sometimes displaced to the left or to the left and backward giving the stomach a sickle-like appearance on baruim sulfate examination.

Leucocytosis is a prominent feature, the white cell counts ranging from 15,000 and 35,000 per cu mm. Liver function tests are often normal but in most instances the alkaline phosphotase, the SGOP, and the SGPT are elevated. Anemia develops rapidly in some patients but its etiology is not clear. Aspiration of pus from the abscess does not make the diagnosis a certainty, for ascaris, meloidosis or bacterial infections must be ruled out as causes of this abscess. Injection of Lipiodal after partial aspiration of pus can be used to outline the abscess and determine the volume of its content. Air infusion also has been used to

outline the abscess cavity but this is more dangerous than use of lipiodal for death has been caused by air entering a vessel and giving rise to air embolism. Although it is difficult to find amebae in abscess fluid, this is more easily accomplished if the last 50 to 100 ml of aspirate is collected in a tube containing varidase. This enzymes destroys the debris and frees the amebae. This fluid should be incubated at 37°C for 30 to 60 minutes and then certifuged. After the supernatant is removed, amebae are often found in the remaining deposit. This deposit should be checked microscopically for their presence. Usually it will contain amebae.

Treatment: Although amebic abscess is our topic, it may not be remiss at this point to say a few words about the treatment of amebic colitis. Acute amebic colitis should be attacked in three ways for the amebae must be cleared from the bowel lumen, the bowel wall and the deeper tissues. No single drug can do this. A wide-spectrum antibiotic (tetracycline) should be given to destroy symbiotic bacteria within the lumen. These drugs have little direct action on the amebae; they are given primarily to destroy enteric bacteria. Amebae can grow in a test tube containing heavy concentrations of tetracycline if a resistant strain of bacteria is present. A systemic amebicide (chloroquine) should be given to attack the amebae that have invaded beyond the bowel wall and finally a suitable amebicide should be given to catch the lumen dwellers that survive destruction of the symbiont bacterial flora.

The following triple approach is useful in treating acute colitis:

a. Tetracycline: 250 mg, three times a day for 10 days - to destroy symbiont bacteria.

b. Diodoquin: one (650 mg) tablet three times a day for 15 days to destroy luminal amebae.

c. Chloroquine: 0.5 gram twice a day for two days; then 0.5 gram daily for 14 days - to destroy tissue invaders.

Liver Abscess: When ameba leave the bowel and invade the liver, tissue amebicides must be used. Emetine is the drug of choice in liver abscess; chloroquine is valuable but used alone, it yields a higher relapse rate. Elsdon-Dew recommends that both drugs be used simultaneously in treatment of liver abscess.

Aspiration of the abscess is an essential feature of treatment. Emetine should be given for 3 - 4 days prior to any attempted aspiration unless rupture is imminent. In such cases, emetine should be started promptly and aspiration done immediately.

If aspiration of the abscess is done, every effort should be made to evacuate all the pus. A full size aspiration needle should always

be used for this purpose, otherwise the viscid pus will not flow well. Localizing signs such as a tender spot. fixed pain, pleuritic friction rub, etc., should be given consideration as areas adjacent ot the liver abscess. If these localizing signs are absent, remember that the majority of liver abscesses are located in the upper and back part of the right lobe.

Open operation should be considered:

a. If repeated aspiration fails to yield pus and there are strong indications it is present.

b. In left lobe abscesses that point into the epigastrium.

c. When emetine and/or hydrochloroquine therapy have been unsuccessful in controlling the illness.

d. When the abscess has become secondarily infected and has not yielded to treatment by aspiration.

When an abscess ruptures into the peritoneum, or the pleura or pericardium, the particular serous cavity involved must be opened. Following rupture into the abdomen most patients become acutely ill and the abdomen in the peritoneal cavity and in the abscess cavity should be injected into the abscess cavity. Drains in the abscess cavity should be kept in place for 72 to 96 hours. Intravenous therapy and gastric suction should be continued until the bowel sounds become audible. Antibiotic and amebicidal therapy should be initiated before surgery or if this is not possible, immediately after operation.

Amebicidal therapy for liver abscess:

a. Emetine hydrochloroquine: 65 mg by deep subcutaneous injection daily for 7 to 10 days - (monitor daily with EGG's).

b. Tetracycline 1 - 2 grams daily in divided doses for 7 days.

c. As soon as above course of therapy is finished and the patient's condition permits, start diodoquin (650 mg three times daily for 14 days) in conjunction with chloroquine (0.5 gram daily for 14 days).

HISTORY OF THE 85TH EVACUATION HOSPITAL

by Maj. John H. Thompson, MSC

The 85th Evacuation Hospital was constituted and assigned to Ninth Corps area in the Regular Army on 29 December 1928. The unit was activated 20 March 1944 at Camp Maxey, Texas.

After completing Basic and Advanced Unit Training, the hospital moved to Camp Swift, Texas in November 1944, and then as part of a larger shipment, moved to Camp Kilmer, New Jersey. Here it staged for overseas movement through the New York Port of Embarkation. The unit departed for France during January 1945 and arrived on 22 January 1945. The hospital was assigned to the Fifteenth Army, and gave medical support to allied forces through France. On 3 April 1945, the unit entered Germany, where it operated for the duration of the war. The hospital was deactivated on 4 February 1946 at Ellwagen, Germany.

The 85th Evacuation Hospital was again activated on 17 December 1954 at Fort George G. Meade, Maryland. The hospital trained and participated in numerous large scale exercises and in February 1957 was moved to Fort Polk, Lousiana. 4 May 1959 saw the unit relocated to Fort Hood, Texas, and on 1 July 1960 was assigned to STRAC. The unit was again moved 25 September 1962 to Camp Chaffee, Arkansas and 13 January 1965 relocated at Fort Bliss, Texas.

The 85th Evacuation Hospital (SMBL) arrived in Vietnam on 31 August 1965. On 1 September 1965 it debarked and moved by organic transportation to a location approximately 7 miles west of the city of Qui Nhon. Here is became operational with TO&E equipment, first receiving patients on 5 September 1965 and officially opening on 10 September 1965. On 10 October 1965 the hospital moved to its present location in Qui Nhon, remaining operational during the move. Construction efforts since November 1965 have provided buildings for all patient care and support activities. A total of 6,891 patients were admitted during the period 10 September 1965 to 31 March 1966; 6,389 patients were dispositioned during the same period and 2,541 surgical procedures were performed.

The 85th Evacuation Hospital is supported by the 528th Medical Laboratory, the 48th Medical Detachment (KA), and the 463rd Medical Detachment (KH).

The hospital received battle credit for Central Europe during World War II. While assigned to STRAC the hospital received two STRAC Superior Unit Awards.

HOSPITAL COMMANDING OFFICER

Col Harold C. Murphree, was born in Rhodesia of American missionary parents. He had pre medical education in Rhodesia, and in Kentucky and Alabama. He received his MD from Cornell in 1946 following which he interned at Bellevue Hospital. His neurosurgery training was completed at Walter Reed, and he has served in Neurosurgical positions at the 121st Evac Hosp & Tripler General Hospital. Before his present assignment he was the Chief of Neurosurgery at Letterman. He is a Diplomate of the American Board of Neurological Surgery, a member of the Harvey Cushing Society, and a Fellow of the American College of Surgeons. His family resides at Fairfax, California.

HOSPITAL CHIEF NURSE

Lt Col Mary E. Donovan was born in New Bedford, Mass. She is a graduate of St. Lukes Hospital in New Bedford and received her B.S. in nursing from New York University. She has had additional post-graduate study at Kansas State University & Ft Sam Houston. She is a member of the American Nurses Association. During the early period of World War II she served in Hawaii. Subsequent assignments took her to Europe and Japan. Prior to being assigned to the 85th Evacuation Hospital she was Chief of Nursing Service at Irwin Army Hospital, Fort Riley, Kansas.

HOSPITAL EXECUTIVE OFFICER

Major John H. Thompson was graduated from the University of Missouri in 1950 with a degree in Business Administration. He was drafted into the Army the same year and was commissioned in the Medical Service Corps following OCS in 1952. Major Thompson has served overseas in Germany and Korea, where he was supply officer at the 121st Evacuation Hospital. He has also served at Fitzsimons General Hospital and Madigan Army Hospital. He served his residency in Hospital Administration at Walson Army Hospital, Fort Dix, New Jersey. He joined the 85th Evacuation Hospital at Fort Bliss, Texas on 19 July 1965.

Major Thompson is a member of the American Hospital Association and Associate Member of the American College of Hospital Administrators. His family resides at Portsmouth, Rhode Island.

CHIEF OF PROFESSIONAL SERVICE

Major William E. Burkhalter graduated from the University of Kansas with a BA degree in Zoology in 1949. After a year of graduate study, he entered the Kansas Medical School graduating in 1954.

His internship was served at William Beaumont Army Hospital in El Paso, Texas. Following this he was assigned to the orthopedic service of Tokyo Army Hospital. After two years in Japan he returned to the University of Colorado. He took a four year Army sponsored orthopedic rendering under Dr. James Miles at this institution.

At the completion of his residency in 196[illegible], he was assigned to the 21st Evacuation Hospital in Augsburg. After three years in Bavaria, he again assumed the pupils position. This time Major Burkhalter became a resident in Hand Surgery at Walter Reed General Hospital. After a year of study at Walter Reed and Baltimore with Dr. Raymond Curtis, Major Burkhalter joined the 85th Evacuation Hospital. Major Burkhalter is certified by the American Board of orthopedic surgery and is a member of the American Academy of Orthopedic Surgery and is a member of the American Academy of Orthopedic Surgeons.

The remainder of the Burkhalter family lives in Kalua, Hawaii. Mrs Burkhalter, Marna to all who know her, is looking forward to the next assignment: Tripler General Hospital. Suzane age 9, Lisa age 7 and Bill age 6 are already truning into natives of "the islands."

CHIEF OF SURGERY SERVICE

Major Tevor D. Novack was graduated from Tufts College in 1950 with BS degree in Biology. He attended Harvard Medical School, receiving his M.D. degree in 1954. He had his internship and first year of residency in Surgery at the Beth Israel Hospital in Boston under Dr. Jacob Fine, and in July 1956 he entered active duty in the Army, attending the 22 week company officers course at Ft. Sam Houston, Texas. He then proceeded to residency in Surgery at Letterman General Hospital, completing the program in December 1959. On assignment to Korea followed, with the first 5 months spent at the 44th Surgical Hospital as Chief of Surgery, and then the remainder of the tour as Chief of General Surgery at the 121st Evacuation Hospital in Ascom City. From there he went to Germany and after 3 months at US Army Hospital, Berlin, he went to US Army Hospital, Nuremberg for the rest of the 3 year tour, returning to CONUS in 1964, where he served as Chief of General Surgery at US Army Hospital, Ft. Leonardwood, Missouri until his assignment to the 85th Evacuation Hospital in 1965. He serves as Chief of the Surgical Service.

Dr. Novack was certified by the American Board of Surgery in 1961 and is a Fellow of the American College of Surgeons. His wife, Karin, whom he met and amrried in Germany, resides with their children, Claudia, 28 months, and Mark, 10 months, at Ft. Leonardwood, Missouri.

CHIEF MEDICAL SERVICE

Major Richard C. Reba graduated from the University of Maryland School of Medicine in 1957. He entered the Army after graduation and received his internship at Tripler Army Hospital. He completed a residency in Internal Medicine at University Hospital, Baltimore, Maryland in 1961 and a Fellowship in Nuclear Medicine at Johns Hopkins Hospital in 1962.

After his residency training, Major Reba served as Chief Department of Isotope Metabolism at the Walter Reed Army Institute of Research.

(Cont'd p. 30)

CURRENT APPLICATION OF THE TOBRUK SPLINT

by Major William Burkhalter, MC

Since September 1965, a modified Tobruk Splint has been used at the 85th Evac Hospital. It has been employed at some stage during the treatment of every fracture involving the distal half of the femur. Some of the more important aspects of its development and proper utilization are discussed below.

The British in World War II at Tobruk in North Africa were faced with a shortage of water and plaster of Paris. The need to conserve these items yet maintain the ability to transport femoral fracture patients led to the development of the very useful Tobruk Splint. The United States Surgeons never accepted the splint despite their admission that it could be more easily and quickly applied than any form of hip spica.

The original Tobruk Splint utilized skin traction which was provided by adhesive tape running down both sides of the leg and thigh. A long leg cast with the knee flexed about 20 degrees was applied over this adhesive tape which emerged from the cast at the ankle. The leg was then placed in a muslin-lined half ring splint for support, the adhesive was fixed to the end of the splint and traction exerted with a windlass principle on the adhesive strips. A foot support was added to the half ring splint, and the plaster was used to hold the long leg cast and half ring splint together.

The present modification being used by the 85th Evac Hospital utilizes skeletal traction achieved by a Steinman Pin or a Kirschner Wire through the tibial tubercle attached to elastic traction. The splint is applied as follows: Prior to the operative procedure of debridement of the fracture, an Army Half Ring Splint is fitted with a large foot piece, 3 muslin slings and padding of the half ring. The large foot piece is fixed to the end of the splint with plaster to prevent proximal movement. The muslin slings are adjusted so that 20-30 degrees of knee flexion is possible. This is accomplished by making the sling fitting behind the knee very tight and those behind the thigh and calf very loose. The slings are fitted with large abdominal pads.

At the conclusion of the operation dressings are applied and the leg is placed in the splint. ABDs and sheet wadding are placed circumferentially around the leg and splint including the foot. Plaster of Paris is applied around this and is molded about the bars of the half ring splint. The foot is also incorporated at a neutral position. The half ring is held in the "fixed" or forward position by a strap of muslin making a loop around the ring and being incorporated into the plaster cast about the thigh. The previously placed Steinman Pin or Kirschner Wire is

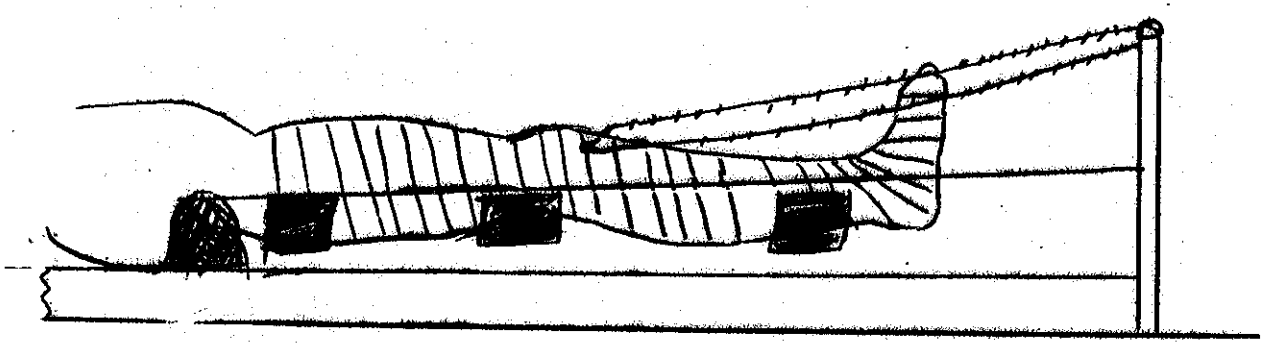
then attached to the appropriate bow. Rubber tubing is then used to connect the bow to the large foot piece and the amount of traction needed is adjusted.

The principal advantages of this splint is that traction can be maintained constantly throughout the transportation of the patient and the presence of abdominal wounds with colostomy or cystotomy present none of the problems associated with a hip spica. In addition the splint can be used as a temporary measure prior to delayed wound closure and application of a hip spica cast.

Our patients have been able to turn from side to side without help and to sit completely erect in the apparatus. Several of them who have travelled to the United States with a Tobruk Splint applied have written to us that they were comfortable throughout the trip and had no trouble with pressure or listening in the area of the ischium.

In summary the modified Tobruk Splint is an excellent apparatus when applied to fractures of the lower half of the femur or knee joint.

D I A G R A M



Lat. view

Top view

A TECHNIQUE FOR PREPARING AND STAINING MALARIA SMEARS

by Capt. William K. Drake, MC

INTRODUCTION:

The following is a detailed description of a simple, rapid method for the preparation of malaria slides of uniform high quality using a buffered Wright's stain. It has been developed in a field setting and requires only readily available equipment and materials. Pitfalls and corrective measures are also described.

Primary attention should be directed toward the thick film which increases approximately 50 fold the number of cells which can be examined per oil immersion field. In routine screening only the thick film is used and for the most part species differentiation can be made from it. The thin smear is used mainly to distinguish finer differences of species, ie. red cell enlargement and pallor, Schuffner's dots, multiple infection of the red blood cell, applique forms and ban trophozoites. The thin film is also used to accurately determine the degree of parasitemia.

METHOD OF MAKING THE BLOOD FILM:

The thick film is prepared by placing one small drop of blood near one end of an alcohol cleaned slide. It is essential that the slide be spotlessly clean as dust particles mimic the malaria parasite and if considerable dirt is present the extraneous particles will completely preclude parasite identification. The drop is then spread to a dime sized blot by moving the corner of a glass slide through the drop in a circular outward motion. The spreading procedure takes approximately 5 seconds and also serves to defibrinate the thick film. Inadequate defibrination results in long traversing fibrin strands in the final product. The thickness of the thick film is also critical. When the fresh blood drop has been spread out to the proper thickness it has a reddish-brown hue. If too thick it appears dark red and opaque; if too thin, a translucent pale brown. Later, in the final product, a film which is too thin has of course failed to concentrate parasites; one which is too thick microscopically appears dark blue and parasites are obscured or if the parasites are still discernable, the essential differential staining of the nucleus and cytoplasm is lost.

The thin film is made on the other end of the same glass slide in the manner of a standard differential smear. It should be well separated from the thick preparation and have a good feather edge.

The freshly prepared slide must be kept flat until dry otherwise the thick film will run to one edge and be lost. The unstained slides must also be covered to protect them from dust and flies.

LYSING OF THE THICK FILM:

The lysing agent is 2% acetic acid. The slides are placed on end in small specimen bottles filled with 2% acetic acid to a level sufficient to cover the thick film but not reach the thin film. The thick film must be completely dry prior to lysis or it will flake off during this phase. The time required for lysing is approximately 2-3 minutes and can be recognized as complete when the film becomes devoid of pigment and appears as a thin plaque of slightly resilient clear grey - white protein. Lysis can be accelerated by gentle aggitation but is associated with the risk of dislodging the plaque. Extended lysis with the 2% acetic acid solution will cause a gradual disintegration of the plaque but will not affect morphology or staining characteristics of either parasites or white blood cells.

The advantages of lysing with acetic acid are several. Lysing time is shortened by 5-8 minutes and the end point is less critical. With distilled water, tap water or Wright's buffer as the lysing agent there is a progressive alteration of both parasites and white blood cells with lysis time. Over-lysis with these agents causes the white blood cells to expand to 2-3 times normal size. These expanded nuclei appear a granular pale blue instead of the expected condensed dark purple. The parasites are also severely altered to the point of non-recognition. Their blue cytoplasm is expanded, pale and feathery and poorly defined. The usual solid pink condensed nuclear chromatin also becomes pale expanded and granular.

Following lysis the thick film is rinsed by vertically dipping the thick end of the slide several times in clean tap water. Care is again taken not to splash the water on the thin film. This rinse water must be changed after every 30-35 rinses to prevent the deposition of a very fine red staining particulate matter on the surface of the thick film plaque. Residual acid must be completely rinsed out or the subsequent staining phase will be inhibited and result in a grossly pink plaque which microscopically shows pink staining of white blood cell nuclei. Parasites, under these conditions, remain unstained and not visible.

The slide is then dried at room temperature. This may be hastened by mild heating either over a lamp or in an oven. Thorough drying is essential to prevent the formation of crystals in the unlysed red blood cells of the thin smear during the subsequent staining procedure.

PREPARATION OF THE BUFFERED WRIGHT'S STAIN:

Buffered Wright's stain has the advantages of reproducibility, speed, stability and sharp, dark, differential staining of nucleus and cytoplasm of the parasites.

To prepare the stain add 3 gm. of prepared Wright's stain (FSN 6505-149-6001), 1 gm. Giemsa buffer salts (FSN 6505-153-9968), 30 ml. glycerine, and 970 ml. of methyl alcohol to an opaque, light protecting stock bottle.

Cap and shake vigorously. This stock solution is stored in the refrigerator to prevent bacteria and fungus contamination. It is necessary to grind the Wright's stain if the stain is to be used during the first few days after preparation. Buffer salts do not pass completely into solution, therefore prior to using, the stock solution must be shaken for one minute to evenly disperse undissolved buffer salts. Note that Giemsa buffer salts provide a pH of approximately 6.8 and can be made up independently from phosphate salts if necessary.

STAINING PROCEDURE:

Two covered biological staining dishes with matching alide racks for 20 slides(FSN 6640-422-3810) are used. The advantage of the staining dish over the flat rack is that extraneous particulate matter tends to settle to the bottom rather than cling to the surface of the slide. Evaporation of the alcohol is for the most part eliminated and speed and ease of handling multiple specimens is provided. Dishes are labeled #1 (staining and fixing phase), and #2 (buffering phase). Add unfiltered Wright's stain to #1 to a level sufficient to cover the slides in the rack. Fill dish #2 to the same level with 2/3 distilled water and 1/3 buffered Wright's stain. Replenish #1 by adding well shaken stock stain. Replenish #2 by adding distilled water only, as sufficient stain is carried over from #1 to #2 with each run. Change the solution once a week. Keep the dishes covered at all times and refrigerated after each daily run to reduce evaporation and contamination.

The time for staining and buffering is determined through the use of a control slide - a known positive with a high rate of infection. The control is passed through the stain solutions using an arbitrary time of one minute for each step. Staining time varies from ½ to 2 minutes in each solution depending upon the environmental temperature. The standard procedure is to load the lysed and dried slides into the rack, immerse the rack first in the staining dish #1 for the pre-determined time; remove and place in the buffering dish #2 in a similar manner. When buffering is complete, wash the stained slide in a pan of clean tap water and then rewash the slides with a squirt bottle to insure removal of any surface particulate matter.

MICROSCOPIC APPEARANCE OF THE STAINED SLIDE:

Examination of the optimum stained and processed thick film with the oil immersion lens should reveal the following four elements:

1. The background is a light to medium blue and has a fluffy texture. No extraneous material is present.

2. Platlets are present singly or in clumps; each appears as a cluster of tiny azure rodlets set in a pale grey-blue cytoplasm. The small pink rodlets contrast with the chromatin dot of the common ring

trophozoite which is solid or condensed and a darker red color. The smallest chromatin dot of a malaria ring is many times larger than the individual small granule or rodlet or a platlet.

3. White blood cells despite lysis maintain the nuclear and cytoplasmic granule staining qualities of the thin smear. Both basophilic (blue) and acidophilic (red) elements stain deeply and distinctly.

4. Malaria parasites present in the common ring form show a sharp contrast between nucleus and cytoplasm. It is a basic requirement of malaria parasite identification that both constituents, i.e. nucleus and cytoplasm be clearly identifiable as such. The nucleus is dark pink-red to crimson, round or oval in shape always slightly irregular and not sharply marginated. The cytoplasm of many organisms however appears amorphous and fails to take a ring form. Nevertheless, in all organisms cytoplasm is easily recognizable as such by its color, a moderate to dark blue which contrasts sharply with the pale blue background. With larger ameboid trophozoites, schizonts and gametocytes, nuclear material will take the red hues and the cytoplasm will be definitely blue and contrast with the background. When present, pigment and its morphology can also be appreciated.

The thin film should compare to a well stained blood smear made for routine differential counts. The parasites are vividly apparent in red cells, with well defined differential staining of nuclear chromatin and cytoplasm as described for the thick film. Special advantages of the thin film were previously discussed and important differential features such as red blood cell enlargement and pallor, parasite morphology and location should be readily apparent. It is of special note, that within the optimum staining time for the thick film, Schuffner's dots of P. vivax will be only faintly visible or unstained. In order to bring out Schuffner's dots both staining and buffering time must be increased.

CONCLUSION:

It is hoped that this detailed description of the preparation and staining of malaria slides with emphasis on the fine points of technique does not tend to misrepresent the speed and simplicity of the method. The main problem of malaria diagnosis in the laboratory is not lack of ability to recognize and identify parasites but that of preparing a slide fit to be placed on the microscope stage. It is believed that this technique provides the constancy and safeguards essential to this end.

Acknowledgments:

Floyd R. Strew, PFC RA 13845630, by whose hand this technique was developed.

Paul P. Murphy, PFC US 51479816, and Robert T. Grossman PFC US 55807804, who assisted in drafting this paper.

THE NURSING CARE OF PATIENTS WITH MALARIA

1st Lt Sharon L. Morton, of Brenerton, Washington. 1964 graduate of University of Washington

2nd Lt Lucille M. Kocher of Maperville, Illinois. 1964 graduate of St. Mary Mercy School of Nursing, Gary, Indiana

For most of the nurses at the 85th Evacuation Hospital malaria was a disease we had encountered only in our textbooks. Since our arrival in Vietnam last September we all have received much actual experience in caring for patients with malaria due to the large number of military personnel who have contracted the disease.

Our patients arrive at the hospital anytime of the day or night but most of our patients arrive around 1700 hours daily by way of the "An Khe Express". After being seen in the receiving department patients are assigned to the care of one of the medical doctors. A physical examination and history are completed by the doctor and laboratory tests are begun to confirm the diagnosis.

Symptoms include sudden high temperatures with rapid drop accompanied by chills, fatigue, sensitivity to light, headache, and loss of appetite. Patients usually have a history of having been exposed two weeks before developing any symptoms.

Patients receive physical and emotional supportive nursing care. They are bathed or may shower if they are able. They are given cool water to drink to reduce their fever and medication as needed for pain. Patients are sponged if they have a temperature of 103 degrees or if they are uncomfortable because of any temperature elevation.

During this time patients often express their worries and fears. The frequent visits of the hospital Chaplain are invaluable at this time.

Once a positive diagnosis is made the doctor initiates therapy. Much research is being done to determine the most effective treatment for malaria. At the present time our treatment is quinine and daraprim or quinine and chloroquin for a period of fourteen days.

When patients receive their first dose of quinine their beds are labeled with a "quinine therapy" sign; they are instructed to remain in bed the first two days and eat their meals on the ward for four days. If out of bed for any reason patients must be accompanied by a corpsman or another patient not receiving quinine. This is because patients receiving quinine therapy tend to get weak, dizzy and faint. Patients are weighed daily to see if they have gained weight due to

fluid retention from kidney involvement. Patients are observed closely the first four days of treatment by nursing service personnel and the doctor is notified of any untoward symptoms.

When patients feel better and are allowed to be out of bed their morale improves despite the need for continued treatment. Patients often become bored and restless but recreational activities are provided by the American Red Cross, USO shows, and Special Services movies.

Upon completion of treatment patients are kept for a period of two to four weeks for observation. During this time patients are encouraged to assist on the wards and several are assigned to the Security Platoon which helps to guard the hospital area.

If at any time patients present symptoms of recurrent malaria the treatment is reapeated. Patients are followed closely throughout their hospital stay with many laboratory tests.

In caring for patients with malaria, nurses have found they must meet the physical and emotional challenges of total patient care. It is a most satisfying experience to see our patients regain their former vim and vigor.

SMALL WOUNDS OF THE LEG

by Major Tevor D. Novack, MC

Although soft tissue wounds of the extremities are usually managed by general surgeons during the influx of a large number of combat casualties, general surgeons as a group have little initial interest in such minor wounds, preferring to deal with the more dramatic ones of the abdomen, chest, neck and arteries, and yet, because these soft tissue wounds of the extremities make up such a large segment of our practice in this war, it behooves us all to give considerable attention to them because of their economic and military significance.

For the purposes of this discussion, small wounds are defined as those which have no bone, artery or nerve involvement, and such wounds of the leg have comprised about 10-15% of all wounds that we see. Their importance here is that these patients should all return to duty within three weeks. Unfortunately it has not been the invariable rule. Far too many have had prolonged morbidity, and many have had to be evacuated because their hospital courses have indicated that their combat capability would be impaired for as much as six to eight weeks. Such problems are almost never seen with wounds of the arm.

The specific problems that arise in these small wounds of the leg are seldom connected with wound healing. Of far more significance are such easily avoided nuisances as weak quadriceps, inability to extend the knee joint, weak pretibial muscles, and shortening of the heel cord. Once established, correction of these difficulties requires much time and effort of the staff, and considerable discomfort for the patient.

Causes of these wounds are low velocity bullets (high velocities usually cause more damage and take the sounds out of this category), mortar, grenade or mine fragments, and of course, the ubiquitous punji stick. This last cause, resulting so often in filling of our wards, requires some special discussion, and several facts should be noted. The punji stick, made of sharpened, fire hardened bamboo is intentionally contaminated by the enemy. With inadequate treatment, severe infection may be expected. Pieces of the stick frequently break off when deep in the muscle or jammed through the interosseous membrane, and finally, the true depth of the wound is seldom obvious on initial examination, although the history may be helpful.

Management of the small soft tissue wounds of the leg has some special features in the combat situation that we are seeing in this theater. Ordinarily they arrive with a group of patients of whom they are the least severely wounded. It means that they must often wait for several hours for their surgery in addition to the hours which may have been required to recover them from the field. We occasionally have seen established wound cellulitis in our patients at the time of their admission. It is our feeling that because of the delay of surgery, antibiotic treatment should be instituted as soon as possible, and we customarily start a liter of fluid containing 10,000,000 units of aqueous penicillin and two grams of chloramphenicol if there is no contraindication by history. We do not hesitate to double the initial dose of penicillin if an established wound cellulitis is present. Preparation and cleansing of the extremity are carried out during this wait, and if the patient has not dozed off from weariness, he gets an explanation of what his treatment will be, including a description of the post-operative exercises he will be expected to perform. The initial surgery follows the established techniques of debridement. Recovery of metallic fragments is not essential, but punji stick wounds must be searched with great care. Any fragment which remains, being both organic matter and badly contaminated will, it has been our sad experience, produce a late abscess, sometimes even after the patient has been returned to duty, when the fragment will probably be removed by another surgeon who will have lots to say to his friends about the original operator. The key to good debridement of any of these wounds is adequate incission in the long axis of the limb, including sufficient fasciotomy so that the depths of the wound may be explored without any necrotizing blunt dissection with the retractor.

Intravenous penicillin and chloramphenicol are usually continued for 24 hours after surgery in the small wounds, and the drugs are then

continued intra-muscularly and orally respectively, until 2 or 3 days after the wound has been closed.

Closure in the small wounds of the leg is usually done in 3 to 5 days for missle wounds, and 5 or 6 days for the puji stick wounds, where more prolonged drainage had seemed, in our experience, to reduce post closure infection. We feel that it is important not to close the deep fascia in these small fasciotomies, and close only the skin. Closure of the fascia has been associated in our experience with rather severe pain and limitation of motion.

A most important, and too often neglected aspect of treatment of leg wounds is exercise. The patient is taught the exercises by his surgeon, and then is exhorted by the nursing service several times a day. He is directed to perform these exercises for 5 minutes every half hour during the day. Rounds on the following morning quickly prove who has been shirking.

For the stubborn quadriceps which responds poorly to the isometric setting exercises, graded weight lifting is prescribed, utilizing sand in stockingette. This sandbag arragement is constructed in such a way that it can be draped over the patients foot, and the sizes are roughly estimated as 8, 15, and 15 pounds.

Where dorsiflexion problems are anticipated, a bivalve leg cast, applied with the knee flexed and the foot in maximum passive dorsiflexion, is worn at night and removed during the day for exercises and for walking which is started as soon as possible. Wearing of the combat boots and running around the compound is the final step in rehabilitation, and deep knee bends on the wounded leg alone makes a good final test prior to discharge to duty which is by now eagerly sought by almost all patients.

MENTAL MECHANISMS

Mental mechanisms are devices used by everyone to protect their self esteem and sense of well being. Theoretically at least these are automatic processes which take place at an unconscious level, but in reality a conscious element is often present, and one popularly accepted mechanism actually is called conscious control. A discussion of all of the mental mechanisms would be too extensive for a single brief article such as is desirable in this periodical. Some of the more useful one's however will be discussed in this and future issues. The mechanism of regression will be discussed in this issue.

Regression is a mental mechanism in which quite unawaredly one adopts more primitive ways of handling anxiety. Upon the arrival of a new addition to his family, a child who has given up bedwetting or thumbsucking may resume these activities, In his earlier life these habits resulted in attention-getting and reassurance. When sybling rivalry (and the threat of loss of love with resulting loss of self esteem) enters the picture, anxiety is increased, and these regressive traits are again used in an effort to cope with it. In some children the threat of a new sybling is so great that they resort to baby talk and even resumption of bottle feeding.

In adults too, regression takes place when anxiety increases. Perhaps the ultimate in regression is seen in schizophrenics who suffer intolerable anxiety and who may even go so far as to assume a foetal position and require tube feeding. Other extreme examples of regression in schizophrenics are seen in those who lose the ability to communicate with others, and who apparently fail to perceive even extremely painful stimuli. The regression of schizophrenics may be mild or marked, but it seldom stays constant. It either gets better or it gets worse. Nations as well as normal people may undergo regression of varying constancy.

When anxiety increases among nations, regression, to some degree is apt to be of international importance. If the usual adult methods of handling anxiety such as by negotiating and by diplomatic maneuvering fail, then more primitive methods such as severing of diplomatic relations and declaring war may be adopted. As schizophrenia represents the ultimate in individual regression, so does war represent the ultimate in a nation's regression. While regression always results in a more primitive behavior, it does not follow that it is futile or without value. Where would we be as a nation if we failed to regress to the state of declaring war on Japan after Pearl Harbor? The regression to warfare with adoption of the primitive methods of killing the enemy and massive destruction of his property was not without great benefit to us. It ultimately succeeded in our overcoming the tremendous and real anxiety of being conquered or at least invaded by the Japanese in early 1942.

That we were truly anxious can be attested to by anyone who remembers those perilous days after that day of infamy, Dec 7, 1941. The tremendous celebrations and joyful festivities when the war ended were mute testimony to the degree of strain, worry and anxiety suffered by us throughout its' duration.

Today in Vietnam we are once again necessarily regressed literally to the law of the jungle in order to cope with the Viet Cong who threaten our way of life. As the war with Japan ended, our state of regression ended and we adopted more civilized ways of settling our differences. Some day hopefully our battles with the Viet Cong will end, and when the enemy is no longer a threat to us, we can supplant our regressive behavior with more adult behavior.

On a more personal basis we readily recognize many discomforts which are examples physical regressions associated with war. We walk instead of ride, live in tents instead of houses, eat C rations instead of A rations, take cold showers instead of hot ones, and we are greeted with sniper fire and plastique instead of with words of welcome.

It can readily be seen that regression to a state of actual combat is a useful thing for us as a nation. Is regression useful to us as individuals also -- does it relieve our personal anxieties in addition to our national anxieties? The answer is a qualified yes. Resorting to drinking if not carried to excess relieves anxiety. We drink more in Vietnam than at home. People are smoking more (and enjoying it less). Many who gave up cigaretts after the recent cancer scare are again regressing to chain smoking to overcome anxiety. Orally regressive traits such as back biting, criticism, griping and being petulant all help to allay some anxiety. Almost all of us regress in some way to a more primitive (childlike) state of behavior in Vietnam. We stoop to doing things here we would not consider doing in the United States. Potentially or actually harmful as these childish traits may be, they are often subtle and useful devices used unwittingly to rid ourselves of tension. Talking about others, griping and finding fault help to boost our own self-esteem and hence has some positive value. Unfortunately regression if carried too far may increase anxiety and result in excesses of many types with tragic consequences. Thus, severe and repeated alcoholic bouts may result in ruination of ones career, cirrhosis of the liver or in fatal accidents; excessive griping, criticizing and negativism may result in one's being completely obstructionistic and in crippling the efforts of others.

Like most of the mental mechanisms then, regression is a two edged sword, poorly used it is harmful, wisely used it may be most helpful.

John N Gordon, Lt Col
Psychiatry Consultant

(Cont'd from p. 17)
Here he was awarded the MOS of Nuclear Medicine Officer.

Major Reba joined the 85th Evacuation Hospital at Fort Bliss, Texas on 21 July 1965. He has been assigned as the Chief, Medical Service since that date.

Major Reba is a Diplomat of the American Board of Internal Medicine and a member of the American Society of Nuclear Medicine and the American College of Physicians. While he is in Vietnam, his wife and two children are residing in the Washington D.C. area.

SOME EPIDEMIOLOGIC CONSIDERATIONS OF MALARIA IN US PERSONNEL IN VIETNAM

by Major Taras Nowosiwsky, MC
USARV Preventive Medicine Officer

Most areas of Southeast Asia are still highly endemic for malaria. Efforts on the part of local governments, USAID and WHO to control malaria met with varied successes in different countries. In Vietnam, because of hostilities, the control activities were limited primarily to cities, towns and more secure villages. Areas where today our troops are engaged in tactical operations are, in general, highly endemic for malaria since no control programs were in effect.

SPECIES OF PLASMODIA

Three human species have been identified in Vietnam: P. falciparum, P. vivax, and P. malaria. Data from civilian population (parasite-index studies) have shown falciparum and vivax malarias to be endemic throughout Vietnam, with the mountain-high plateau regions being hyperendemic for P. falciparum (Fig 1). Malaria of P. vivax variety occurs in greater proportions along the coast line and in the delta region. Infections due to P. malariae appear to have a similar geographical distribution to P. vivax. The bulk of malaria cases in US soldiers have been due to P. falciparum (97 - 100%). Early in 1965 and during January through March 1966 the incidence of P. vivax and P. malariae infections ranged from 0 to 3 percent; none were documented during the second half of 1965.

Most malaria acquired by troops came from the central highlands. This area had normally cool days and cold nights during the latter part of the year, coinciding with the observed period of absence of P. vivax and P. malariae infections. An interesting corollary comes from past observations in U.S, on strains of P. vivax from Korea and Vietnam. It was noted that vivax infections in man remained dormant (i.e. in stages of incubation or remission) until the mean ambient temperature rose to above the 70°F level; thus the majority of symptomatic vivax malarias in the United States (imported) revealed themselves only during late spring and throughout summer.

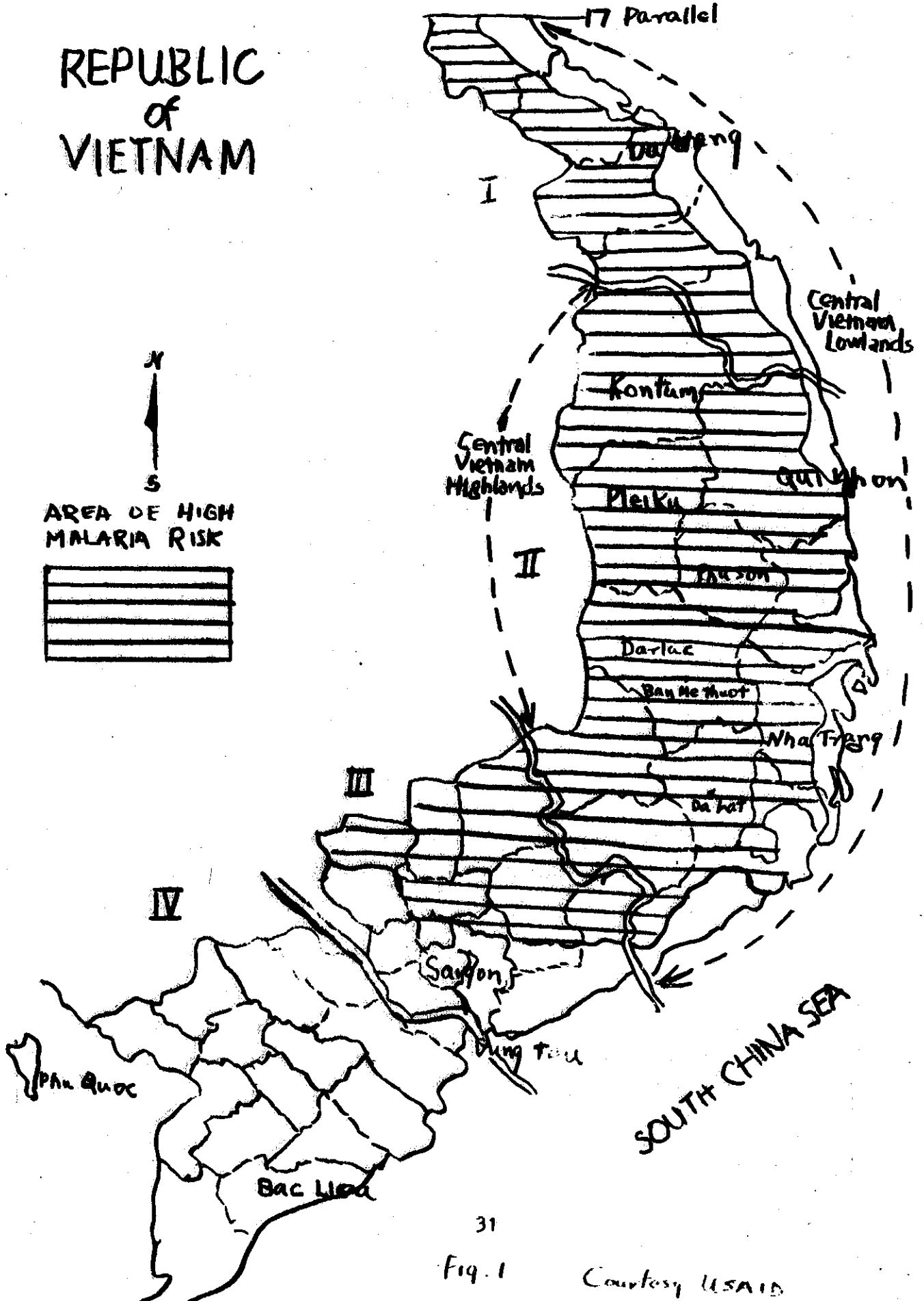


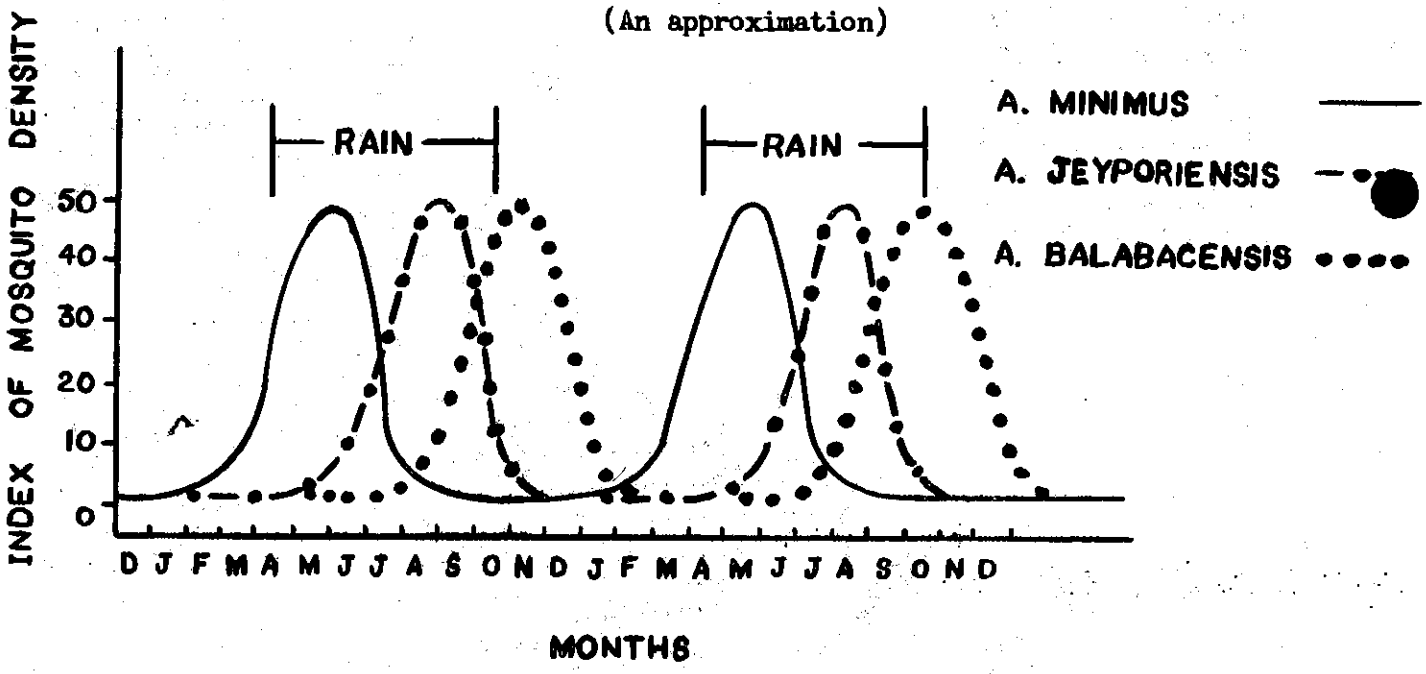
Fig. 1 Courtesy USAID

In Vietnam, all three species of malaria have been occurring in personnel who almost invariably claimed strict adherence to chemoprophylaxis. In the case of patients with P. vivax and P. malariae infections such claims undoubtedly were too ambitious; their therapeutic response was invariably prompt and optimal following their receiving conventional doses of oral chloroquine.

THE VECTOR

Several species of Anopheles were proven to be Vectors of human malaria in Vietnam. A. minimus, A. jeyporiensis, and A. balabacensis are the main Vectors in the mountain - high plateau region (which includes central highlands), while A. sundaicus has been confirmed as Vector in the delta and along the coastal plain to slightly north of Nha Trang. Additionally, A. barbirostris, A. sinensis and A. subpictus are suspected vectors in all coastal plain areas.

FIG 2. Seasonal density of human malaria vectors in the mountain - high plateau regions of Vietnam.



SOURCE: Unpublished data from Entomology Branch, Preventive and Environmental Health Section, Office of Public Health, USAID, Vietnam.

In the highlands, with the onset of the rainy season there is a rise in the density of A. minimus. (Fig 2) As the amount (over 200 mm precipitation per month) and the force of rain further increase the breeding environment becomes unfavorable for A. minimus its density diminishes. A. jeyporiensis appears next and breeds effectively during the period of heavier rainfall. Toward the end of the rainy season A. jeyporiensis density drops coinciding with increasing levels of A. balabacensis. From epidemiological observations it appears that A. balabacensis is the most important malaria transmitter for the mountain-high plateau region.

MALARIA IN US TROOPS

It has been established that very little transmission, if any, occurs in Army base camps, major cities and towns. All these localities carry on active insect control. In general, malaria in U.S. troops is acquired during combat operations, in areas previously controlled by Viet Cong who have interfered with government sponsored malaria eradication programs. Our data shows that incidence of malaria is directly proportional to the number of man-days of exposure to an infected environment. In one area, at peak transmission season, a group of non-immune individuals experienced a casualty rate of approximately one percent of the population attacked for each day of exposure. This high incidence of infection occurred while personnel were on chloroquine-primaquine prophylaxis. That most personnel were indeed on chemoprophylaxis was confirmed by the frequency distribution of symptomatic malarias showing the Normal Curve that peaked 16 days following exposure. The protracted incubation period has been noted repeatedly in personnel on choroquine-primaquine in connection with P. falciparum infectious.

CHEMOPROPHYLAXIS

Without question the P. vivax and P. malariae infections remain highly sesitive to chloroquine-primaquine drug combination. Although drug resistance has repeatedly been documented against P. falciparum strains from Vietnam, chloroquine-primaquine continues to be useful against sensitive strains as shown by the following example: two apparently well individuals with laboratory confirmed P. falciparum parasitemia were discovered among a random group of soldiers returning from a combat mission. While both individuals were continued on weekly chloroquine-primaquine tablet alone they remained asysptomatic and became free of parasitemia in 2 and 3 days respectively. Blood smears were followed for additional 14 days and remained negative.

A LOOK TO THE FUTURE

In the presence of chloroquine resistant strains of P. falciparum our current chemoprophylaxis will only in part be successful. In areas where

resistant strains predominate significant numbers of malaria casualties can be expected; they will be closely related to operational involvement of troops and to season.

Fig. 2 shows that a seasonal increase in incidence of malaria may now be expected.

Fears of introduction of malaria into United States are justified. An analysis of cases which had occurred in U.S. during 1960 to 1964 has shown that for each 250-500 imported cases (P. malariae were excluded) one local transmission of malaria had occurred, involving one or more people as a direct result of the importation. (J.P. Luby et al., in press). With an increase in military traffic from Southeast Asia the concern over introduction of P. vivax and P. malariae, with subsequent propagation, is a very real one. Only stress on terminal chemoprophylaxis and early diagnosis of imported cases will reduce this danger. Jeffery and Eyles (1955, Amer, J. Trop. Med. Hyg., 4:781), while working with falciparum malaria, have noted that gametocytes infective to mosquitoes are absent for at least the first 14 days of parasitemia. This fact in conjunction with the "malignant" nature of falciparum symptoms enhance the chance of timely discovery of such cases.

THE POSTERIOR COLUMN

BYGONE DAYS - II

Cases of tic douloureux are hard to come by now and on many large services one may not see more than a few a year that come to operation. On the other hand, there was a time when the cases gravitated to a few clinics that were known for their treatment of tic. One such was the service of Francis Grant at the Hospital of the University of Pennsylvania. Continuing the series that was started there by Frazier in the early 1900's the clinic was well over its 2000th case in 1948, with a mortality of less than 1%, when three consecutive cases done by the resident staff died. They were catastrophic deaths - pulmonary embolism, gastric hemorrhage, and coronary occlusion, but to Dr. Grant, who had kept to less than one death in a hundred in friendly competition with others, this was staggering blow. He came up fighting. "Do you realize," he said, "that I'm going to have to do the next 298 cases without losing one". Two hundred and ninety-eight cases of tic douloureux!

Walter Dandy was another surgeon whose "special" operations ran in the hundreds. In his lifetime he made about 700 sections of the vestibular nerve for Meniere's disease, and the following slip of the tongue shows what a household word "Meniere's" had come to be in Baltimore in

those days. I was reviewing a series of intracranial aneurysms for Dr. Grant and came across a case in which Dandy and Grant had collaborated in the management. All their correspondence was in the file. It had been decided that the patient was to go to Baltimore for operation, and she was sent, and a short note from Dr. Dandy then stated he would notify Dr. Grant of the date the patient was to be scheduled so that he could come down. It is this notification that is interesting. It was a telegram acknowledging the date of Dr. Grant's arrival and further stating that Dr. Dandy would meet him "at ten Meniere's to nine." A remarkable slip. But there were no others, as a final note from Dr. Grant expressed his great satisfaction with the outcome.

When we say that the people in the good old days were colorful, we must remember, too, that their work was. There are all sorts of hues and shades of things up and down the brainstem, and they were named as they appeared. To Von Monakow it was the nucleus ruber. To Soemmering it was the substantia nigra. Others saw the globus pallidus, the gray of the ala cinerea in the floor of the fourth ventricle overlying the vagal nuclei, the gray around the central canal, the stratum griseum of the superior colliculus, and the locus ceruleus. Stilling came up with a simple one. Slicing his way up through the pons he came on a circumscribed, densely white area that occupied the middle of the tegmentum. To him it could be only one thing, the nucleus blanc. But our luck did not hold. Someone came along and renamed it the decussation of the brachium conjunctivum.

MEDICAL Newsletter

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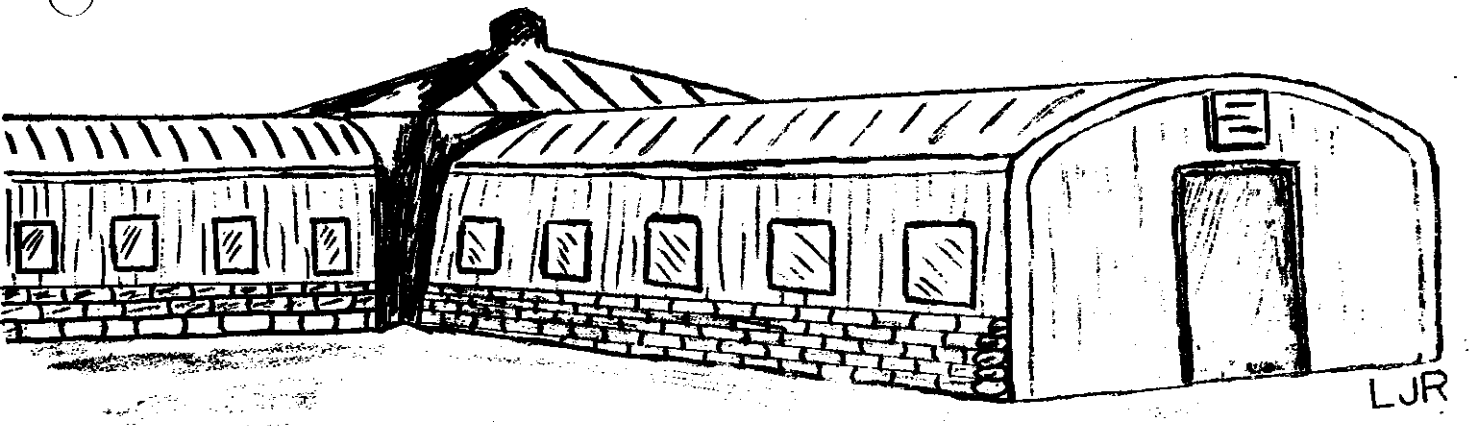
CONSERVE THE FIGHTING STRENGTH



93rd EVAC HOSPITAL

LONG BINH

KEY HOSPITAL PERSONNEL

Lt Col Thomas D. Kelly is a 1946 graduate of Creighton University, School of Medicine, Omaha, Nebraska. He was assigned in Korea from 1947 to 1949 as a Preventive Medicine Officer and then returned to civilian life. He returned to active duty in 1951 and was assigned to the VII Corps in Germany followed by an assignment as Regimental Surgeon 2d Armored Cav. He returned to the Advanced Course at MFSS and then had a residency in general surgery at Brooke General Hospital. On completion of this, he went to Korea where he was assigned as Chief General Surgery, 121st Evac Hospital, and later as CO, 43d Surgical Hospital. On return, he was assigned as Division Surgeon of 2d Airborne Division, and in 1962 as Chief Department of Surgery, Fort Sill, Oklahoma. He is a Diplomate of the American Board Department Surgery and Fellow American College of Surgeons.

CHIEF OF SURGERY SERVICE 93RD EVACUATION HOSPITAL

Lt Col Walter C. Gordon, Jr., MC, is a native of Albany, Georgia. He obtained a B.S. in Chemistry from Hampton Institute, Va. in 1947 and an M.S. in Chemistry from the George Washington Carver Research Foundation, Tuskegee Institute, Ala. in 1948. Following his medical training and receiving an M.D. Degree at Meharry Medical College, Nashville, Tenn. in 1955, he interned at Letterman Army Hospital, S. F. California in 1955-56, He attended Army Medical Field Service School, Ft Sam Houston, 1956 and had a Residency in General Surgery, WRAH, Washington, D.C. 1957-61. He is a Diplomate of the American Board of Surgery - 1962 and a Fellow of the American College of Surgeons - 1964. His previous assignments include: Walston Army Hospital, Ft Dix, New Jersey, 1961-62, Division Surgeon 7th Inf Division and CO 7th Med Bn - 1962-63, the Military Medicine and Allied Sciences Course, WRAIR, WRAMC 1964, and Chief of General Surgery, Irwin Army Hospital, Ft Riley, Kansas 1964-65. Lt Col Gordon's wife, Suzanne and son W. Carl, II reside at 912 Dorsett St., Albany, Ga.

CHIEF PROFESSIONAL SERVICES 93RD EVACUATION HOSPITAL

Lt Col Thomas Hudson, MC, graduated from high school in Florida in 1945 and entered Tulane University for his premedical and medical school training where he graduated in 1954. During this time he had a 18 month draftee tour in the army and was in the Army of Occupation in Japan in 1946-1947. He intended at Madigan Army Hospital and served as a battalion surgeon in Alaska until his discharge. After a general practice residency he decided on a general surgery career and reentered the army for a 4 year residency at Charity Hospital of Lousiana at New Orleans. He again returned to the Pacific and Chief of General Surgery at 121st Evac. Hospital in Korea during which he had a 3½ month tour

as 9th Log Surgeon in Korat, Thailand. The career course at MFSS was waiting his return prior to his assignment at Martin Army Hospital as Chief of General Surgery. He joined the 93rd Evac. Hospital at Fort Riley on 19 Sept 1965 for another tour in the Pacific where he was the Chief of Surgery until 1 May when he became the Chief of Professional Services.

CHIEF, NEUROLOGY SERVICE 935TH MEDICAL DETACHMENT

Capt. Robert Daroff, MC, graduated from the University of Pennsylvania School of Medicine in 1961. After interning at Philadelphia General Hospital, he took his three year Neurology training at Yale, the last year of which as Chief Resident in the Yale-New Haven Medical Center. During his Residency, he spent time as a visiting Fellow at the University of Miami, in Neuro-Ophthalmology, which is his area of special interest. He has published eight professional articles in his Field and has several more in preparation.

COMMANDING OFFICER 935TH MEDICAL DETACHMENT (KO TEAM)

Major John A. Bowman, MC, was born and raised in Mt. Joy, PA. He is a graduate of Franklin and Marshal College (1955) and Temple University School of Medicine (1959). Major Bowman completed his residency in psychiatry at Walter Reed in 1963 and has had tours of duty at OTSG, Fitzsimmons General Hospital, Valley Forge and has been in Vietnam six (6) months. He is married, has three (3) children and probably four by the time this news letter is published! Mrs. Bowman is presently residing in Wheaton, Md.

CHIEF, MEDICAL SERVICE 93RD EVACUATION HOSPITAL

Major John J. Deller Jr. had his undergraduate training at the University of Pittsburgh and graduated from the Medical School of the same University in 1957. He interned at Fitzsimmons General Hospital in Denver, Col. and did his residency in Internal Medicine at Walter Reed General Hospital. Upon completion of residency training, he served as internist at the U.S. Army Hospital, West Point. He served a one year fellowship in Endocrinology and Metabolism at the University of California in San Francisco from 1963 to 1964. Prior to coming to Vietnam as Commanding Officer of the 1st Medical Battalion with the 1st Infantry Division in September 1965, he was chief of the General Medical Service, Radiosotope and Endocrinology Clinics at Letterman General Hospital in San Francisco.

HEADQUARTERS
93rd Evacuation Hospital
APO US Forces 96227

Unit History and Information

Welcome to the 93d Evacuation Hospital (SMBL). You are joining a unit with a history of outstanding service to the US Army during war and peace.

The parent unit of this hospital was activated as the 61st Surgical Hospital in July 1923 and assigned to the Organized Reserve in the VIII Corps Area. On 1 June 1941, the 61st Surgical Hospital was transferred to Fort George Meade, Maryland and placed on the active duty status. They participated in the Carolina Maneuvers of 1941. Following this a training mission was resumed and they continued in this status until 19 August 1942 when it was designated as the 93d Evacuation Hospital (Motorized). The training mission continued until 4 April 1943 at which time the unit staged through Camp Shanks, New York boarding ship to reach Casablanca, Morroco on 24 April.

During their stay in North Africa, The 93d Evac Hosp functioned as a regional station hospital.

By early July all patients were evacuated and the unit moved to port departing by ship 9 July. On 10 July the unit learned of its role in the Sicily Invasion which occurred that day. The first elements arrived in Sicily the evening of 13 July. Considerable difficulty was encountered in locating supplies and equipment, but despite these, the first casualties were received on 16 July. The hospital closed on 23 July, casualties were evacuated and on the night of 23-24 July, a blackout movement was accomplished arriving in the new area 0600 hours. By 1800 hours, the hospital was established and receiving casualties. Two subsequent moves were made in Sicily and on 6 Sep the hospital was again closed for the preparation of the invasion of Southern Italy. The 93d Evac Hosp arrived there 23 Sep. Active support of the campaign in Italy continued until 5 January 1944, at which time orders were received to clear the hospital and prepare to support another assault. The hospital and male personnel were loaded aboard a LST on 19 Jan, arriving in the Anzio Beachhead 22 January 1944, the day of the invasion. The initial plan called for the landing of the hospital that evening, however, resistance prevented its unloading until the afternoon of 23 January. The landing was accomplished under continual shelling. The hospital was established and again began receiving casualties. On 24 Jan, the first shelling of the hospital resulted in casualties. Despite the building of trenches and revettements casualties continued to mount and on 29 January the unit was ordered to move north of Nettuno away from the actual port facilities. After the move from Anzio, activities had to

be restricted because of numerous raids. On the night of 29 March, a raid resulted in five deaths and 34 wounded plus large equipment losses. On 11 April an inter-unit transfer of all personnel between the 11th Evac and the 93d Evac Hosp resulted in returning the unit to Fifth Army south of Rome.

By 10 July, the hospital was evacuated of patients and attached to Seventh Army. On 23 July, the handling of equipment was accomplished for the invasion of Southern France. Personnel were loaded during 6-8 August and landed together with their equipment on D-Day, 15 August 1944. By 17 August the hospital was receiving casualties and continued to do so through the wars end moving through South France to Germany, last casualties being received around Kerarube, Germany.

After serving as regional hospital, the unit closed in November 1945 in preparation for movement to Camp Kilmer, New Jersey, reaching there 12 December 1945 at which time it was inactivated. The unit was reactivated on 17 January 1955 at Fort Riley, Kansas which has been its home station since that time. During this period, it has participated in exercises Sagebrush, 1955 in Louisiana; Swift Strike II, 1962 in South Carolina; Desert Strike, 1964 in California; plus numerous other local and regional exercises.

The 93d Evac Hosp arrived in Vietnam 4 Nov 1965 and became operational 1 Dec 1065.

CAMPAIGN PARTICIPATION CREDITS:

Sicily; Naples-Foggis (w/arrowhead); Anzio (w/arrowhead); Rome-Arno Southern France (w/arrowhead); Rhineland; Ardenne/Alsace; Central Europe.

UNIT DECORATIONS:

Meritorious Unit Commendation, Streamer embroidered EUROPEAN THEATER.

UNIT CREST:

The badge is in the colors of the Medical Department on silver. The cross is a symbol of faith, the snakes are the symbol of Aesaulapius the Greek God of Medicine while the Pomegranate is a symbol of medicine Plenty.

The motto is in Latin FIDE ET FIDUCIA is translated as FAITH AND TRUST.

MISSION

The mission of the unit is to provide hospitalization for all patients originating in the combat zone.

The 93d Evacuation Hospital stationed at Fort Riley, Kansas received its alert for overseas movement on 31 Jul 65. Two days prior to this, the 1st Inf Division had received its alert for similar movement levying the personnel of the 93d Evac Hospital for fillers. A total of 56 personnel were transferred. From that time until its eventual departure date 15 Oct, activities were directed toward preparation. Personnel and equipment readiness dates were 21 Sep, a date which was met. The professional complement with few exceptions arrived 19 Sep, however, it was possible to have them prepared for movement 21 Sep. Equipment was loaded 24 Sep being sent to Beaumont, Texas for shipment to Vietnam. Personnel were trained insofar as time and equipment permitted and on 15 Oct were airlifted to San Diego, California departing by USNS the same day. The unit arrived at Vung Tau, Vietnam 31 Oct, debarking 4 Nov for air shipment to Bien Hoa Airbase. The unit bivouacked in an area provided by the 2d Brigade 1st Div from 4 Nov to 4 Jan 66. The last elements departing the bivouac area 4 Jan 66. During the period 4 through 26 Nov, the unit remained in a non-Operational status. Red Circle TAT equipment and supplies were received 7 through 10 Nov. On 27 Nov, the first TOE equipment was received. The unit immediately went to work establishing a hospital in the buildings provided by the 159th Engineer Group. The patient treatment facilities were established in semi-permanent buildings. Hospital HQ, A & D Registrar, Pharmacy, Laboratory and X-Ray were established in tents. Initially 220 beds were provided, by 20 December this had expanded to 350 beds, a level of 250-270 patients being maintained.

On 12 Jan 66, this hospital expanded to 410 beds and maintained a census of 250-340 occupied beds. During this period all complexes were completed. Wards, administrative, and supply areas were operating in their assigned buildings. The construction of sidewalks and installation of electrical wiring continues. Improvements in the security, including construction of gate barriers, personnel bunkers, and guard bunkers is continuing.

During the period 1 Jan to 31 April, the 93rd Evac has continued to show steady progress, flexibility and ability to expand. A total of 3298 patients were admitted among which there were 1137 IRHA. During this time 854 patients were evacuated out of country.

THE USE OF MASSIVE INITIAL DOSES OF CORTISONE IN THE MANAGEMENT OF EXTREME SHOCK IN THE CRITICALLY INJURED

A Report of 25 Cases

Alan H. Bennett, Capt, MC, Walter C. Gordon, Jr., Lt Col, MC, Thomas D. Kelly Lt Col, MC

From the Surgical Service, 93d Evac Hospital, APO US Forces 96227

The rapid evacuation of patients from the site of wounding to a hospital for definitive life saving surgery, as is now possible with our present Aero Medical Evacuation System, will without doubt prove to be a major factor in lowering mortality and morbidity rates among combat casualties, when the complied statistics are finally analyzed and compared with those from previous wars.

With this rapid evacuation, however, has come the challenge of managing an unusual number of so-called "mortally wounded" patients. Our early experience at the 93d Evacuation Hospital alerted us to the prospect of receiving a number of severely wounded patients, who upon arrival were still alive chiefly because of the rapidity with which they were transported to us; we therefore anticipated that as the conflict progressed, a larger total effort would be devoted to attempts at resuscitation and salvage of patients falling in this category.

During our first month of operation, 1 December thru 31 December 1965, 697 patients were admitted to the hospital of which 200 were combat casualties; during the same period of time three patients were admitted who were in extreme shock, with blood pressures ranging from 90 mm/Hg systolic to "0", as a result of exsanguinating hemorrhage. By the usual criteria of triage each of these patients was classified as "mortally wounded", and in the mass casualty situation would have been treated expectantly. At the time of their arrival, however, the relatively stable condition of other less severely injured casualties, and the availability of ample personnel permitted immediate attention to them. Correspondingly, in each case, after whole blood had been started the patient was transported to the operating room with the aim of controlling the hemorrhage as a part of the resuscitative effort. All three patients died, however, immediately after the skin incisions were made. Since each patient was being well oxygenated via endotracheal intubation and whole blood was being transfused, we suspected that inadequate tissue perfusion resulting in cumulative acidemia led to the terminal event in the form of cardiac arrest. We therefore concerned ourselves with planning an approach to the management of this type of patient aimed at forestalling this suspected series of terminal events, thus gaining more time in which to allow the surgeon a "chance" to control the bleeding.

Based upon the suggestion of Lillehei, et al (1), one of us (AHB) proposed a trial of large initial doses of cortisone in conjunction with other resuscitative measures including whole blood, in an attempt to improve tissue perfusion in view of the critically low cardiac output which these patients exhibit upon arrival. We exploited this idea, and empirically designed a clinical study which defines our present approach to the management of wounded patients in extreme hemorrhagic shock, and at the same time permitted us to evaluate any possible "life-extending" benefits from the early administration of large doses of cortisone to these patients.

Materials & Methods

From 23 January thru 30 April 66 twenty five patients were included in this study, all of whom were injured as a result of hostile action. While numerous other patients in mild to moderately severe shock were admitted during the same period of time, they responded to the usual management with prompt reversal of shock and were not included.

The study group generally consisted of those casualties admitted with blood pressures less than 90 mm/Hg with a range down to "0" however, several patients are included who had admission blood pressures ranging from 90 mm/Hg to 170 mm/Hg systolic, but who had a precipitous and sustained drop to critical levels below 90 during resuscitative surgery.

Intensive resuscitative measures were started in the A&D and Pre-Op Sections. Sufficient clothing was removed to permit rapid assessement of wounds and securing and/or application of pressure dressings. Immediate attention to the airway assumed highest priority since the severest patients were found to be semi-comatose and in the throes of secondary respiratory distress. Hyperextension of the neck with forward replacement of the tongue and mandible combined with suctioning of blood and secretions from the hypopharynx were routinely performed as indicated.

Patients who were semi-comatose from shock and/or respiratory insufficiency underwent immediate endotracheal intubation without anesthesia, and oxygenation was started employing the Ambu Bag. Tracheostomies were not performed in the A&D or Pre-Op Sections except in a few cases where the location and nature of the wound made endotracheal intubation hazardous or technically unduly difficult.

In the majority of cases, sufficient personnel were available so that at least two major peripheral veins could be cannulated during the same time that the above measures were being carried out, and a sample of blood submitted to the lab for cross matching and typing. In the majority of cases a direct request for untyped "0" negative blood

of low titer was made due to the extremely critical state of the patient, while veins were kept open with clinical Dextran at full flow rates. All patients were given an initial intravenous injection of 89.2 (2 vials) Meq. of sodium bicarbonate, 50 cc of 20% mannitol and one vial of a vitamin K preparation thru the I.V. tubing. Alternate patients received 500 mg of Solu-Cortef in addition to the above medications.

During the next few minutes, while waiting for the whole blood, and indwelling catheter was inserted into the urinary bladder and where feasible extremities were wrapped with ace dressings up to the groin, in lieu of placing patients in the Trendelenberg position, which we believe throws abdominal viscera underneath the diaphragm, thus limiting its excursions and hampering respiration. When whole blood arrived, it was started under pressure utilizing a cuff, and the patient was then immediately transported to the operating room.

Once in the operating room, minimal anesthesia with high oxygen flow rates was administered, and after a limited skin preparation employing merthiolate or betadine surgical exposure of the bleeding site was carried out. Immediate control of the bleeding was accomplished by clamping, digital pressure ("finger in the dike") and in a few cases was best controlled temporarily by packing. In several cases it was deemed wise to delay further manipulations until after initial control of bleeding and to allow an interim of further intensive blood replacement. During this interim, which in two cases lasted approximately 45 minutes, repeated administration of bicarbonate and in some study patients more cortisone was given, and vigorous oxygenation was likewise carried out. Return of capillary filling in local tissues, satisfactory urinary output and a gradual rise of the systolic blood pressure generally signified a favorable response, and the operation was then completed.

RESULTS

Table I gives an analysis of the 25 patients managed thus far, indicating that 18 or 74% had blood pressures below 90 mm/Hg, while 7 or 26% had admission blood pressures greater than 90 mm/Hg (compensated shock) but were added to the sutdy when they "decompensated" during the usual resuscitative measures.

Table I Severely Wounded Patients Decompensated Upon Admission Versus

Those who were compensated on the basis of Blood Pressure Recordings.

Total # Patients	Decompensated B.P. - 90 mm/Hg	Compensated B.P. 90 mm/Hg +
25	18 (74%)	7 (26%)

The overall results of the total effort in these 25 patients are reflected in Table II, in which the patients are classified into resuscitative successes, resuscitative failures and the total deaths. Total deaths include the resuscitative failures plus those patients who died of causes other than "refractory shock".

TABLE II Classification of Patients Showing Resuscitative Successes, Resuscitative Failures and Total Deaths.

Resuscitative Successes	Resuscitative Failures	Total Deaths
22 (88%)	3 (12%)	8 (32%)

The severity of the injuries in the entire group was reflected in the average number of units of blood given as well as the period of time in which patients were in shock. Table III shows the blood Transfusion statistics for survivors, resuscitative failures and the five patients who died of causes other than "refractory shock".

TABLE III Transfusion in three groups of patients in the study and the average period of shock for each group.

	Survivors	Resuscitative Failures	Deaths from Causes Other than shock
Average Blood Replacement(units)	19.6	24.3	38.8
Range	5-38	23-26	14-68
Median	19	24	46
Average Period in Shock(minutes)	97.7	301.6	136
Range	30-240	215-450	20-250
Median	75	240	150

There was absolutely no difference in the clinical course of those patients who received cortisone during resuscitation and those who did not; Out of the 22 patients listed as "resuscitative successes" in whom it was possible to reverse shock, exactly one half (11) received cortisone. Of the three resuscitative failures two received cortisone.

DISCUSSION

The results presented on blood transfusions required for the entire group prior to achieving stability, reveal an overall total average replacement of 27.5 units. When one considers that the blood volume of the average 70 kilogram soldier, in excellent physical condition, is approximately 5 liters, it is impressive to note that average patient in this series received the equivalent of slightly over twice his entire blood volume. There is therefore no doubt that these were extremely serious injuries and their management presented an unusual challenge to us.

First of all, we learned that surgeons engaged in the care of such patients must accept the fact that all but the minimum amount of time for pre-operative preparation of the patient is denied. High velocity missiles (2800 ft/sec or greater) are notorious for producing multiple massive areas of tissue destruction within the body, and for leaving large wounds of exit through which blood from torn vessels and/or highly vascularized organs rapidly pours out. When large arteries are involved, the situation is even more critical as has been elucidated by Dr. Francis Moore: "The significant fact here is that the loss from the blood volume is from the arterial tree proximal to the site of peripheral resistance. Blood pressure therefore cannot be developed. Peripheral tissues are ischemic, there is a decreased venous return, markedly decreased cardiac output, and decreased pulmonary perfusion and effective ventilation. These events may be rapidly fatal with death primarily due to anoxia of myocardium and brain. Survival depends upon control of the hemorrhage itself so that peripheral resistance and hence pressure may be restored. It is in this situation par excellence that operation is a part of resuscitation; control of the bleeding vessel itself is a prerequisite to survival and to further surgical care of the wound." (2) In total appreciation of this concept we have thus formulated our approach to these cases based upon limiting preoperative administrations to those measures which aim to "gain time" for the surgeon to control the bleeding.

Following severe trauma, extremity crush or hypothermia metabolic acidosis often occurs. (3)

Manger(4), et al studied the effect of pH control and increased oxygen delivery on the course of hemorragic shock in dogs and concluded from their work that neither pH control alone nor increased delivery of oxygen alone altered the survival rate in experimentally induced hemorrhagic shock. The combination of pH control and increased oxygen delivery resulted in a greater rate of survival. We believe that our policy of oxygenation of our most critical patients by immediate

endoctracheal intubation combined with the empirical administration of sodium bicarbonate is a logical first step in counteracting cumulative or impending acidosis. A Surgical Research Laboratory is now attached to the 93d Evacuation Hospital and future studies on whole blood pH, blood lactic acid and $p_{O}2$ and $P_{CO}2$ titers are expected to make it possible to correlate the clinical course of patients in severe shock with the morbid chemical anatomy.

With regard to kidney function in our study, anuria existed only in the three resuscitative failures as a part of the terminal picture; thus in the remaining 22 patients (88%), including the five patients who subsequently died of causes other than shock, urinary output was normal. We are strongly convinced that the concept of establishing immediate tubular flow while blood replacement and surgery are in progress militates against tubular shut down. Our prompt use of mannitol (12.5-37.5 gms) intra-venously has thus far proved extremely beneficial, in protecting the kidneys from shut down from anoxia as well as from sludging following multiple massive transfusions (5).

The empirical administration of 1 vial of vitamin K has not been noted to be of clinical benefit in this situation and will not be used at this stage of therapy in the future. Only two patients in the entire series had a so-called bleeding diathesis, one survived and the other died. On a whole, bleeding diathesis have not been a problem and calcium heptogluconate has been used prophylactically on the basis of one vial per every four-five units of blood.

SUMMARY

The overall approach to the mangement of 25 combat casualties in severe hemorrhagic shock is presented. Twenty two (88%) of the group were successfully resuscitated with surgical control of hemorrhage. There were three (12%) absolute resuscitative failures, and five patients who were resuscitated ultimately died of causes other than "refractory shock" giving an overall mortality of 8 (32%).

Among the 22 patients in whom initial resuscitation was successful, eleven received an initial dose of 500 mg Solu-cortef entravenously (treatment group) and the remaining half did not receive cortisone (control group), the selection being randomly chosen using alternate patients with blood pressures from 90 mm/Hg to "0". From these data it is concluded that there is no clinically beneficial effect of cortisone in this dosage level with regard to promoting perfusion.

From this study, we conclude that greatest benefit to successful resuscitation and ultimate salvage of "mortally wounded" patients is to be derived from an organized approach to certain unusual demands, namely, early immediate endotracheal oxygenation, vigorous blood replacement, blood buffering against sequelae of metabolic acidosis, using bicarbonate,

establishment of mannitol induced urinary flow and prompt surgical control of hemorrhage. As far as purposes of this study are concerned, the use of cortisone is being discontinued.

BIBLIOGRAPHY

1. Richard C. Lillehei, Gerrold F. Longerbean, Jack H. Block, William G. Manax, The Nature of Irreversible Shock. Annals of Surgery, 160: 4, Oct 64.

2. Francis D. Moore, Metabolic Care of The Surgical Patient, W. B. Saunders Co., Philadelphia, pp 177.

3. L. L. Smith, J. T. Hamlin, III, W. F. Walker, Francis D. Moore, Metabolic and Endocrinologic Changes in Acute and Chronic Hypotension in Man, Metabolism, 8 : 862, 1959

4. W. M. Manger, G. G. Nahas, D. Hassam, D. V. Habif and E. M. Papper. Effect of Ph Control and Increased O_2 Delivery on Course of Hemorrhagic Shock, Annals of Surgery, 156:503 September 62.

5. Bt. Col. K. G. Barry, MC, Capt. R. I. Mazze, MC and Capt John P. Malloy, MC, Therapy of Acute Renal Failure in Man, Mannitol Symposium, Walter Reed Institute of Research, Walter Reed Army Medical Center, Wash., D. C., 3 Feb 62.

LIVER INVOLVEMENT IN FALCIPARUM MALARIA

by Major John J. Deller Jr. MC
and Capt. Theodore O. Slick, MC

The current variety of falciparum malaria in South Vietnam is characterized by its protean manifestations. The ability to make a definitive early diagnosis has proved difficult in many instances. This problem is of extreme importance as the most gratifying therapeutic results have been achieved when a prompt diagnosis is made and immediate treatment is instituted.

Since the initial clinical features of P. falciparum infection are frequently indistinguishable from several other tropical febrile diseases, and the parasites may not yet be abundant in the erythrocytes, any additional diagnostic clues that may be useful would be welcomed.

On the basis of knowledge concerning the life cycle of the malaria parasite in man, it is evident that in the earliest phase of infection, it may be more fruitful to look at tissues other than the erythrocytes, for evidence of disease. One organ in which the primary exoerythrocytic cycle takes place is the liver. Since there are readily available a

number of sensitive liver function tests which might reflect parasitic invasion, such tests may provide one of the earliest signs of parasitism. Indeed, a sensitive enough test might show an alteration during the incubation period of the disease.

Prompted by this fact, and by interest in seeking both clinical and laboratory features that might separate malaria from other "FUO'S", we have been examining this hypothesis. Preliminary data suggests that study of appropriate liver enzymes may well provide important differential data.

The purpose of this report is to record such a case falling into this category in which a liver biopsy confirmed a histologic abnormality, perhaps due to "malaria hepatitis".

C A S E R E P O R T

A 21 year old soldier who had been in Vietnam for only 6 weeks became ill upon return from a 17 day field operation. During this period he was unable to use mosquito netting at night, and he used repellent infrequently. The abrupt onset of chills, fever, fronto-parietal headache and lightheadedness occurred while he was convoying back to camp.

He was observed at a clearing station for 48 hours where his fever was noted to range from 103° to 104° F. A malaria smear was negative. He was transferred to the 83rd Evacuation Hospital on the 4th day of his illness.

His past history was negative for prior malaria, hepatitis or dysentery.

At the time of admission the patient was acutely ill with a temperature to 105° F. His sensorium was initially cloudy, but improved when his temperature was lowered with alcohol-water sponging. Blood pressure 90/60, pulse 120/min., respirations 20/min. There was no conjunctival suffusion or hemorrhage, nor was there retinopathy or papilledema. The neck was supple. Examination of the chest was unremarkable. Left upper quadrant abdominal tenderness without hepatosplenomegaly was present. Examination of the skin and lymph nodes was not remarkable and tourniquet test was negative. Except for difficulty dealing with abstractions initially, the neuropsychiatric examination was normal.

Pertinent laboratory data are recorded in table # 1, and the temperature graph in table # 2.

The patient was not started on antimalarial therapy until 36 hours following admission when the diagnosis was confirmed on the second

malaria smear, obtained at a time when the patients temperature had dropped to normal. He became afebrile on the 5th day of therapy and has had a subsequently uneventful recovery.

A liver biopsy was performed on the 6th hospital day, the 10th day of clinical illness. It revealed diffuse focal areas of parenchymal necrosis, some with no cellular reaction and some with a moncnuclear reaction. Pigment was noted in the Kupfer cells, but no organisms were seen. The parenchymal cells showed ballooning of nuclei and regeneration and an occassional round, clear inclusion or vacuole in the cytoplasm.

The patients initial therapy consisted of chloroquine for 5 days, quinine for 14 days and dapsone (Diaminodiphenylsulfone) was begun on the 7th hospital day and continued for 14 days.

D I S C U S S I O N

Although the earliest records of man show that malaria has been present since antiquity, it has only been within the last 20 years that a complete understanding of the life cycle of the malaria parasite in man has been recognized (1). It was the exoerythrocytic stage that long escaped detection in man, even though such a stage was suspected from the fact that inoculated sporozoites disappeared from the blood stream 30 minutes after injection and remained hidden for 7 or 8 days in P. falciparum infections. (2).

Shortt et al. (3), in 1948 reported finding schizonts in the parenchymal cells of the liver in monkeys and man. Since this event occurs during the first week on infection and precedes the appearance of parasites in the red blood cells, (and overt clinical symptomatology), it may be possible to uncover an early tissue reaction by sensitive function tests and to confirm this stage of the disease by liver biopsy.

The case presented is typical of the malaria being seen in Vietnam. It is not an infrequent occurrence to experience difficulty confirming the diagnosis by blood smears during the first few days of illness (4). Furthermore, clinical manifestations not being specific enough to distinguish malaria from many other tropical diseases, treatment may be unnecessarily delayed.

We have recently undertaken to study the various clinical and laboratory features of possible differential value in such cases and preliminary data suggests that liver enzyme studies might provide important information. We have rarely found serum glutamic oxalacetic transaminase (SGOT) elevations in suspected ARBOR virus disease while at the same time finding that the SGOT is frequently elevated in patients with

malaria (5). That this finding represents altered liver function and not simply hemolysis is suggested by stable hematocrits at the time when the first elevations of the enzyme were noted. The present case is illustrative of this and the liver biopsywas confirmatory of a form of hepatitis. It is possible that by studying a battery of more specific function tests such a SGPT, BSP, and flocujation studies, important early diagnostic clues may be uncovered.

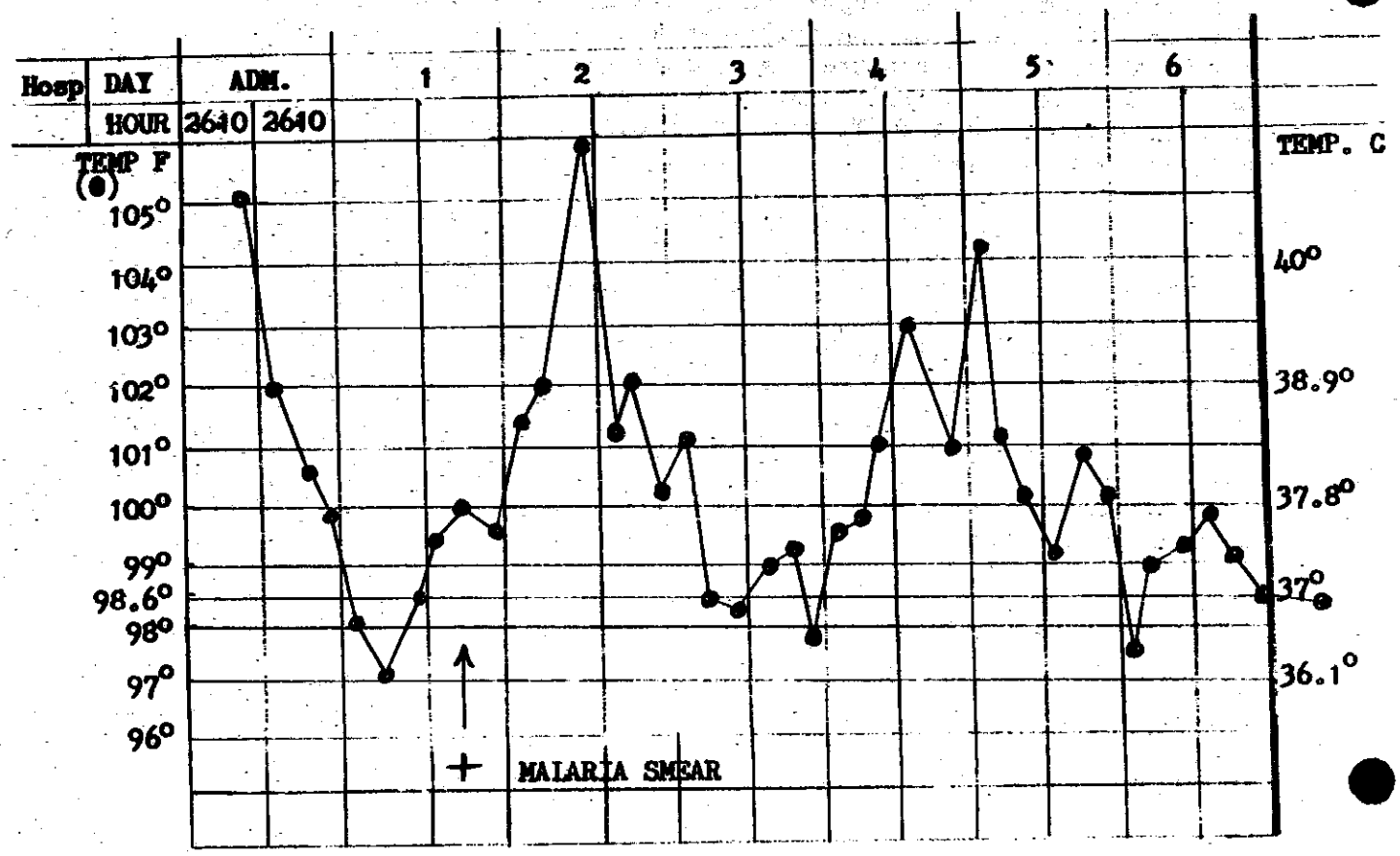
It is also possible that in the very early case when the exo-erythrocytic phase is still prominent that the parasites may be discovered by liver biopsy. The follow-up of such cases would also provide interesting data as to subsequent changes in liver function and morphology. Such studies could also provide much needed knowledge about the true fate of the exo-erythrocytic phase of parasitism in falciparum malaria.

The varied clinical manifestations of the current variety of falciparum malaria in South Vietnam would suggest that a search for changes in other organs, especially bone marrow and intestinal mucosa, might also be rewarding.

TABLE 1 LAB DATA CASE G. A.

Hosp Day	1	2	3	4	7	14
HCT	41	41	40	34	38	39
WBC	4000	2800	5000	5000	7200	11,500
ESR	3	3	-	-	6	8
SGOT	108	72	95	120	70	84
BILI	1.0	.64	.64	190	.56	.16
BUN	15	16	15	18	-	12
MAL	NEG	POS.	POS.	NEG.	NEG.	NEG.

TABLE 2 TEMPERATURE GRAPH CASE G. A.



REFERENCES

1. Coggeshall, L. T.
Textbook of Medicine, Beeson and Mc Dermott
Saunders, Phila., 1963

2. Chandler, A. C.
Introduction to Parasitology
Wiley, New York., 1954

3. Shortt, H. E. etal.
Brit. Med J. 4550: 547 (1948)

4. Berque, Steven, etal.
Unpublished data.

5. Deller, John J., etal.

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93rd Evacuation Hospital
Surgical Service

9 May 1966

A Five Month Review of Major Vascular Injuries

In the first five months of operation the 93rd Evacuation Hospital has had 43 patients admitted with a major vascular injury. Thirty eight (38) had their primary surgery here while six (6) had their primary operations prior to being evacuated here. One patient is being listed in both categories as will be explained later. The remaining five (5) died. There were several cases of smaller arterial injuries (i.e. posterior and anterior tibial, radial, ulnar, and obturator) which are not included in this report.

Number of cases:

Where treated	Total	Successful	Failure	Amputation	Died
93rd Evac	38	29	7	4	5
Other	6	1	5	3	0

In the above chart it is difficult to total the numbers because some people had successful repairs but ended up with amputations due to bony and soft tissue injuries. Some of the failures had viable extremities and it was choosen not to do further surgery at this hospital.

Rather than emphasize one's success, I believe it is more informative to discuss the failures and deaths. Of those who died there was one who expired after the start of induction of anaesthesia. He was shot by a 50 caliber bullet which destroyed the anterior thigh muscles and vessels high in his right thigh. The skin was intact in the area and he had nearly exsanguinated prior to arrival. Pressure was applied to control bleeding until it could be clamped, but he expired first. The second fatality came in at the same time and also arrived in deep shock with a thru and thru 50 caliber wound from the right flank thru the left iliac wing. In its course it had torn the right common iliac artery

away from the aortic bifurcation and destroyed the iliac vein in the area. There was associated severe right colon, small bowel, sigmoid colon, and right ureter damage. He was in shock for about 4 hours and died in shock with oozing from his wounds about 18 hours later. The third and most tragic death was that of a brachial artery injury which had a successful repair but had associated chest and abdominal injuries along with a fractured other arm. After a delayed primary closure on the 4th day he was returned to the ward where he developed severe respiratory difficulties. This was due to the prior contused lung and possible silent aspiration at the secondary operation. Oxygen was started and a tracheostomy was immediately started, but he expired. The 4th death was that of multiple large wounds from a mine explosion. The lethal one was a large piece of steel which penetrated the pelvis thru the iliac crest and damaged the hypogastric vessels, rectum, small bowel and bladder. He bled massively from the pelvic injury, and he required 38 units of blood. He become jaundiced and septic following surgery. He died about a week later. At autopsy no apparent cause of death could be found. The fifth and final death was in a multiple wounded patient who had a markedly contused left lung and hemopneumothorax for which a chest tube was inserted and a tracheostomy done. On the fourth day a delayed primary closure was done of his wounds and at the termination of the procedure his tracheostomy tube was changed. When this was done there was hemorrhage which necessitated opening his chest. The eroded innominate artery was repaired but he remained semicomatose and died several days later. The cause of the erosion was most likely due to the low tracheostomy into the trachea.

Of the seven failures originating at the 93rd, three were reoperated upon with a return of normal pulses. One failure had a viable extremity but no pulses and it was decided to do no further surgery here due to the multiple other wounds. One failure had the return of pulses but his leg had to be amputated anyway due to severe bony and soft tissue damage distal to the repair. Another failure had an end to end anastomosis of his popliteal artery which pulsated well. When pulses did not return in his foot he was re-explored and a clot was found at the suture line. It was excised and a vein graft placed. Pulses did not return so he was evacuated in that status with viable foot. The final failure was a patient who had a dislocated knee and an open fracture of the tibial plateau. He had debridement and his dislocation reduced 18 hours before being evacuated here, but nothing was done for the vascular insufficiency. He was taken to surgery immediately on arrival and a thrombosed segment of popliteal artery was removed and a saphenous graft placed. He had a return of pulses but ended up with an amputation due to non viable muscles due to the prolonged ischemia before the definitive surgery.

There are several interesting facts found with these vascular injuries. There were fractures in 13 cases of which 10 were apparently caused by the same missile that injured the vessel. There was one

definite case where the bone fragment was the object that caused arterial laceration. There were 10 cases of associated motor nerve injury. Of the total 43 patients there were 26 that had only a major artery or vein injured while 17 had more than one major vessel involved. The resulting disposition of the surviving patients was the return to duty of 12 patients while 26 were evacuated for further surgery or convalescence.

The following chart will give a rough idea of the vessels injured and how they were handled. Both injuries of the external carotid artery and the one of the internal jugular vein were at the base of the skull where even ligation was difficult. By far the worse results were in association with popliteal vessel injury. In our small series it appears that the lower in the popliteal artery the injury is located, the worse the result, as might be expected.

Another observation is that when ever possible the popliteal vein should be repaired because we have had some very poor results due to venous obstruction when the arterial repair worked well. Another explanation for the poor results around the knee is that there is usually soft tissue and bone destruction in the area to further compromise the circulation.

	How repaired				
	Sutured	Vein graft	End to end	Ligated	Result
Inferior vena cava:	1				Good
Common Iliac Vein:				1	Died
Common Iliac artery:	1				Died
Common femoral vein:	1				Good
Supf, Fem. Artery:	1	2	7		9 Good, 1 amputated
Supf, Fem. vein:	1			7	Good
Profoundus fem artery:			1	2	Good
Profoundus fem vein:				2	Good
Popliteal artery:	1	2	5		4 Good, 1 poor 3 amputated
Popliteal vein:	1			3	1 Poor, 1 good 2 amputated
Axillary artery:		1			Good
Axillary vein:	2				Good
Brachial Artery:		2	9		10 good, 1 poor
Brachial vein:				2	Good
Innominate artery:	1				Died
Ext. Carotid artery:				2	Good
Int. Jugular vein:				1	Good
Hypogastric vessels:				1	Died

In summary we have arrived at several conclusions from observing our cases and those evacuated to us. Anyone who does major vascular surgery should keep the patient under close observation for a minimum of several days until the success of the vascular surgery and the viability of the leg is definitely established before putting the patient in the chain of evacuation. It has been shown by two of our cases that pulses were present in the limb at the time of amputation, but they were not viable due to delay in treatment in one and lack of venous return in the other. As mentioned before, ligation of the transected popliteal vein has led to varying degrees of venous congestion. In this series we have found that patients with a major artery injury and who have soft tissue injuries distal to this should be re-inspected at 24-48 hours. We have found what was thought to be an adequate debridement at the original operation may need much further debridement on re-inspection, and I feel this should be a routine in cases of this category.

THOMAS L. HUDSON
Lt Col, MC
Chief of Surgery

FUNCTIONS OF THE 935TH KO TEAM

The 935th Med Det (KO) Team arrived in Vietnam 23 Dec 65 and was attached to the 93d Evac Hosp for the purpose of establishing a psychiatry and neurology treatment and evacuation center for the combat zone. The KO Team is composed of 8 officers and 12 EM, including 3 psychiatrists, 1 neurologist, 1 clinical psychologist, 2 social workers, 1 NP nurse, 5 NP specialists, 5 social work specialists, and 2 clinical psychology specialists.

Since becoming 100% operational in late January 1966, the Team has evaluated well over 800 soldiers, utilizing an active outpatient clinic with a dynamic mental hygiene consultation service approach, and also utilizing a 20-bed inpatient service that affords a variety of therapeutic approaches.

The P&N casualty rate is somewhat lower than prior combat rates.

Combat exhaustion is not seen so frequently as WW II or the Korean Conflict, because the combat is not so prolonged or sustained. Many stress reactions, however, are encountered, and particular noteworthy is the physical stress of heat, dehydration, and diarrhea, which, in a cumulative effect, severely aggravate mental stress.

Combat psychiatry is somewhat different than psychiatry practiced in a noncombat area or civilian life: while it is true that some psychotic disorders, e.g., schizophrenia, and a few psychoeurotic disorders are seen, the majority of cases are really stress reactions of one kind or another. The stress varies from simple separation from home and family to the severe stress of combat. Generally, the maturity of an individual is a determinant of the amount of stress one can endure until disabling symptoms appear. The symptoms are usually not in the form of a thinking disorder or mood disorder, but, rather, a somatic disorder. Often encountered symptoms are headaches, stuttering, GI symptoms, chest pain, or back pain. Somnambulism and syncope are also seen. Frequently a fatigued soldier who develops a systemic infection will also, from the added stress, develop symptoms of anxiety or agitation. Usually this is not a toxic reaction, although we have seen a few cases of cerebral malaria and, of course, encephalitis could present the same clinical picture.

The therapeutic approach for psychiatric patients includes brief psychotherapy, both ventilative and supportive. Also the usual tranquilizing drugs are available. The inpatient service is oriented to the milieu principle: soldiers are admitted, given clean clothing, a shower, and a warm meal, followed by sedation for rest, when appropriate. The soldier-patient is expected to keep his area clean and assist ward personnel in maintaining a neat ward. For example, the patients wash windows and police the ward area. At all times the soldier is reminded he is part of the United States Army in a combat situation and is expected to behave accordingly.

Patients, for instance, stand for ward rounds and display to attending physicians the same military courtesy they would for their own unit commanders. The majority of soldiers are proud to do this. There have been very few incidents of acting-out behavior.

The soldiers on the ward tend to help each other and exert controls on behavior. The ward staff appoints a patient NCO, who, in turn, supervises ward details. When a soldier is not considered "well enough" to be off the ward alone, a buddy system is utilized. An ambulatory convalescent patient may assist another patient in going to the latrine, mess hall, or showers.

In conclusion, the combat situation is an ideal place to invoke a prinicple of milieu therapy on the therapeutic community. That principle is that one soldier is responsible for another soldier's welfare. The use of the "buddy-system" on the psychiatric ward tends to greatly cut down on acting-out behavior and helps maintain the attitude of expectancy of recovery and return to duty.

NEUROLOGY SECTION 935TH KO TEAM

by Capt Robert Daroff

The Neurology Section of the 935th Med Det (KO) Team has evaluated over 300 patients in the outpatient clinic and wards of the 93d Evac Hosp during our first four months of operation.

All varieties of neurological ailments have been seen, with the exception of neoplasm. The most commonly seen disorder is peripheral nerve injuries, and represents about 25% of the total. The bulk of this group are on the surgical wards of the hospital.

Next in frequency are "seizures and synocope." Soldiers with Grand mal seizures who appear controllable are placed on medication and returned to duty with a profile and assignment limitations. Those who are difficult to control, and almost all psychomotor epileptics, are evacuated.

We do not have an EEG machine, so that patients requiring this study are sent to Japan.

Headaches and "post-concussion syndrome" are the two disorders next in frequency. The latter is a symptom-complex which follows head trauma and consists of postural dizziness, vertigo, nausea, hyperacusis, and tension headache. In the initial weeks following the concussion, the syndrome is organic in etiology. However, when it persists for months in the absence of objective neurological signs, a functional factor involving secondary gain must be suspected, and psychiatric evaluation obtained.

Patients have been referred and transferred from medical facilities throughout RVN for evaluation at our Neurological Consultation Center at the 93rd Evacuation Hospital. This practice is urged and welcomed.

GLUCOSE 6*PHOSPHATE DEHYDROGENASE DEFICIENCY

by Lt Col Sam Jefferson, MC,
Medical Consultant

Hemolytic anemia due to the 8-aminoquinolone antimalaria drugs (Primaquine) has been recognized since 1934. No racial group has been spared; however, the incidence has been the highest in Negroes (10% of American Negroes) and people from the Mediterranean area. The incidence tends to follow that of falciparum malaria, and it has been postulated that like Sickle Cell Anemia there is a lesser susceptibility to malaria in the affected individual.

In 1954 at the Army Medical Research Unit of the University of Chicago it was demostrated that there is an intrinsic defect in the red blood cells of affected individuals, and that the hemolysis is self limited. In 1956 an inherent deficiency in the enzyme, glucose 6-phosphate dehydrogenase (G6PD) was found in susceptible red cells, and following this, further work demonstrated that this deficiency was responsible for the hemolytic anemia following administration of certain drugs. This enzyme catalizes the initial step in the pentose phosphate pathway of carbohydrate metabolism; this pathway is the only source of reduced triphosphopyridine nucleotide (TPNH) in the erythrocyte which in turn is required for the maintenance of glutathione in the reduced state (GSH), (Fig. 1). When the cell is deficient in G6PD, there is a reduction in the amount of GSH, and the cell becomes more susceptible to either auto-oxidation or various oxidative compounds.

The following sequence of events is believed to occur. Certain drugs such as Primaquine form reduction-oxidation (redox) intermediates, and this oxidative potential is transmitted to hemoglobin and other compounds with resulting formation of methemoglobin. Hydrogen peroxide (H_2O_2) is also formed, and probably causes denaturization of enzymes, hemoglobin and other protein molecules within the cell. These may be seen as Heinz bodies either in a wet mount or with supravital stains (they are not visible with ordinary Wright's stain). In order to maintain cellular and membrane integrity there is an increased demand for ATP; when the metabolic demands placed upon the erythrocyte exceed the supply, hemolysis occurs, primarily in the spleen. As red cells age, their levels of G6PD progressively decrease both in the normal and the G6PD deficient individual, and it is therefore the older red cell which is most sensitive to drugs. In addition there is a definite correlation between dosage, blood levels, type of drug as well as the severity of the individual's deficiency. Thus when 30 mgm, of Primaquine daily are given to a susceptible individual, there is an initial acute hemolysis with formation of Heinz bodies, jaundice and often hemoglobinuria, reaching a maximum in about 10 to 12 days. Following this, in spite of continued drug administration, there is a recovery phase until a state of equilibrium is reached at about 4 weeks. If the dosage is then

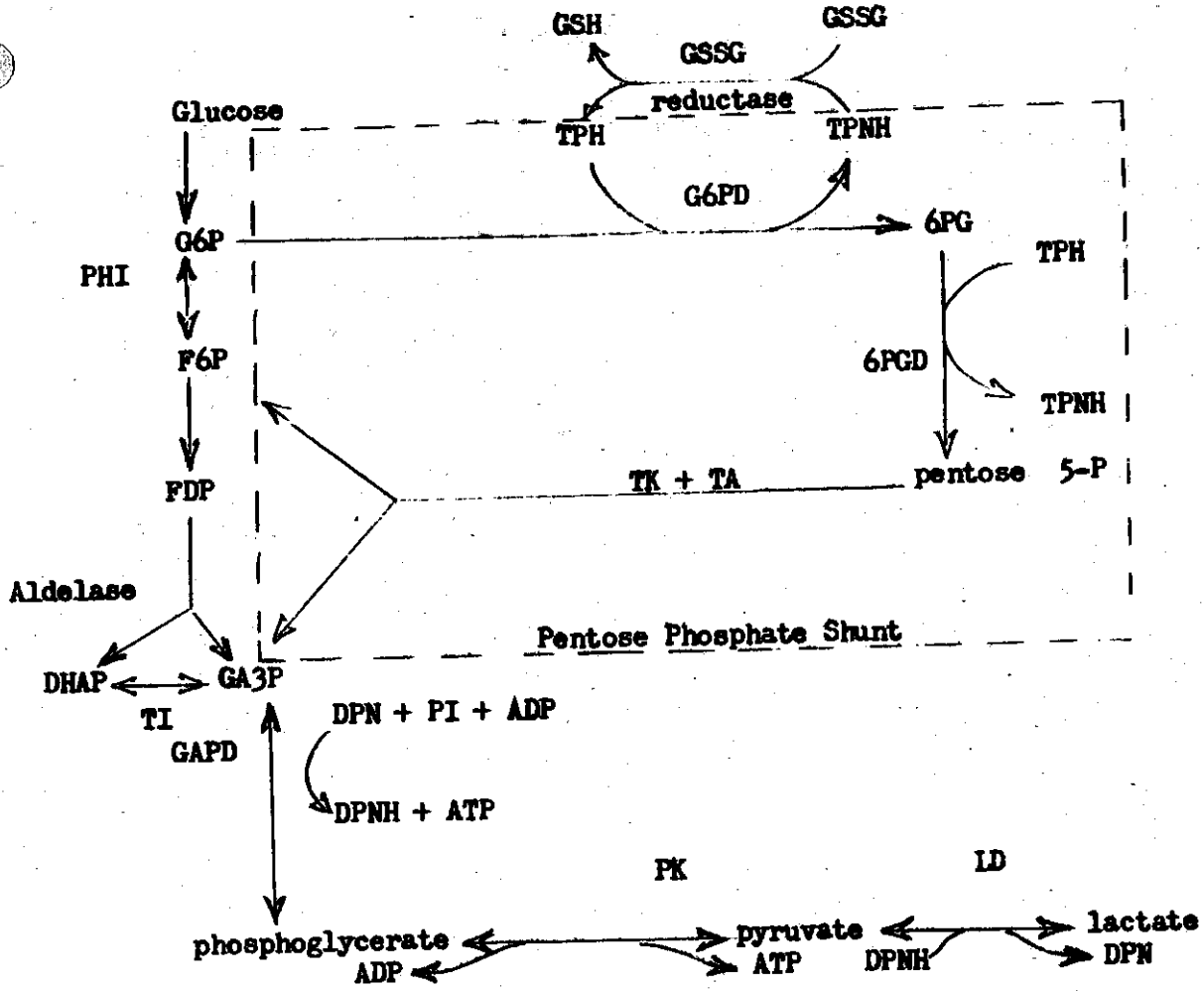
increased, a repeat episode of hemolysis with susequent recovery occurs. Eventually, however, a point is reached at which compensation can not occur.

In addition to the classic G6PD deficiency a number of genetic variants of the enzyme have been described which, while apparently present in normal amounts, are not as effective and therefore also result in primaquine sensitive anemia. A few cases of glutathione reductase deficiency have been described as well as a deficiency in glutathione itself. Hemoglobins H and Zurich are unstable hemoglobins which apparently require higher levels of protection against oxidation and therefore are causes of drug sensitivity in the presence of normal enzyme systems. Hemolytic anemia associated with fava beans ingestion has occurred only in G6PD deficient subjects but apparently requires in addition an unknown serum factor (perhaps an antibody) as not all individuals with G6PD deficiency are affected by fava beans.

A number of other drugs have been implicated in hemolytic anemia with G6PD deficiency. These include Furadantin, sulfa drugs, Vitamin K, phenylhydraxine, acetanilid, phenacetin and PAS. A number of apparently normal individuals have had hemolysis associated with renal failure. Here it is felt that the blood levels of the drug were so elevated due to failure of the excretory mechanism that even normal amounts of enzymes were insufficient to protect the red cells. It is therefore important to recognize that the occurrence of hemolytic anemia in G6PD deficiency is simply a failure of the normal protective mechanisms and that if the insult is great enough to normal cells, hemolysis will also occur.

Diagnosis of this condition is based upon the clinical picture, history of drug exposure and specific laboratory tests. During the first 3 days Heinz bodies may be observed in the peripheral blood; these rapidly disappear (probably due to trapping of the abnormal cells in the spleen). A number of tests have been devised including an assay technique for G6PD. This latter, however, will not pick up those cases due genetic variants of the enzyme as opposed to those due to a deficiency in the amount of enzyme. The widely used and most practical procedure is the methemoglobin reduction test. It is simple to perform, has a visual endpoint, has a high degree of accuracy and is adaptible to mass screening procedures. Methemoglobin is formed by subjecting the red cells to sodium nitrite. Methylene blue is then added; if TPNH is present, a TPNH-dependent methemoglobin reductase system is activated. This system requires methylene blue as an oxygen carrier. The persistence of methemoglobin is indicative of a deficiency in TPNH and is therefore directly related to deficiency G6PD.

SAMUEL C. JEFFERSON
Lt Col, MC
Medical Consultant, USARV



Abbreviations: G6P, glucose 6-phosphate; 6PG, 6 phosphogluconate; G6PD, glucose 6-phosphate dehydrognease; TPN, triphosphopyridine nucleotide; TPNH reduced TPN; GSSG, oxidized glutathione; GSG, reduced glutathione; 6PGD, 6 phosphogluconate dehydrogenase; TK, transketolase; TA, transaldolase; PHI, phosphohexoseisomerase; F6P, fructose 6-phosphate; FDP, fructose-1-6 phosphate; DHAP, dihydroxyacetone phosphate; TI, triose isomerase; GA3P, glyceraldehyde-3-phosphate; GAPD, glyceraldehyde-3-phosphate dehydrogenase; DPH, diphosphopyridine nucleotide; DPNH, reduced DPN; Pi, inorganic Phosphate; ADP, adenosine diphosphate; ATP, adenosine triphosphate; PK pyruvate kinase; LD lactic acid dehydrogenase.

USARV MEDICAL REGULATIONS

40-1 Sanitation Standards for Barber Shops
40-2 Medical items requiring Special Storage and Issue Precautions w/change 1
40-4 Drug Prevention of Malaria w/change 1
40-6 Prevention and Control of Venereal Disease
40-7 Immunization Requirements and Procedures w/change 1
40-9 Management of Vascular Injuries
40-10 Patient Effects in Medical Treatment Facilities
40-12 Anti-Cholera Measures for US Military Personnel in Vietnam
40-13 Medical Clearance
40-14 Medical Records and Reports w/change 1, 2, and 3
40-15 Rabies Control and Reporting of Animal Bites w/change 1
40-17 Army Medical Service Officers Biographical Data File
40-18 Space Utilization and Construction Priorities for Hospitalization
40-19 Field Sanitation Teams
40-21 Early Treatment of Wounds and Injuries
40-22 Individual and Unit Protective Measures-Insect and Rodent-Borne Diseases w/change 1
40-23 Participation of AMEDS Personnel in Aerial Flights
40-24 Command Health Report RCS MED-3 (R3)
40-25 Medical Specialty Board Examinations
40-26 Whole Blood Program
40-27 Anesthesia
40-28 Prevention and Treatment of Heat Illness
40-29 Care of the Feet
40-30 Requisitioning and Use of Certain Medical Material
40-31 Mess Sanitation
40-32 Sanitation - Waste Disposal
40-33 Treatment of Malaria
40-34 Mental Health and Neuropsychiatry
40-35 Dental Services Administration and Treatment
40-36 Preventive Medicine Unit Services
40-37 Subsistance Reimbursement for Hospitalization
40-38 Preventive Dentistry Program
40-39 Medical Civic Action Program (MEDCAP I AND II)
40-40 Control of Patient Visits and Interviews
40-41 Disposition of Certain Medical Material

Much useful information on all USARV Regulations and Forms and how to obtain them is to be found in USARV Circulars 310-1, 310-2 and 310-4.

EDITORIAL

Medical conditions continue to take their toll among members of the USARV Surgeons Staff. The third and latest officer to be evacuated is Lt. Col. Thomas Sheehy, MC, the medical consultant. Tom's absence will be sorely felt by all of his many friends and colleagues. Giving tirelessly of his time and effort, he was a frequent visitor to medical installations throughout USARV and a regular contributor to this publication. He has been the moving force behind unification in the treatment of malaria among the various army hospitals in this country. In addition he was invited to discuss his ideas on malaria therapy with personnel of the US Navy Hospital at Da Nang. An ardent enthusiast of research he kept careful check on many important aspects of the malaria problem including incident rate, location of outbreaks of new cases, prophylaxis, therapy, relapses and complications. Recently he was asked for an article on malaria, for the next edition of Current Therapy. In addition to his interest in malaria he has initiated many research projects in other aspects of medicine. In conjunction with Capt Robert Levine of the 3rd Field Hospital, he has written a paper on Hookworm Infestation which appeared in the February issue of the Newsletter. He received a request from the editorial staff of Annals of Internal Medicine to submit this article for publication in a future issue of that journal. We all wish Tom the best of everything - reports are that he is doing quite well and will be assigned to Walter Reed. It is a safe bet that he is not "sorry 'bout that".

Lt Col Sam Jefferson, MC, from Tripler General Hospital is here for approximately two months pending the arrival of Tom's permanent replacement. Sam's already making the rounds of the various medical installations all over USARV. His fine article on Glucose 6-Phosphate Dehydrogenase Deficiency, appears in this issue.

EDITORS NOTES

This issue feature articles by the staff of the 93rd Evacuation Hospital. The next issue will feature articles by the 3rd Surgical Hospital at Bien Hoa and the 2nd Surgical Hospital at An Khe. At times it will be necessary to combine two months issues into one. This is caused by numerous factors including difficulties in gathering articles, lack of articles, typing the articles, proof reading and other delays in publication. Articles are welcome from AMEDS sources at anytime. The 93rd Evac is to be congratulated on their promptness in submitting their excellent articles on very short notice. Published articles do not necessarily reflect views of the editor, the USARV Surgeons Office, nor the United States Army.

Bygone Days III

When the pain of tic douloureux is very peripheral and very well localized to a small area within the autonomous zone of one of the trigeminal branches, nerve avulsion is often effective. This is particularly true for pain radiating vertically to the forehead from the inner part of the brow-supraorbital, and for pain radiating to the corner of the upper lip from the cheek- infraorbital. The operation is done under local anesthesia, but even to patients used to tic pain the moment of avulsion is something else, and they need something extra for pain. I was helping Dr. Francis Grant with an exeresis of the infraorbital nerve, one day, on a gentle, roly-poly old man. He had infiltrated the mucosa of the lip, incised it, and reflected it off the maxilla, bringing the infraorbital nerve into view as it emerged from the foramen and fanned out. The nerve was then injected locally grasped in a hemostat, and avulsed by winding it up quickly on the instrument. The momentary pain must have been too much, and my heart went out to the patient when he gasped, "Doctor, please, could I have an aspirin!" Fifteen minutes later he was on his way home, free of pain, with only a swollen lip to show for his trouble.

When I went to Germany I replaced Paul Crandall at the neurosurgical center in Frankfurt. He was within a few days of rotation and there wasn't too much time to get acquainted, but we went over the professional problems and then spent one last relaxing evening at his home. I remember there was pink lemonade, a very cute, chubby toddler, and a most interesting dinner. I could not be sure- or believe- what I was eating. It was some combination of chicken and peanuts, and so I asked Mrs. Crandall about it. In a very bright and winning way she said, "Oh, this is called Algerian stewed chicken. I've always wanted to try it on someone, and knowing that I would not be seeing you again for a long time I decided to try it on you."

Hughlings Jackson was one of a group of celebrated doctors watching Victor Horsley make one of his early brain operations when, toward the end, he was heard to mutter, "Terrible, just terrible." Ferrier turned to him and asked why he thought so, saying that it seemed to him that Sir Victor had been brilliant. Jackson said, "It was terrible. There he was with the brain of a Scotsman open, and he didn't even put a joke in it."

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SURGICAL HOSPITAL MOBILE ARMY

55TH MEDICAL GROUP

USARV

MEDICAL NEWSLETTER

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.... What amount of labor by a doctor can equal the offering to this country of an infantry man, an aviator, or any member of the fighting forces. There can be no demands upon time and skill that our profession would not gladly give.*

ELLIOT C. CUTLER, Colonel, MC
Chief Consultant in Surgery (ETO, WWII)
Moseley Professor of Surgery
Harvard University

* From Surgery in World War II, Volume II, Office of the Surgeon General, Department of the Army, 1964.

EDITORIAL

On 10 June 1966, Colonel James A. Wier, M.C. assumed the position of USARV Surgeon replacing Colonel Samuel C. Gallup, M.C. who remained as Deputy USARV Surgeon until his departure on 11 July. Colonel Wier came to his present assignment after heading the 44th Medical Brigade since its arrival in-country in April of this year.

It is the new USARV Surgeon's desire that this periodical be upgraded in format to a degree comparable to other periodicals published by the US Army Medical Department. Facilities for obtaining this end will be acquired by having the USARV Medical Bulletin printed in Japan on a bi-monthly basis. The name of "Bulletin" will reappear thanks to the assurance by the USARV AG Section that this is in accord with Army Regulations. Graphs, photographs and other illustrations will be reproduced in black and white. The USARV Medical Bulletin will be published in a booklet form and the cover will remain the same each time at least until further notice.

As in previous issues, articles from members of AMEDS Units in USARV are needed and certain organizations will be featured in each issue. Contributions from civilian and military medical installations in MACV, CINCPAC and CONUS areas will be most welcome. Controversial articles are highly desirable and provisions for editorial comments and rebuttals will be made. Letters to the editor giving opinions, criticisms and comments will be appreciated. Opinions expressed in the articles published will continue to be those of the author and will not necessarily reflect the opinion of the Surgeon, or the US Army. It is anticipated that one or more of the articles in this issue may elicit quite a good deal of controversy.

HEADQUARTERS
2D SURGICAL HOSPITAL (MOBILE ARMY)
APO San Francisco California 96294

HISTORY

The Second Surgical Hospital (Mobile Army) was originally organized and allotted to the Regular Army, effective 1 October 1943, and assigned to the Second Army Corps.

Shortly thereafter, during the dark days of World War II, it was redesignated the 2nd Portable Surgical Hospital, and assigned to the Southwest Pacific Area.

The unit was awarded battle credits for participation in the Southern Phillipine Campaign. It participated in the New Guinea Campaign, and an amphibious assault landing on Igi, and Island in the Asia Island Group.

The unit was awarded the Presidential Unit Citation for outstanding performance against the enemy on Papua in May 1945.

The 2d Surgical Hospital again saw action in the Korean Campaign. While on duty in Korea, the unit gave Medical Assistance to the 8th Army, and received credits for the First UN Counter Offensive, and the Chinese Communist Forces Spring Offensive.

This unit has participated in many exercises during its peacetime operation such as Swift Strike and Desert Strike.

The Second Surgical Hospital was assigned to the 55th Medical Group at Fort Bragg, North Carolina just before it departed CONUS on 14 October 1965. On arriving in Vietnam it became a unit under the 43d Medical Group and arrived on site in An Khe on 6 November 1965. Starting with a bare hillside, the unit has participated in the actual building of the hospital in conjunction with the Engineer unit assigned the mission. All patient areas are in Quonset huts; all unit personnel continue to live in tents, although this will be remedied within the next few months.

The hospital is augmented by a platoon from the 542d Clearing Company and this has provided a total bed capacity of 140. Our maximum patient load to date has been 151, at which time the patient wards were extended into tents.

The unit, while retaining its mobile capacity, has been giving direct support mainly to the 1st Air Cavalry Division. A large amount of station hospital support has also been given particularly in the form of x-ray laboratory and consultation service.

Over 95 percent of patients admitted are surgical in nature. Surgical Specialists available on the staff include a thoracic surgeon, vascular surgeon, orthopedic surgeon, and several general surgeons.

The Second Surgical Hospital is most happy to have visitors from other hospitals and medical staffs and can provide overnight billeting for either female (private room) or male guests.

F. C. DIMOND JR.
Lt Col, MC
Commanding

CURRENT STAFF AND PRESENT DUTY ASSIGNMENT

1. Commanding Officer (and Thoracic Surgeon) Lt Col, F. C. Dimond Jr, MC

2. Chief Professional Services and Chief Orthopedic Service, Major Egon Johnson, MC

3. Chief Department of Surgery, Major Norman Rich, MC

4. Chief Radiology Service, Major Kenneth Foster, MC

5. Chief Anesthesiology Service, Captain Richard Horsch, MC

6. Chief Medical Service, Captain Charles Fitzgerald, MC

7. Chief Nurse, Major Kathryn C. Singer, Army Nursing Corp.

THE MOBILE SURGICAL HOSPITAL IN VIETNAM

A Lesson in Flexibility

By: Lt Colonel F. C. Dimond, Jr., MC

Paralleling the enclave deployment of troops in South Vietnam is the deployment of supporting mobile surgical hospitals. This is a direct result of the terrain which permits relatively little use of road travel, while forcing relatively great use of air travel. The arrangement has allowed all surgical hospitals to emerge in a modified role, with emphasis on bringing the patient to the hospital rather than the hospital to the patient. This is particularly true in the case of the 2d Surgical Hospital at An Khe which supports the 1st Air Cavalry Division. The division possesses its own medivac helicopters and coupled with its otherwise tremendous air mobility capacity has the potential for evacuating large numbers of casualties rapidly from the battle zone. This has resulted in a very high standard of patient care, and, when accurate statistics are available will undoubtedly show a decrease in mortality and morbidity (especially infections).

In Vietnam, the principle of bringing the hospital to the patient does not always result in the hoped-for benefit. This was recently demonstrated in analogous fashion by the 2d Surgical Hospital which was located only a few air minutes away from casualties sustained in the recent operation "Crazy Horse". Because of the terrain, lack of roads and vulnerability to ambush made evacuation impossible other than air. And because of inclement weather and sustained heavy enemy action, even air evacuation was delayed for 12-16 hours. Thus a hospital which was as near the "front" as possible was unable to render immediate care to the casualties despite its proximity.

The Surgical Hospital is in essence two hospitals in one. Each hospital sets for itself the same standards of performance, but only one can attain them. The mobile concept permits the hospital to work out of a home base adapted to the tactical unit it supports (division, brigade, etc.) and to return to this base when the tactical operation is concluded. This may involve movement of an entire 60-bed unit with its only value being its readiness or availability. If there are no casualties, a complete hospital may thus be functionless for a prolonged period, in which case also the troops located in the base camp cannot receive hospital type care and evaluation except by evaluation to a distant hospital. This evaluation imposes and added requirement for air support as well as considerable loss of man hours to the involved units.

When the hospital treats casualties in its mobile role, it reverts to a "beefed-up" clearing platoon - K - team complex which should perform only truly resuscitative surgery. This provides for maximum nursing care of the urgent surgical cases and evacuation of transportable

cases to a fixed facility. Only insufficient or weather-limited air evacuation or a worsening proximal tactical situation should force the deployed hospital to "over-operate" in its undesirable environment (embodying dust, heat, excessive humidity, insects, inadequate electrical power, poor lighting, lack of adequate suction apparatus, longer supply lines and inadequate holding space for the less transportable patients). From a personal viewpoint, if I were safely transportable yet required a laparotomy or thoracotomy, I would prefer not to have it performed in a strictly TOE tent hospital. As alluded to above, when the mobile hospital deploys to the field, it should limit markedly the amount and type of surgery performed and abandons any large amount of station hospital support which it may have been providing. An example of this latter situation exists in the case of the 2d Surgical Hospital which currently provides station hospital type care to the 1st Air Cavalry Division and its numerous large support groups at Camp Radcliff in the Central Highlands while serving as the nearest fixed casualty treatment center for the Division and elements of the 25th Infantry Division and 101st Airborne Brigade. The hospital also furnishes emergency surgical care for many Vietnamese patients. If the mobile hospital component were to deploy to the field, station type support would cease (particularly in the area of X-ray with its power requirements and film supply problems) and the operating capacity would be reduced from seven to two tables. It is significant to contrast this situation with a recent period of relatively heavy casualties when by using seven operating tables, the staff of the 2d Surgical Hospital performed 75 operations in a 12-hour period.

It is a tribute to higher policy-making medical and other headquarters that the two-in-one surgical hospital concept is accepted and that while the mobile component retains its normal TOE equipment, the fixed component is provided with equipment comparable to that found in stateside hospitals.

The fixed facility as opposed to the mobile facility allows detailed clinical studies to be carried out which can ultimately contribute to improved patient care whether it be in the form of equipment changes, improved techniques or increased professional training at all levels.

In short only the fixed facility can assure the finest possible patient care at all times.

THE WOUNDING POWER OF MISSILES

By: Major Norman M. Rich, MC

War wounds present a challenge to the military surgeon. Although certain basic principles have been formulated from knowledge attained in World War II and Korea, the battlefields in the Republic of Vietnam present new problems. Also, surgeons experiencing the results of the implements of war for the first time must learn anew the established methods utilized in war surgery.

An understanding of the wounding powers of missiles is of importance to the military surgeon. WOUND BALLISTICS published in 1962 by the Office of the Surgeon General offers an excellent review of the knowledge attained in World War II and Korea in treatment of the wounded. It should be emphasized that the knowledge of the motion of projectiles and associated tissue response to various wounding agents should be utilized by physicians to improve the care of the wounded. This is illustrated by the fact that high velocity missiles, above 2,500 ft/sec, have a higher kinetic energy, larger temporary and permanent cavity and more severe tissue damage than low velocity missiles. As was described in the Korean War, thrombosis of vessels not in the direct path of the high velocity missile can occur.

In the present fighting in Vietnam a unique situation exists where high velocity missiles from modern arms such as the Russian AK-47 assault rifle and the M-16 rifle are contrasted with the cross bow and spear of the Montagnard tribesmen and the bamboo arrow booby traps of the Viet Cong.

The results of our experience at the 2d Surgical Hospital where the primary mission is surgical care of the wounded cover the first five months of 1966 from 6 January 1966. Of our total of 1196 patients, missile wounds accounted for 521 admissions: 43.6 percent.

In our series of 521 patients sustaining missile wounds approximately 50 percent (258) cases originated from gun shot wounds from small arms and 50 percent (263) resulted from fragments from grenades, artillery, mortars and mines. Six patients received multiple wounds from both sources. Of special interest is the fact that four soldiers were wounded by bamboo arrows. The wounding agent was completely unknown in two cases.

Detailed history, careful examination of the wounds with permanent records by color slides, x-rays, and study of the missile and other fragments have all contributed to our knowledge in determining the origin of the missile and its wounding power.

Over 350 missiles and secondary missiles have been recovered at surgery. It should be noted, nevertheless, that in 66.3 percent of the patients sustaining penetrating missile wounds, either the primary missile or some of the fragments remain after debridement. The recovered missiles are catalogued in our museum to aid in further studies.

Our results parallel those in the theater with a 1.3 percent mortality rate in the 521 patients wounded by missiles (7 post operative deaths, including two patients who expired after evacuation). The wound infection rate was approximately 2 percent after delayed primary closure of most wounds, and primary closure of wounds of the face and hands.

It is hoped that the information that we are acquiring concerning the wounding power of missiles will assist other doctors in the future who are faced with a situation similar to that at the 2d Surgical Hospital.

BACTEREMIC SHOCK

By: Captain Charles E. Fitzgerald, Jr., MC

Under ideal conditions, bacteremic shock remains a perplexing problem. Among combat casualties, it is a constant threat, and may be recognized only if one has a "high index of suspicion". Bacteriologic studies reveal that bacteremia frequently accompanies hemorrhagic shock even in the absence of apparent infection, apparently originating from a previously intact gastrointestinal tract which has lost its normal impermeability. In addition, the susceptibility of animals to endotoxins is devastatingly increased following hypovolemic shock.

Bacteremia is most frequently associated with penetrating wounds of the colon and extensive peritonitis, unavoidable delay of antibiotic therapy, or following protracted shock. The latter two categories have been uncommon due to the excellent services rendered by the medical evacuation teams. The diagnosis should be suspected in any preoperative or postoperative patient who presents with the above history or findings, and particularly if there is fever, vascular lability, reduced urinary volume, altered respiratory rate, or delayed convalescence, although other explanations of these findings may seem apparent. The definitive diagnosis is made only by blood culture, which is a simple, reassuring procedure too often ignored.

Prompt treatment should be initiated once the clinical suspicion is raised. Treatment includes "blood cultures", antibiotics, restoration and maintenance of effective vascular volume, steroids, and adrenergic blocking drugs. As previously mentioned, blood cultures greatly facilitate treatment and are essential for diagnosis. On those patients who are prone to sepsis, cultures should be obtained on admission or at the time of surgery, preferably prior to the administration of antibiotics. The antibiotics given provide broad spectrum coverage of the "usual organisms", and should include penicillin, streptomycin, and either tetracycline or chloramphenicol. With the exception of penicillin, the antibiotic dosage should be that recommended by the manufacturer. The basic studies of the action of penicillin revealed that intermittent small doses of aqueous penicillin are more bactericidal than continuous administration of higher doses. There is no controversy about these results, however the majority of physicians prefer the "ten million units per bottle method". Diluted intravenous injections of one million units every four to six hours deserves comparative trials.

Central venous pressure monitoring has been a real asset in estimating effective vascular volume, and is currently standard practice in the majority of hospital units. The principle fluid

used following correction of the red cell volume has been plasma. Recent studies suggest that low molecular weight Dextran is superior, but this is not yet readily available.

The use of steroids remains controversial, but if they are employed they are used in high doses. Experimental animal studies reveal that protection against endotoxic shock is afforded when the animals are given glucocorticoids prior to sepsis, however the effectiveness after sepsis is established, is equivocal. Poor wound healing and sudden demise during convalescence are the two major objections to the use of massive steroids.

That vasopressors may further impair the peripheral and splanchic circulation in patients with bacteremic shock is currently recognized. The adrenergic blocking drugs (phenoxybenzamine) have recently been under study, and appear to be preferable. They are not available for use, but should be in the near future.

In conclusion, bacteremia is common among battle casualties. Many cases have been avoided or treated unknowingly by the use of routine antibiotics. Its sequela, bacteremic shock, is one of the leading causes of death following trauma and hemorrhagic shock. Despite our current concepts of treatment, the mortality rate is high. Until additional concepts of therapy are discovered, management will remain a perplexing but not necessarily futile challenge.

PUNJI STICK WOUNDS

By: Captain Glenn H. Shepard, MC

The current war in Vietnam presents sharp contrasts in weaponry between the modern and the ancient. The punji stick, with origin several thousand years ago, has proved itself as an effective wounding device. Its use is widespread in the Central Highlands and is a frequent cause of wounds in members of the Allied Forces.

Twenty-two point four percent of all surgical admissions to the 2d Surgical Hospital were wounded by punji sticks. The total of 247 patients spent an average of 14 hospital days undergoing treatment. This represents 81,592 man hours away from the unit. Following the policy outlined by the USARV Surgeon, all punji stick wounds are debrided. Antibiotics are routinely given consisting of intramuscular penicillin and streptomycin. Delayed primary closure is performed the fourth to fifth postoperative day. With leg wounds, sutures are removed on the fourteenth postoperative day. Patients with leg wounds are immobilized two days. A seven day convalescent period follows discharge.

Morbidity from these wounds is low. Two patients presented with infection in four day old untreated wounds. Only six infections appeared in treated wounds. Eight wounds violated the knee joint and one the ankle joint, with all returning to duty within thirty days of injury. In one case the anterior tibial artery and vein were severed. Retained punji fragments were found in six patients. This includes one patient whose punji stick wound had already been debrided at a larger hospital. None of these fragments were detectable by x-ray.

One punji stick penetrated the pleural cavity of our most unusual patient, an Army scout dog. Hemothorax resulted which responded well to therapy.

The punji stick is a wounding device that presents a potentially serious source of infection in untreated cases. By confining its victims for three weeks, it chiefly serves the Viet Cong as an effective means of temporarily reducing the manpower available to the Allied Forces.

2D SURGICAL HOSPITAL MEDICAL MUSEUM

By: Major Norman M. Rich, MC

The 2d Surgical Hospital medical museum was established in January 1966. In addition to a large collection of missiles, the museum now has numerous punji sticks, Viet Cong booby traps, Montagnard crossbows, arrows, spears and knives, several captured Russian and Chinese weapons, and equipment and clothing used by the Viet Cong and North Vietnamese Communists. Members of the 1st Cavalry (Airmobile) Division and the 1st Logistical Command have been very helpful in acquiring many of the items on display.

There has been an increasing number of visitors daily, many from remote areas. Any donation of medical or military interest is gratefully accepted. In mid October 1966 this museum will become part of the Army Medical Museum in Washington D.C.

Historical Note: SHRAPNEL

By: Major Norman M. Rich, MC

Shrapnel, according to Webster's New World Dictionary, is "1. An artillery shell filled with an explosive charge and many small metal balls, set to explode in the air over the object, 2. Such shells collectively, or the metal balls scattered by the explosive of such shells, 3. Shell fragments scattered by any exploding shell".

The term shrapnel comes from General Henry Shrapnel (1761 - 1842) of the British Army who first demonstrated his spherical explosive shell filled with lead balls about the time of the Siege of Gibraltar (1779 - 1783). The British Army adopted his devise in 1803 and in time the shape of the explosive shell became elongated.

By the time of World War II experience had conclusively demonstrated the ineffectiveness of antipersonnel loads such as cannister, grapeshot, chain shot, and shrapnel. In World War I where many tons of shrapnel were used there was little evidence of true shrapnel wounds; therefore, the manufacture of shrapnel was generally discontinued. In comparison, high explosive shells have high velocity fragments which cover a greater area in large numbers than the low velocity shrapnel balls. A 3-inch shrapnel load had less than 300 balls many with such low velocity that neither clothing nor skin penetration was effective within a few yards of the burst. The 81mm high explosive shell with an initial fragment velocity of 6,180 f.p.s. has more than 2,500 effective fragments, at a distance of 20 feet from the point of burst.

It has been noted that para medical personnel and even many doctors give wide usage to the term "shrapnel" in describing wounds from high velocity, high explosive sources. The most scientifically accurate use of the term shrapnel should be reserved for the low velocity load balls as originally described by General Shrapnel.

References: 1) Finck, Pierre A., Ballistics and Forensic Pathologic aspects of missile wounds. Military medicine, 130:545-569 June 1965.
2) Coates, James Boyd Jr. and Beyer, James C. Wound Ballistics, Office of the Surgeon General, Department of the Army, Washington D.C.

THE PITFALLS OF THE COMBAT MEDICAL STATISTICIAN

A Plea for Accuracy

By: Lt Colonel F. C. Dimond, Jr., MC

A paper prepared by the 2d Surgical Hospital for presentation at the AMA Convention in Chicago in June 1966 has focused attention for our staff on the potential errors inherent in compiling medical statistics. Since overall statistics come from a variety of sources, the ultimate total is the product of the brief checklist flow sheets encouraged and browbeaten out of fixed hospital sources or tabulated by non-medical clerical type personnel. The initial statistic may actually originate with an inexperienced over-worked A&D clerk who takes his information from a battle casualty who is justly only interested in medical care. Other statistics may originate from a statistic hating medical officer who fails to see their obvious importance. Again, during the mass casualty or high workload peaks, there is an excellent excuse for ignoring any possible benefits that may accrue from accurate statistics.

At the 2d Surgical Hospital, where 92 percent of admissions are surgical, the average battle casualty at the time of admission does not know what the etiology of his wound is. If he is asked if he was shot, he is apt to reply "I guess so" to the A&D clerk who then records the admission diagnosis on the A&D sheet as "Gunshot wound". Most A&D sheets are notoriously incorrect in this respect.

The admitting physician has been noted to be particularly careless about this information and tends to appraise a hole in a body part as gunshot wound or fragmentation wound depending on his or the patients estimate of the situation. This may never be corrected in the body of the Medical chart.

Another common error in recording wound areas occurs when the medical history and physical examination show several body areas to be involved, but when the cover sheet (DA 8275) is completed one or more of these areas is omitted. This is frequent enough to alter somewhat the overall tally of Anatomical wound distribution. Orientation of professional staff and A&D personnel can eliminate this source of error.

The Field Medical Card (DD-1380) in numerous instances begins the chain of statistical error if it is accepted without checking it for accuracy. Most are completed by medical Aidmen who frequently incorrectly note the wound Etiology, and who fortunately rarely incorrectly note the fact of whether or not the wound resulted from hostile action. There have been several Field Medical Cards which have indicated or suggested that the wound has resulted from hostile action when a little investigation has determined that the wound

was self-inflicted. The self-inflicted wound, whether intentional or accidental, is of great importance to the unit and the US Government and the statistics in this category should be the correct ones.

One of the most disturbing sources of error is the misuse of the word "Shrapnel" on the Field Medical Card by medical aidmen and unfortunately by doctors who seem to feel this term covers a multitude of metallic sins. Even in the 2d Surgical Hospital some of the less experienced physicians used this nondescriptive term initially, apparently calling on its colloquial acceptance.

Because of the wealth of misinformation available from A&D and checksheets and medical history and final summary sheets, it is felt that a little extra effort is in order to insure accurate reporting and evaluation.

Other good sources of information are the patients unit (which usually is well informed on the mission that invoked the casualty), lesser injured and more orientated individuals from the same mission, x-ray evaluation of the non-removable fragments, and ordnance evaluation of the removable fragments. A careful history from the lucid patient, a thorough evaluation of his wound, and a little interest in the types of missiles one may meet in this theater of operations all contribute to statistical accuracy and certainly make the task more interesting.

In reviewing the many pitfalls inherent in the battle casualty statistics gathering effort, it makes one wonder if the World War II and Korean Conflict statistics aren't possibly tremendously inaccurate. A plea is therefore made for accuracy in the Vietnam theater of operation. A little extra effort at the beginning of the statistics line will keep the ultimate records truly more meaningful.

HEADQUARTERS
3D SURGICAL HOSPITAL (MOBILE ARMY)
APO 96491

KEY HOSPITAL PERSONNEL

COMMANDING OFFICER

Major Peter E. Downs is a 1957 graduate of Cornell University Medical School. He took his internship at Tripler Army Hospital, Hawaii and spent the following year as battalion surgeon with the 1st Battle Group, 27th Infantry, 25th Division at Schofield Barracks. He then had a general surgical residency at Brooke General Hospital. On completion of this he was assigned to DeWitt Army Hospital, Fort Belvoir, Virginia. He is a diplomate of the American Board of Surgery.

CHIEF OF PROFESSIONAL SERVICE DEPUTY HOSPITAL COMMANDER

Major Gale E. Thompson is a 1960 graduate of the University of Washington School of Medicine, Seattle, Washington. He interned at Madigan General Hospital. Following the Army Medical Field Service School in 1961 he had a Residency in Anesthesiology at Walter Reed General Hospital. Upon completion of this training he became Chief of Anesthesia and Operative Service at Martin Army Hospital, Fort Benning, Georgia. In addition to his duties as the 3d Surgical Hospital, he serves as Anesthesiology Consultant to the USARV Surgeon.

CHIEF NURSE

Major Francis O. Vandiver, daughter of Mrs. Thomas M. Vandiver (537 Drayton Circle) was born in Anderson, South Carolina. She is a 1946 graduate of Anderson Memorial Hospital School of Nursing. Major Vandiver entered the Army on 1 November 1958 and served a tour in Germany 1951-1954 and another foreign tour in Korea 1959-1960. Other stateside assignments include: Valley Forge General Hospital, Phoenixville, Pa; Fort Huachuaca, Arizona; Fort Knox, Kentucky; and Fitzsimons General Hospital, Denver, Colorado. She attended the Ward Administration and Supervision Course at MFSS in 1956 and also the Army Nurse Corps Advance Course, MFSS, 1960. Prior to coming to Vietnam, she was assigned as the Army Nurse Corps Counselor, Fifth Recruiting District with the responsibility for Iowa, Nebraska and South Dakota. Arriving in Vietnam she was assigned to the 3d Field Hospital, Saigon prior to assignment as Chief Nurse, 3d Surgical Hospital, Bien Hoa.

MEDICAL OPERATIONS ASSISTANT - EXECUTIVE OFFICER

Captain Thomas Greene, MSC is a native of Orlando, Florida and received a B.S. degree in Mathematics from West Virginia State College, Institute, West Virginia in 1961 where he was designated DMG and received a Regular Army Commission in the Medical Service Corps. He was immediately assigned to the 7th Field Hospital, Fort Knox, Kentucky as a Hospitalization Unit Commander. From here he went to Fort Sam Houston, Texas to attend the MSC Officers Basic Course and to marry. January 1962 took him to Europe where he held assignments in the 629th Medical Company (Clr) and 695th Medical Company (Amb) which he commanded and eventually ended his tour in Germany with the 36th Medical Battalion in February 1965. He returned to Fort Meade, Maryland as the Sqdn Med Asst, 3/11th Armored Cav Regiment for the greater part of 65 and then went to the 36th Evacuation Hospital also at Fort Meade before coming to Vietnam with the 36th Evacuation Hospital. Captain Greene's wife and three (3) children now reside in Maryland.

REGISTRAR

First Lieutenant Daniel C. Spina, MSC, is a native of Hollywood, Florida. He obtained a B.S. in Biology from Florida State University in 1964. He entered the Army in August 1964, completed the MSC officers Basic Course at the Medical Field Service School, Fort Sam Houston, Texas and was assigned to the USAH, Fort Carson, Colorado as the Plans and Training Officer. He returned to the Medical Field Service School in May 1966, for the Battalion Surgeons Assistant Course and joined the 3d Surgical Hospital (Mbl A) in June 1966.

MEDICAL SUPPLY OFFICER

Captain Gerard J. Lehoux, MSC, was born in Biddeford, Maine. Upon graduation from high school, he enlisted in the US Coast Guard and entered active duty in 1943 at Manhattan Beach Training Station, Brooklyn. He was assigned to the USS Orange, PF 43, and served three months on board. After the war with Japan he was separated in 1946. While in the USCGR he participated in three major campaigns in the South Pacific. He received a B.S. degree in Physical Education w/minor in Corrective Therapy from Ithaca College in 1950 and worked one semester at the Graduate Program of Ithaca College. He has worked in V.A. Hospitals in Northport, Long Island, Boston, Framington, Mass, and Philadelphia where he was Chief Corrective Therapy until 1957 when he entered the Army with a direct commission as 1st Lt. He has attended the MSC Orientation Course (1957), Basic Adjutants Course (1959), Medical Supply Course (1963) and the MSC Career Course (1965). Captain Lehoux and wife have four (4) daughters of which three (3) are teens and a set of twins.

HISTORY - 3D SURGICAL HOSPITAL (MBL A) 1949-1965

This unit history will cover the major exercises, operations, and TOE changes of the 3d Surgical Hospital (Mbl A) from the time it was reactivated in May 1949 up to December 1965.

The 3d Surgical Hospital (Mbl A) was activated on 6 May 1949 at Fort George G. Meade, Maryland after three years and six months inactive status after World War II.

Soon after the activation plans were made in preparation of an assignment to Eniwetok Atoll to provide medical support to the military personnel stationed there.

Since the mission was to provide medical support at the station hospital level the TOE authorizing 60 beds and 100 percent mobility was changed to a 25 bed station hospital, ZI, and a 25 bed expansion unit Com Z. The authorized personnel strength was four (4) officers and twenty-two (22) enlisted men.

The majority of equipment and supplies were requisitioned from the Louisville Medical Depot Reserve and arrived at port in time to accompany the unit overseas.

The 3d Surgical Hospital arrived at Eniwetok on 17 March 1950 and prepared to establish the necessary treatment facilities. Since the fixed hospital buildings were not completed until October 1950, a small building, to be used as a dispensary was provided by the Army Garrison Forces and the Surgical and ward sections were located in the U.S.S. APL 27, anchored off shore. Lack of adequate transportation to the ship and rough waters often hampered the proper treatment of emergency cases. When the permanent buildings were finally completed there was room for 55 beds with expansion available to 77 in case of emergency.

In February 1951 the mission was changed to provide medical support at the station hospital level to all military and civilian personnel on Eniwetok Atoll. This increased the authorized personnel to seven (7) officers and thirty-seven (37) enlisted men.

The hospital was in operation from 17 March 1950 to 25 May 1951. During this period there were a total of 9,470 outpatients, 841 inpatients and 46 major operations.

The 3d Surgical Hospital had a profound influence on Eniwetok Atoll. Most major health hazards were reduced greatly by intensive insect and vector control and the elevation of sanitation standards.

On 29 June 1951 the 3d Surgical Hospital was returned from Eniwetok Atoll to Camp Stoneman, California.

Station assignments from Camp Stoneman to present were as follows: 4 July 1951 to 4 February 1953, Camp Rucker, Alambama; 4 February 1953 to 27 July 1954, Camp Pickett, Virginia; 27 July 1954 to 4 August 1965, Fort George G. Meade, Maryland; 4 August 1965 to present, Bien Hoa, Vietnam.

The unit history is very sketchy up to 1959. In 1953 the unit was redesignated the 3d Surgical Hospital (Mbl A). In 1959 the unit participated in the Fort Meade Outdoor Carnival, erecting tentage and displays for public viewing.

From 13 May to 19 May 1959 one platoon from this unit consisting of one (1) officer and thirteen (13) enlisted men supported the Armed Forces Week demonstrations at the Valley Forge Army Hospital, Pennsylvania. This was coordinated by the Phoenxville, Pennsylvania Junior Chamber of Commerce.

During the period 28 October to 31 October 1959 two (2) officers and thirteen (13) enlisted men supported the 57th Medical Detachment Helicopter by setting up exhibits and air evacuation demonstrations for visiting personnel of the Medico-Dental Symposium, U.S. Naval Hospital in Philadelphia, Pennsylvania.

On 10 January 1961 application was made for Superior STRAC Unit 1960. This award was subsequently presented to Commanding Officer, Lt Colonel Eugene Mullaghey by Major General Thomas Watling on 29 May 1961 during ceremonies at Fort George G. Meade, Maryland.

From 27 June 1961 to 29 August 1961 this unit was sent to support ANADUTRA at Camp A.P. Hill, Virginia. During September of the same year our TOE strength was ammended to three (3) officers, one (1) ANC, and eighty-seven (87) enlisted men.

In June of 1962 the 3d Surgical Hospital (Mbl A) participated in "Operation Honeymoon", a mass casualty exercise in Baltimore, Maryland. The entire operation lasted approximately six (6) hours and consisted of a simulated explosion of a factory near a Baltimore Orphanage. More than 115 of the orphanage children were made up as casualties in a nearby park by the personnel of the 3d Surgical Hospital (Mbl A). The children were then rushed by ambulance and truck to the Johns Hopkins Hospital. The entire operation was made possible through the help and coordination of the Baltimore Civil Defense, Police Department, and Fire Department.

From 5 August to 18 August 1962 the unit participated in Swift Strike II attached to Red Forces in South Carolina. Total assigned strength during the operation was fourteen (14) officers and sixty-two (62) enlisted men. The mission was to receive, treat, and

evacuate simulated casualties of the Red Forces and to receive, treat, and evacuate actual casualties of the Blue Forces. Total inpatients were 59 and outpatients were 86. There were also 83 simulated casualties.

On 5 September 1962 the 3d Surgical Hospital (Mbl A) participated in the Fort George G. Meade, Maryland Passive Defense Plan. The unit was alerted to secure the billet area and proceed to a designated shelter on the Fort Meade reservation. There was a total of fifty (50) men required for the exercise, the majority utilizing the prepared underground shelter, the remainder using foxholes and shelter-halfs. The total time of the exercise was twenty-four (24) hours.

The Spring of 1963 was dry and windy, leading to dangerous forest fire conditions. The 3d Surgical Hospital (Mbl A) was called out almost weekly during April and May to support local fire companies in fighting the numerous fires that occurred. The men of this unit rallied bravely to the numerous pleas for help utilizing shovels, entrenching tools, and combat boots to put out the fires.

On 29 April 1963 this unit prepared a static display of a Field X-ray Unit, Surgical Equipment, and training aids in the training classroom for five (5) Staff General Officers of the Chinese Medical Service from the Republic of China. The period for the display and conferences provided for mutual exchange of ideas pertaining to the Army Medical Service of both countries.

During the late summer and fall of 1963 the 3d Surgical Hospital was alerted to provide medical support of local areas of racial disturbance.

During the year 1964 the 3d Surgical Hospital participated in the training of ROTC Cadets at Indiantown Gap Military Reservation, Pennsylvania and conducted medical training for newly inducted personnel, this included two (2) twelve week cycles. OJT proficiency and refresher training was conducted at Kimbrough Army Hospital, Fort George G. Meade, Maryland.

During the year 1965 the unit participated in Operation Pine Needle II at Camp A.P. Hill, Virginia during the period 10 March through 20 March 1965.

In May 1965 the unit was alerted for overseas movement to Vietnam. During the period May through 19 July 1965 all TOE equipment was TID and packed in 2½ ton trucks and loaded aboard flatcars at Fort Meade for shipment to Mobile, Alabama and loaded aboard the freighter Jane Lykes.

The Advance Party left Fort Meade on 1 August 1965 and were airlifted to Vietnam. The Main Body left Fort Meade on 4 August 1965 and was airlifted to Travis Air Force Base, California. The main body boarded the USS Mann and departed Oakland Army Terminal on 5 August 1965 and arrived in Saigon, Vietnam on the 23rd of August 1965. The unit was loaded on a LST at the mouth of the Saigon River for movement to Saigon for further movement to Bien Hoa arriving on the 25th of August 1965. All TOE equipment arrived on 7 September 1965 and the hospital was set up in full operation to receive patients by the 15th of September 1965. The first patient arrived on 18 September 1965.

The unit participated in Operation Garfield in the area of Ban Me Thuot. All equipment and personnel were loaded aboard C-130 Aircraft at Bien Hoa Air Base and air transported to that area. It took 18 aircraft to transport all personnel and equipment, and was the first surgical hospital in this theater to become Air Mobile. The unit remained in that area furnishing hospitalization for wounded personnel and also treating the Montagnard population through civic action. The unit completed the return movement to Bien Hoa 9 April 1966.

Since 18 September 1965 to 30 June 1966 the hospital has had 1,173 admissions and 640 major surgery cases.

Official Statement of Lineage and Battle Honors — Status - Active

Designation — Component

3d Surgical Hospital

Lineage:	Authorities
a. Constituted 6 May 1918 in the American Expeditionary Forces as Mobile Hospital No. 3	GO 70, G.H.Q., A.E.F. 6 May 1918
b. Activated 1 July 1918 at Paris, France	Station List; Returns
c. Disbanded 30 June 1919 at Camp Zachary Taylor, Kentucky	Returns
d. Reconstituted 1 October 1933 on the inactive list of the Regular Army as 3rd Surgical Hospital	AG 320.2(16 Aug 33), 18 Aug 1933; AG 320.2(19Oct36) Misc (Ret), 4 Nov 1936
e. Redesignated 3d Portable Surgical Hospital 25 May 1943	AG 322(21 May 43) OB-I-SPMOU-M 25 May 1943 (S)
f. Activated 1 July 1943 in Southwest Pacific Area	Ibid. Radiofr Hq, Brisbane Aust., C-3636, 2 Jul 43 (S)
g. Unactivated 15 Nov 1945 at Luzon, Phillipine Islands	Radio, CM-OUT-13155, 13 Oct 45 AG 322 (17Oct45) OB-I-E-M, 17 Oct 45 GO 270, Hq, US Army Forces, Western Pacific, APO 707, 2 Nov 45, Radio fr Hq CINCAFPAC, Manila, P.I., CM-IN-6861, 19 Nov 1945
h. Redesignated 3d Mobile Army Surgical Hospital, 21 March 1949	AGAO-I 322 G3n Res (10Mar49) CSGOT-M, 21 Mar 49
i. Activated 6 May 1949 at Fort George G. Meade, Maryland	Ibid; GO 113, Hq Second Army, Fort George G. Meade, Md. 15 Apr 1949
j. Redesignated 3d Surgical Hospital (Mobile Army), 10 February 1953	AGAO-I(M) 322 Gen Res (26Nov52) GI, 26 Jan 53, GO 11, Cp Pickett, Va. 9 Feb 1953

Campaign Silver Bands:

World War I

St. Mihiel	

World War II

Papau	GO 12, WD, 1946
New Guinea	GO 12, WD, 1946
Luzon	GO 12, WD, 1946

Decorations:

Distinguished Unit Streamer Embroidered - Papau	GO 21, WD, 1943
Phillipine Presidential Unit Streamer Embroidered "17 October 1944 to July 1945	GO 47, DA, 1950

RESEARCH IN PROGRESS BY USAMRTV

By: Lt Colonel Robert J. T. Joy

1. The following brief outlines of current research are provided to command surgeons for their information.

2. Malaria Research:

a. Malaria surveys. (Captain A.T.C. Bourke, MC, USAMRTV). Blood slides and histories of exposure, chemoprophylaxis, and protective measures are being secured on Special Forces and CIDG personnel at the Special Forces "A" Detachment at Plei Me (4 - 12 May); on the lepers taking DDS in leprosaria at Pleiku, Kontum, and Ban Me Thuot (13 - 18 May) and on the ROK Capital Division (1 - 8 June).

b. Evaluation of chloroquine resistance in indigenous populations (Captain A.T.C. Bourke, MC, USAMRTV). This is identical to the survey Captain Bourke performed in Thailand two years ago. The Montagnard population at Plei Me - Pleiku will be surveyed for parasitemia, treated with body weight graded doses of chloroquine, and blood smears taken 5 days later (4 - 18 May).

c. Study of use of di-amino, di-phenyl sulfone (DDS) as a malaria chemoprophylaxis. (Lieutenant Colonel R.J.T. Joy, MC, USAMRTV). This study has just been completed for the second time in the 1st Cavalry Division (AM) and a report is being written.

d. Clinical research (Major C. Cranfield, MC, and Captain L. Miller, MC). These two officers, and one enlisted technician (SSG Lebow) are on 60 days TDY from the USA Component, Medical Research Laboratory, SEATO, Bangkok, Thailand. They are studying, 1) Renal function in acute malaria patients, to include GFR, RPF, and Tm H_2O, 2) Body water distribution in acute and convalescent malaria patients, to include Cr 51, Fe 59, Na 22, and tritium isotope studies and 3) Ferrokinetics of the red cell in acute and convalescent malaria, to include isotope measurements of marrow iron uptake, red cell iron clearance, and the effects of folic acid on these parameters. These studies began on 26 April and will probably extend to the beginning of July. The work is being done at the 3rd Field Hospital in Saigon.

3. Plague Research: (Lieutenant Colonel J.D. Marshall, MSC, USAMRTV)

a. Diagnostic cultures and serology from cases of plague from all areas of Vietnam. This laboratory provides the only such diagnostic capability in-country, and evaluates diagnoses of plague whenever cultures are forwarded.

b. Evaluation of antibiotic resistance of various strains of Pasteurella pestis. Early evidence suggests that strains from some localities are streptomycin resistant. These studies are continuing.

c. Study of commensal plague. Rats and fleas are forwarded from all over Vietnam and cultural and serological techniques used to determine foci and incidence of infected vectors. A continuing program.

d. Survey of asymptomatic family members of plague patients for a carrier state of P. pestis. Early data have shown that mouse-virulent P. pestis can be cultured from the throats of completely asymptomatic family members. These studies are continuing.

e. Studies of fleas resistance to sommon insecticides (Major D.C. Cavanaugh, MSC, USA Component, Medical Research Laboratory, SEATO, Bangkok, Thailand). This officer is TDY for 20 days beginning 1 May. In collaboration with the Pasteur Institute, Nha Trang (a recent plague focus) a rat trapping program is providing fleas for WHO isecticide tests. The research is being done in Nha Trang, where Major Cavanaugh is a guest at the Pasteur Institute.

4. Enteric Bacteriology Research: (Colonel S. Gaines, MSC, USAMRTV)

a. Diagnostic support for enteric pathogens (cholera, typhoid, salmonellosis and shigellosis, etc.) is provided to all US military hospitals, to Saigon area civilian hospitals, and to Vietnamese provincial hospitals. Currently the laboratory is processing 50-60 specimens a day from cholera patients.

b. Study of enteric pathogens carrier rates of symptomatic and asymptomatic patients. This study is beginning at Cho Quan infectious disease hospital (civilian population) and will be extended to the 3rd Field Hospital (US military patients).

5. Clinical research on gastrointestinal disease (Major R. Olsson, MC, USA Component, Medical Research Laboratory, SEATO, Bangkok, Thailand). This officer and one enlisted technician (SFC Turner) have done clinical workups, intestinal biopsies (Crosby capsule) and gut function studies (fat, lactose, and xylose tolerance tests) on approximately 50 patients with malaria, dengue, scrub typhus, hookworm, sprue, hepatitis, and bacterial gastroenteritis being the disease represented in this patient population. This work began 10 April, will end on 14 May and was performed at the 3rd Field Hospital and the 85th Evacuation Hospital.

6. Surgical Research (Captain J. Collins, MC, TDY from the Department of Surgery, WRAIR, Washington, D.C.). This officer and six enlisted technicians are studying, 1) Biochemical alteration in wound shock, to include lactate and pyruvate levels, blood pH and clotting factors, 2) Wound infection and 3) The use of cyano acrylate plastic to prevent oozing from surfaces such as the liver. This program began on 23 April, will last for 90-120 days, and is being performed at the 93rd Evacuation Hospital.

7. Neuropsychiatric Research: (Captain P.G. Bourne, MC, USAMRTV).

a. Studies of correlation between adrenal cortical hormone excretion, psychological and psychiatric evaluation of subjects, and combat stress. The first phase, on helicopter ambulance crewman, has been completed. Research at a Special Forces "A" Detachment for two months began 1 May.

b. Comparsion of rates and types of psychiatric casualties in USA and ARVN troops. Interviews and record searches are being done at Cong Hoa Hospital (ARVN) and the 93rd Evacuation Hospital. This study is in progress.

c. Determination of rate and types of psychiatric illness in a hospitalized population of Vietnamese psychiatric patients. This is being done at Cho Quan Hospital in Saigon by interview techniques.

8. Febrile Illness Research: (Major J. Deller, MC, Chief of Medicine, 93rd Evacuation Hospital and Major P.K. Russell, MC, USA Component, Medical Research Laboratory, SEATO, Bangkok, Thailand). This study of the etiology of fevers of unknown origin in hospitalized patients began on 1 April and is a continuing program. Major Deller is responsible for the clinical aspects, Colonel Marshall and Colonel Gaines are doing the bacteriology at USAMRTV, and Major Russell is doing the virus isolation; virus serologies, and leptospira serologies at SEATO. In addition, paired serum samples from the 85th Evacuation Hospital (Captain T. Neff, MC), the 8th Field Hospital (Major C. Reilly, MC) and the 3rd Field Hospital (Major P. Bartelloni, MC) are forwarded to Major Russell for virus serologies.

9. Support of Research Activities:

a. Medical survey of VC prisoners. USAMRTV provides all laboratory and some personnel and supply support to this medical intelligence effort. USAMRTV also provides office space to the 521st Medical Intelligence Detachment (Captain P. Killenberg, MC).

b. USAMRTV provides laboratory and office space, and some equipment and supplies to the 61st Preventive Medicine Detachment for its entomology and parasitology survey programs (Major L. Johnson, MSC).

10. Collaborative work with Pasteur Institute and USAID Public Health Division:

a. USAMRTV provides support to the collaborative WRAIR-IP laboratory in plague and enteric disease (Paragraphs 3 and 4, above).

b. USAMRTV and USAID are assisting Pasteur in establishing a lyophilization laboratory for the Pasteur plague vaccine. This will eliminate the problem of short shelf life of the the present liquid vaccine. Building renovation has begun at Pasteur, the lyophilizer set up and pilot runs begun, and USAID purchased ancillary laboratory equipment will arive 1 June.

c. USAID and USAMRTV are serving as consultants, advisors and supporters for several other Pasteur Institute programs, such as intravenous fluid productions, laboratory technician training, the establishment of regional public health laboratories, and the establishment of a modern arbovirus laboratory.

11. If more information about any of these programs is required the author and members of the staff will be happy to present detailed briefings.

TREATMENT & PREVENTION OF CONTRACTURES OF THE QUADRICEPS & GASTROCNEMIUS MUSCLES

By: Major Carl Hertzman, MC

Soft tissue wounds of the extremities often lead to severe contractures, preventing a patient's return to duty. A program of progressive, early mobilization of the injured extremity is needed. This will usually involve a simple physical therapy program consisting of range of motion and strengthening exercises. Of particular concern are injuries to the quadriceps and calf muscles due to their frequency and subsequent disability if untreated.

Even small wounds in the calf involving the gastrocnemius lead often, in a few days, to severe contracture of 20-30 degrees plantar flexion. The muscle goes into spasm from the injury and this, as the days progress, steadily turns into contracture. The patient can only walk on the toes of the involved foot. It at all possible, the involved leg should be placed in a posterior shell at time of debridement. If this is not satisfactory, and the ankle is in considerable plantar flexion, a short leg cast can be used after the wound is sutured. We have found the best method of applying the cast is to place the patient in the prone position with the knee at 90 degrees; this allows the ankle to be dorsiflexed to a greater extent (the gastrocnemius crosses the knee joint and is a flexor of the knee). Extension of the knee will at first be somewhat painful but, with encouragement, the patient should obtain full knee extension; otherwise a flexion contracture of the knee will occur. If the ankle has not been brought too close to 90 degrees, the cast can be wedged in about two days and then removed in another two days. We have not had difficulty with the wound during this four days of casting. We prefer to wedge the cast posteriorly, leaving a small hinge anteriorly; the ankle is passively dorsiflexed and the open wedge filled in with a small roll of plaster. When the cast is removed, the patient is placed on stretching of the gastrocnemius. This can be done manually by another individual by grasping the heel with the palm of the hand against the sole of the foot and simultaneously pulling down on the heel and pushing up on the sole. The patient can stretch the ankle periodically during the day by standing facing a wall with the foot flat on the floor and leaning into the wall with the motion occurring at the ankle. Simultaneously a program of strengthening of weakened muscles can be carried out, but this is secondary (so long as the patient is ambulatory) to obtaining good range of motion. The patient should not be returned to duty until at least 10 degrees dorsiflexion has been obtained. Cases of minor tightness will not need casting and can start with an early program of stretching.

Even minor wounds of the quadriceps can lead to contracture of the muscle, limiting severely knee flexion. The muscle also rapidly becomes quite weak, a process called alienation. A graded grogram, to the patient's pain tolerance, of active and assistive knee flexion exercises should be begun within 2-3 days of injury. These should be performed in the prone position if possible; it is in this position that the degree of tightness will also be most accurately measured. The patient can also sit on the side of the bed or table and actively flex the knee. At the same time strengthening of the quadriceps and usually of the hamstrings should be started. Isometric exercises, straight leg raising; static extension exercises in which the patient sits, extends the knee and holds it in full extension for 20-30 seconds for 10 times are good early exercises. Later a program of weight lifting with the knee can be used. Bicycling, sports, running can be used to build the strength and endurance back to normal. The patient should not return to field duty until the knee has 110-115 degrees of flexion. Strength should, of course, be nearly normal.

MESSAGE FROM SURGEON GENERAL'S OFFICE

Vacancies exist for Army residency training in the following specialties: Anesthesiology, Pediatrics, Neurology, Psychiatry, Pathology, and Gastroenterology. Residency training begins 1 September 1966 and applications should be submitted under provisions of AR 350-220.

RESPONSE TO DISASTER

By: Captain W. F. Kenny, MC

On the morning of April 1, 1966 at approximately 5 AM a Citroen truck loaded with 500 lbs of "plastique" explosives was driven by terrorists to the front of the Victoria BOQ. In the process, they killed a Vietnamese guard and three MP's. The ensuing blast injured 141 out of 157 officers present in the building, wounding 45 severely and causing 1 death.

The casualties were brought to the 17th Field Hospital, Saigon. Aside from those immediately operated on, the patients either lay on cots or stood around waiting to be attended Many described their experiences as feeling somewhat dazed but able to react There were some who were injured because they had stood up to find out what was going on. Surprisingly enough, there were no immediate psychiatric casualties nor was there any evidence of emotional disturbance among the wounded.

They freely spoke about the incident and were mostly concerned about a buddy or roomate's whereabouts and well being. Two days after the incident however, an officer who had been in the building during the explosion was admitted to the hospital. He was quite agitated and depressed and developed a transient psychotic reaction which responded to supportive therapy, and a change of duty assignment. This prompted my curiosity as to just what was the emotional impact of such an experience. Accordingly I sent a questionnaire to all those billeted at the Victoria on the morning of the explosion. In it I asked them what they felt at the time of the incident, whether it affected their ability to react and just what after effects if any were there. I received replies from 78 officers and the following is a composite of their reactions.

Most of the officers in the building were grade captain and above and had over 5 years active duty. There were none who felt that their emotional state interfered with the ability to react appropriately. Many described a feeling of intense fear but most were too preoccupied with trying to protect themselves to notice anything. A few did observe that their reactions seemed to result more from what occured to them at the moment rather than from previous training. For the overwhelming majority an emotional response made itself felt sometime after the "all clear" was sounded. This ranged from intense anxiety to profound depressed feelings. For the first 24 hours the men described a somewhat dazed feeling which transformed itself into a hyper alert state lasting about two weeks. During this time they described a feeling of tension or nervousness at the slightest sound from the street. In addition a great many found themselves waking early in the morning. Of the 78 who replied there were none who at the end of the two week period felt that they had not returned

to normal functioning. There was a small but significant number who did relate that their motivation for continuing in service or for doing their job was much less.

In summary, we can say that the very traumatic experience such as the bombing of the Victoria BOQ produced negligible psychiatric casualties. There was one transient psychotic reaction and in most of the officers a two week period of anxiety and hyperalertness. Aside from the hospitalized patient there were no man hours lost due to emotional difficulties and as of this writing no permanent psychiatric casualties.

SUMMARY OF YEARS ACTIVITY

Reflections: by Major Harral A. Bigham, Major Edward R. Lesher and Major Gerald S. Rose, Plans and Operations Division, Office of the Surgeon, USARV.

As the North East Monsoon season is again in progress over the Republic of Vietnam, the three of us, who have been the Plans and Operations Staff Officers for the USARV Surgeon, are departing from the "Paris of the Orient" to go our various ways in future assignments.

It has been a challenging and worthwhile year, one fraught with frustration, but with a true sense of accomplishment in many areas. Due to the vagaries of assignments, the Plans and Operations Division was staffed under grade by three majors, one of whom wore a second hat as Executive Officer.

From the organization of the Office of the Surgeon, staffed with 2 officers and 2 enlisted men to today's TD authorization of 9 officers and 11 enlisted men, there has been more work to do than the staffing level would indicate. The growth of the USARV Medical Service has been geometrical, and is certainly continuing. At the outset, our problems were to determine what we needed to do, with what, when and to whom. Data available from which to make valid predictions of disease, non-battle injury and battle injury of a US Force in a counter-insurgency tropical environment was not just lacking, it was non existent.

It was necessary to extrapolate data from many sources to develop the casualty rate projections; FM 101-10 had to be consulted, but not relied upon. Knowledge of the French experience was valuable, but not wholly valid. From it all, computations were made, applied against projected troop strengths and a start was made toward the phased, orderly development of a medical troop list. Requirements had to be weighed against reasonable (sometimes unreasonable) availability. Troop strength projections have, in all cases, exceeded original estimates.

We feel that we have developed a reasonable medical troop list, one that can be expected to accomplish the medical mission in RVN.

In this regard, the following points must be emphasized:

a. The area of operations is neither a typical combat zone nor a communications zone. It is more like a COMZ with changing combat zones superimposed.

b. Because of the nature of the counter-insurgency, the missions of the various types of medical units vary from those stated in the TOE at least to some degree.

c. The size and type of unit requested or needed was not always available for deployment at the time desired, thus some arrived either earlier or later than would have been the optimum time.

Operationally, the problems have been multifaceted, monumental and sometimes messy, encompassing such problems as making do with less than that required, hospital construction, slippage of units, aircraft deadline rates, tactical support, television interviews of misinformed medical personnel (the lost hospital), stateside type medical care in a combat zone, immobile mobile surgical hospitals, medical regulating, personnel shortages as well as command and control structure and change.

At the outset, one medical battalion was commanding and controlling two hospitals and one dispensary plus scattered small medical detachments. The air ambulance units belonged to the aviation battalions and just sort of had an unofficial medical tie. (Today we have a integrated Army level medical service under command and control of the 44th Medical Brigade with clear channels of command and control established.) Our tactical medical units were initially only the 173rd Airborne Brigade, the Aussies, the 1st Brigade 101st Airborne Division, followed by the Big Red One, the 1st Cav, the ROKs and the 25th Inf. The medical family has grown and is growing.

To further vent our emotions on our department, we unhesitatingly state that there have been problems which could have been avoided. Administrative procedures in some units have been less that satisfactory, guidance from the Office of the Surgeon has in some cases, been completely ignored. Medical regulating policies have been unheeded. In spite of it all, cooperation by most units has been exceptional, and we feel that the US Army Medical Service has again accomplish a difficult task in an outstanding manner.

One area which we have been unable to reconcile, is the apparent inability of medical units arriving in Vietnam to accept temporary austere conditions and "get with it" and become operational. Why does a command and control headquarters take weeks or even months to become operational? In at least one case, a full half of a normal tour will be passed before a hospital unit becomes fully operational. It is agreed that the semi-permanent structures being used in Vietnam are desirable and enhance patient care, but we also know that the medical mission can be carried out at least temporarily without buildings.

It appears as if strong efforts should be exerted in the future to insure that all medical units assume an operational posture, albeit austere and temporary, to avoid wasting critical medical

resources or at least to have them available for use when the need arises.

Hospital locations have been a continuing problem that will definitely need attention. Medical command and control units here in RVN have been faced with a very unusual problem not encountered in other wars. Secure real estate in RVN is extremely limited and finding a large enough piece of "secure" real estate properly located, which would be available for an incoming hospital, is not as simple as one may think. Because our hospital units are not capable of fighting the VC's for the ownership of a piece of land, the medics are at the mercy of other commanders and planners who are reluctant at times to give up 20-25 acres of land in an existing troop complex for an Evacuation Hospital.

The 1965-1966 build up is still underway. The Army Medical Service has not failed to accomplished its mission. Those of us who are departing, wish you all good luck, a good year and continued success.

Bygone Days - IV

There was always something special about Neurosurgery Clinic day at the Hospital of the University of Pennsylvania. In the first place we got to see old friends, and in the second place we made some new ones, adding to our ward cases. On one very special day, however, Mrs. Zimmerman walked in, overnight bag in hand, and carrying a letter from her family physician: "Dear Dr. Grant; Mrs. Zimmerman has an abdominal tumor. Would you please arrange for her treatment on the Surgical Service."

Dr. Grant bought it outright, cold. He told Harry Starr to have her admitted to ward F and to notify the GYN service. Harry was protective, as a good chief resident should be, and said, "Let's make an x-ray. Maybe she's pregnant." This was really playing against the odds with a pituitary tumor. After all, she had been one of our favorite acromegalics for years, had had x-ray therapy, and was getting along with only minimal headache. Dr. Grant just stared him down and went up to the office. Undaunted, and before admitting her, Harry smuggled her in for a film; it <u>was</u> a pregnancy. Up we went with the x-ray. As we propped it against the view box, and as he turned in his chair, Dr. Grant knew he was licked. Never one to mince words, he called for Miss Quinn and dictated the following terse letter: "Dear Doctor; Your patient, Mrs. Zimmerman, indeed has an abdominal tumor, but it's the kind that, left alone long enough, will stick its head out at you and say 'Boo!'." That must certainly have been The Letter Of All Time To A Referring Physician.

That view box, by the way, has a story of its own. It was a gift to Dr. Grant from his staff, presented at a birthday party for him one afternoon just after a case. A blue ribbon with a bow had been tied around it, making it attractive, and it was deeply appreciated. Later, as we were standing around, relaxed and kidding one another, Nadine came up from the OR to join the party. Nad, of course, was our instrument nurse, a bit of thin, blonde electricity who was highly regarded by the football team, and who, I remember, wasn't above wearing a scrub dress that had a tatter in it here and there. Dr. Grant greeted her with his characteristic, broad smile, in the middle of which was the inevitable clenched pipe. Without a word he went to the view box, removed the bow, came back and pinned it on Nadine, stepped back, and then in the naturalness of the moment said to her, "You've got more there than I thought."

HAROLD ROSEGAY