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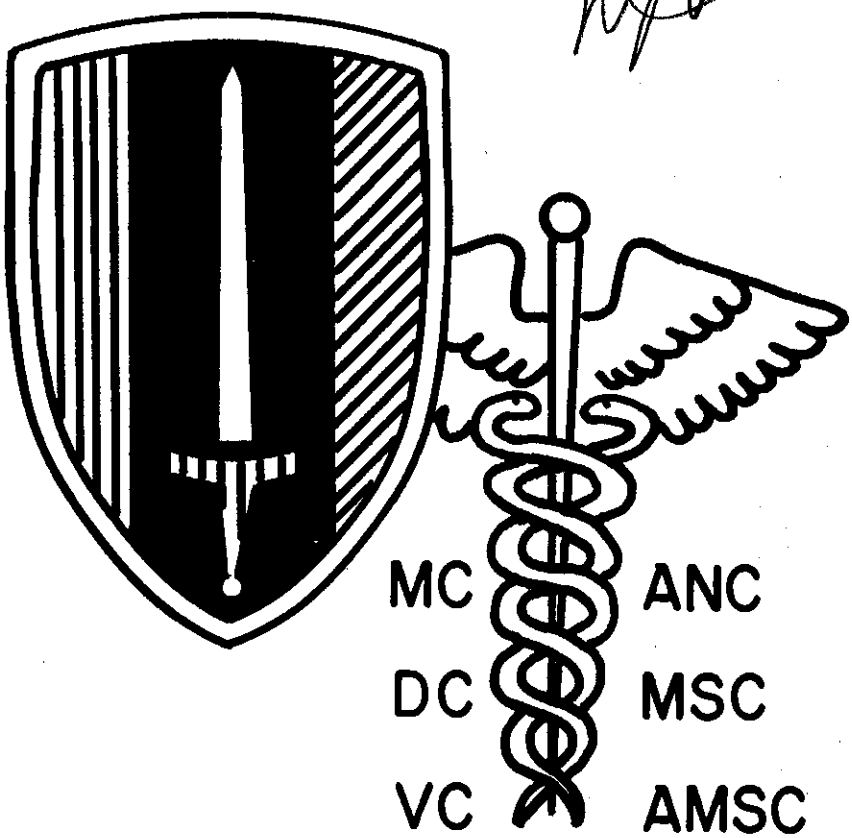

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15 June 1967

MEDICAL SERVICE

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1. PURPOSE: To provide information and assistance to medical services of the US Armed Forces in RVN in the interest of Army medicine.

2. GENERAL: This headquarters does not necessarily endorse the professional views or opinions that may be expressed in this pamphlet apart from official notices.

(AVHSU)

FOR THE COMMANDER:

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Chief of Staff

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AVHSU

12 June 1967

TO EACH MEMBER OF THE ARMY MEDICAL SERVICE
UNITED STATES ARMY, VIETNAM

On the eve of my departing this command for my new assignment in CONUS, I wish to take this opportunity to express to each of you my deepest gratitude and sincere commendation for your significant contributions to the accomplishments of the Army mission in Vietnam.

I salute your dedication and the untiring application of your special skills. Your devotion and sacrifices have provided eloquent and substantive meaning to the motto of the Army Medical Service: "To Conserve the Fighting Strength."

James A. Wier

JAMES A. WIER
Brigadier General, MC
Surgeon

USARV MEDICAL BULLETIN

Vol II No. 3 May-June 1967

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The 6th Convalescent Center, Cam Ranh, Vietnam

GRANULOCYTOPENIA COMPLICATING FALCIPARUM MALARIA THERAPY

Captain William M. Rogoway, MC*

Hematologic complications of the antimalarials are well recognized. Primaquine, DDS, and the sulfonamides all can produce significant hemolysis in individuals whose red blood cells are deficient in glucose-6-phosphate dehydrogenase. This generally occurs with prolonged administration of these drugs and at higher dosages than are recommended for treatment of malaria (1). The sulfonamides were early recognized to be a cause of agranulocytosis and thrombocytopenia in a small group of susceptible individuals. The mechanism of this idiosyncratic reaction is unclear, but the clinical picture is one of bone marrow and peripheral blood depletion of these formed elements (2). Pyrimethamine is a folic acid antagonist and megaloblastic changes can be demonstrated in the bone marrow associated with anemia in patients receiving therapeutic amounts of the drug for only slightly longer periods than are usual in the treatment of falciparum malaria. Leukopenia of moderate severity and thrombocytopenia have been noted in patients treated for prolonged periods with 50 mg to 75 mg pyrimethamine per day for toxoplasmosis (3). At least fifty cases of quinine-induced peripheral thrombocytopenia have been reported, and an immunologic basis for the peripheral destruction of platelets has been demonstrated (4).

Between 1 December, 1966 and 15 April, 1967, approximately 2200 patients with falciparum malaria were treated at the 6th Medical Center (Convalescent). Standard treatment consisted of quinine 650 mg tid for fourteen days, pyrimethamine 25 mg tid for three days, and DDS 25 mg a day was continued during hospitalization in those patients who had received it prophylactically while with their unit. A small percentage of patients was seen from other than the II Corps area who were not receiving DDS prophylactically. These patients were given sulfisoxazole 500 mg qid for seven days as well as quinine and pyrimethamine and did not receive DDS. Complications of therapy were minimal. Three patients developed transient episodes of petechiae or purpura toward the completion of quinine therapy associated with a significant decrease in platelets on peripheral smear and normal numbers of megakaryocytes in the bone marrow. This complication was self-limited and of short duration.

However, twelve patients developed profound peripheral granulocytopenia, eleven with associated fever and nine with significant thrombocytopenia. The mechanism appeared to be bone marrow arrest rather than peripheral destruction, and all but one of the patients became acutely ill. The ten patients on whom complete information is available will be considered further.

Nine of these patients were American and one Korean. All patients had falciparum malaria treated with pyrimethamine, quinine, and DDS. Two had had prior falciparum infections and had received these three drugs previously. Lowest peripheral granulocyte counts were noted twelve to twenty-eight days after the institution of therapy and in all but one case twenty-one days or less after initiating the treatment program. All absolute granulocyte counts were less than 400 granulocytes/mm3. Symptoms appeared concomittent with

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the low peripheral count, and the first abnormal blood count was most frequently ordered because of the patient's complaints. Nine patients had fever; in three this was associated with severe pharyngitis, and characteristic shaggy tonsillar ulcerations without exudation were seen in these patients. In the remaining six, no localizing site of infection was present. Appropriate cultures, including blood, were obtained in all patients. In only one was a culture positive for a known pathogen. This patient had several blood cultures positive for E. coli and responded to appropriate antibiotic therapy. Significant granulocytopenia was short-lived with counts returning to normal levels four to ten days after the first noted low count. Hematocrits of less than 30% were seen in seven patients at the time of granulocytopenia, but only one patient became profoundly anemic and this was associated with severe hemorrhage from the gastro-intestinal tract. Bone marrows were obtained at or close to the lowest peripheral count in seven patients. In no case was aplasia present. Six of the marrows had a striking maturation arrest in the granulocytic series. The seventh patient with a peripheral reduction in both granulocytes and platelets had a normal bone marrow. He was the only patient without associated fever. Seven patients had thrombocytopenia, six with clinical evidence of increased capillary fragility and two with frank hemorrhage necessitating blood transfusion. Four of these patients had bone marrow examinations while thrombocytopenic and three showed absent to markedly decreased megakaryocytes. The fourth patient, as noted above, had a normal bone marrow.

ILLUSTRATIVE CASE REPORTS

Case 4:

20 year old Caucasian male was admitted to the 6th Medical Center (Convalescent) on 17 December, 1966, eight days after the diagnosis of falciparum malaria had been made and treatment begun with quinine, pyrimethamine, and DDS. CBC at the time of diagnosis showed a hematocrit of 46 with a white blood count of 4400 including 65% segmented forms. Platelets were adequate. Physical examination on 17 December was normal except for a spleen palpable one centimeter below the left costal margin. On 19 December, he developed spiking fever associated with anorexia and headache. CBC remained normal, bacterial cultures and malaria smears were negative, and the fever resolved coincident with completion of quinine on 23 December.

The patient remained well until 29 December when he became febrile and developed a sore throat. Physical examination revealed large, tender bilateral anterior cervival adenopathy associated with multiple small shaggy ulcerations without exudation on both tonsils. Throat and blood cultures were sterile. Hematologic data is recorded in Table 1. Bone marrow examination on 30 December showed a moderately decreased myeloid:erythroid ratio with a maturation arrest at the myelocyte stage. Late white cell precursors were not seen. Erythroid maturation and megakaryocytes were normal.

Isolation precautions were taken, the patient's pharyngitis resolved, and he became afebrile on 2 January. DDS was given throughout this period.

Case 6:

21 year old Caucasian male was admitted to the 6th Medical Center (Convalescent) on 31 December, 1966, five days after beginning quinine,

pyrimethamine, and DDS for falciparum malaria. His course was uneventful until he developed fever without localizing symptoms or signs on 8 January. On the following day, he had significant epistaxis and noted lightheadedness on standing. Quinine therapy had been completed that morning. Physical examination revealed postural hypotension, a temperature of 101.6 F., petechiae on the hard palate and buccal mucosa, and hemorrhage at the gum margins. Posterior pharynx was normal. Spleen was not palpable. Petechiae were present in the right axilla and ecchymoses at the sites of venipuncture. Hematologic data are shown in Table 2. Bone marrow on 10 January showed a cellular marrow, only rare megakaryocytes, a slightly decreased myeloid: erythroid ratio with a shift toward immaturity in the myeloid series with a decrease in forms past the myelocyte. Giant metamyelocytes were present. Only an occasional poly was seen. Erythroid maturation was megaloblastoid. Bacterial cultures were sterile. Two units of fresh whole blood were administered and the patient was transferred to United States Air Force Hospital, Clark Air Base. His subsequent recovery was uneventful.

DISCUSSION

Granulocytopenia frequently associated with thrombocytopenia was seen in a small, but significant percentage of patients treated for P. falciparum with quinine, pyrimethamine, and DDS. None of these patients was receiving other drugs. This potentially fatal complication of therapy apparently has not been well recognized previously. Granulocytopenia was not seen in patients hospitalized for other illnesses during this period including vivax malaria which is treated with different medications.

When bone marrow examinations were obtained at an appropriate time, their interpretation suggested a central marrow arrest rather than peripheral destruction. One patient with extremely low platelet and granulocyte counts had a normal bone marrow. Interestingly, he was the single patient who failed to develop fever. The bone marrows uniformally were cellular with a paucity of late white cell precursors. This suggests a drug-related interference with white cell maturation at a relatively late stage. The fairly short duration of drug therapy may as well be responsible for this picture and the unusually rapid recovery phase. Two of the bone marrows showed megaloblastoid change and giant metamyelocytes. One of these two patients had three additional days of pyrimethamine therapy. Folic acid antagonism secondary to pyrimethamine cannot be excluded. However, both also demonstrated a maturation arrest of the white cell series, a finding not ordinarily associated with uncomplicated megaloblastic anemia.

Since all patients received pyrimethamine, quinine, and DDS, and no patients were rechallenged with these drugs, a specific offending agent cannot be incriminated. It seems unlikely that DDS was responsible since this had been taken prophylactically in all cases prior to development of malaria and in several instances was continued after the occurence of hematologic abnormalities.

These observations emphasize the importance of frequent blood counts during therapy of falciparum malaria as well as the importance of careful evaluation of unexplained fever in these patients.

SUMMARY

Twelve patients treated with pyrimethamine, quinine, and DDS for falciparum malaria developed granulocytopenia associated in nine instances with thrombocytopenia late in the course of therapy. Ten of these patients had adequate clinical histories for further evaluation. The granulocytopenia was of relatively short duration and was manifest in all but one case by sudden fever often with pharyngitis. Bone marrow examination showed maturation arrest of the granulocytic series. All ten patients recovered. Individual sensitivity to an antimalarial is postulated as the mechanism of development of this blood picture.

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TABLE 1

	Hct	WBC	S/NS	L	M	E	Plts
10 Dec	46	4400	60/4	35	1		adeq
22 Dec	33	5150	64	32		4	adeq
27 Dec	33	3350	14	84		2	adeq
29 Dec	33	4100	None Seen	97			adeq
30 Dec	33	4300	2	94			adeq
1 Jan	34	4800	10	86			adeq
2 Jan	39	5300	16	80			adeq
3 Jan	33	3900	76	24			adeq
12 Jan	42	8850	59	33	2	3	adeq

TABLE 2

	Hct	WBC	S/NS	L	M	E	B	Plts
29 Dec	44	7200	42/2	56				adeq
8 Jan	42	700	None Seen	100				rare
10 Jan	38	1100	2	94	4			rare
		two units whole blood						
11 Jan	45	2000	31/2	59	2	6		18000
12 Jan	42	5000	16/4	72		5		22000
13 Jan	40	9200	87	9		3	1	12000
24 Jan	40	7300	40	56	4			354000

A COMPARISON OF 300 MALARIA PATIENTS AND 300 NON-MALARIA SERVICEMEN

LTC Edward R. Murray, MSC*

This study consists of 300 malaria patients (100 per month) and 300 servicemen from combat units who did not contract malaria during their tour in Vietnam. It was conducted during the period January-April 1967. The study included the same areas of interest that were analyzed in our study of 500 patients (USARV Medical Bulletin, Jan-Feb 1967) and includes additional data on the medical treatment of the 300 malaria patients. Whereas the study of 500 patients was concerned with the use of Dapsone and malaria discipline in the field, the present study also includes information on the use of Chloroquine-Primaquine. This renewed interest in the troop use of Chloroquine-Primaquine was the result of an upsurge of Vivax patients admitted to the 6th Convalescent Center in the latter part of December 1966. Prior to that time, the patient load at the 6th Convalescent Center had been approximately 96 percent Falciparum and four percent Vivax.

The method was the same in both studies: individual and group interview conducted at the 6th Convalescent Center and at two replacement centers, the 526th Replacement Co at Pleiku and the 507th Replacement Co located at Cam Ranh Bay.

Analysis of the Two Groups:

Both the malaria group and the Control Group were from the same units; 1st Cav Dir (Air), 4th Inf Div, 25th Inf Div, and the 101st Abn Division. The number from each unit in each group corresponds closely except that we had a larger percentage of the 4th Division malaria patients than we did in the Control Group. This was due to the small number of 4th Division men returning to CONUS at this time.

Each group had five Commissioned Officers, no Warrant Officers, and 295 enlisted men in varying ranks. A majority of the Control Group had served 12 months in-country and 80 percent of the 103 patients who had been treated previously for malaria had served nine months or more, whereas the largest concentration of first-time malaria patients fell in the six to seven months range (42.1%).

A comparison of the use of Dapsone reveals the following differences between the two groups. 35.6 percent of the malaria patients took Dapsone daily during the 30-day period prior to becoming ill with malaria, whereas only 22 percent of the Control Group took a tablet every day. 22 percent of the malaria group indicated from one to three misses as compared to a 28 percent miss rate for the Control Group. 42 percent of the malaria group missed from four to 30 times which compares with a 50 percent miss rate for

*Formerly Social Work Consultant to the Surgeon, USARV, and Chief, Social Work Service, 6th Convalescent Center.

the Control Group. Like the initial group of 500 patients, very few of the malaria patients or the Control Group took Dapsone while on R and R or leave. A number of our patients had become ill right after returning from R and R but such was not the case with any of the servicemen from the Control Group. This is of particular interest because a much higher percentage of the Control Group went on R and R due to their longer period of service in Vietnam. A comparison of the use of Dapsone for the 10-day period preceding illness is also most interesting. 67.3 percent of the malaria patients claimed no misses during the period, whereas only 44 percent of the Control Group indicated no Dapsone misses. 18 percent of the malaria patients indicated from one to three misses which compares with a 33 percent miss rate for the Control Group. 14.6 percent of the malaria group missed from four to 10 times while 23 percent of the Control Group missed the same number of times. Of particular interest is the fact that 15 percent of the Control Group stated that they had missed all 10 days and 10 percent missed the entire 30-day period just prior to processing for the return to CONUS. These comparisons do not make a strong case for the effectiveness of Dapsone.

The other pharmaceutical preparation used as a prophylaxis measure is Chloroquine-Primaquine (C-P). This is also in tablet form and is to be taken weekly in addition to the daily Dapsone tablet. Since Dapsone is designed as a protective measure against Falciparum and C-P against Vivax, we studied the response to C-P for the 300 malaria patients and 169 of the Control Group (information on C-P was not obtained from the first 131 individuals interviewed). We chose the four-week period immediately preceding hospitalization or reporting to the replacement center as indicative of individual response to C-P. 80 percent of the patients stated they had no misses during the four-week period which compares with a 63 percent no-miss rate for the 169 individuals of the Control Group. The number missing two, three, and four times was also higher in the Control Group than in the malaria group. It may be that our patients were inclined to err in favor of less misses.

In an effort to analyze the C-P miss rate for the Falciparum patient and the Vivax patient we studied the groups separately as well as collectively. Here the Vivax patient did have the higher miss rate than did the Falciparum patient. 30 percent of the Vivax patients admitted to missing from one to four times during the four-week period. This compares with a 17 percent miss rate for the Falciparum patients and to a 20 percent miss rate for the combined groups.

A comparison of the primary defense against malaria, namely the use of mosquito nets and insect repellant coupled with the wearing of the complete uniform from sunset until after dawn revealed the following. 72 percent of the Control Group carried the bed net with them to the field at all times and 65 percent of the 300 servicemen stated that they consistently used the net. This compares with 61 percent of the malaria group possessing the bed net and 46.3 percent actually using the net on a consistent basis. The head net remains quite unpopular as only 21 percent of the Control Group took the net to the field with them and a mere three percent stated that they used it. The malaria group reported 28 percent possessing the head net and 13.6 percent using the net. In discussing the use of repellant

with both groups, it was quite apparent that the Control Group were more inclined to make liberal use of the spray and liquid repellant. Not that they were necessarily afraid of malaria but the repellant made them more comfortable and less likely to give away their night position by repeatedly slapping at mosquitoes or insects. Very few of either group understood the possible complications of malaria and a number of patients admitted that a second or third case of malaria was preferable to continued exposure to the enemy.

Analysis of Malaria Group:

A study of the 300 malaria patients reveals several sobering facts. 103 or 34.3 percent had been treated previously for malaria. This compares with a 19.6 percent repeat rate for the initial group of 500 patients. Of the 103 repeat patients, 70 were second-time cases, 23 were third-time cases, and 10 were being treated for the fourth time. 223 patients or 74.4 percent were diagnosed as having Falciparum, 57 patients or 19 percent were admitted as Vivax patients and 20 patients or 6.6 percent were diagnosed as having a mixed infection.

A steady increase of Vivax patients was noted with each group of 100 patients studied. Patients with Vivax (including mixed infections) totaled 19, 23, and 35 respectively in each succeeding group of 100 patients. This 25.6 percent compares with an approximate four percent census rate during

TABLE 1: Diagnosis and interval between attacks of malaria (103 patients).

Previous & Present Diag.	Interval between attacks by previous and present diagnosis. 1-14	15-30	31-60	Over 60	TOTAL
Falciparum to Falciparum	3	7	13	19	42
Falciparum to Vivax	1	5	6	3	15
Vivax to Vivax	2	3	4	6	15
Vivax to Falciparum	3	7	3	4	17
Vivax to Mixed	0	0	0	0	0
Mixed to Mixed	1	0	2	1	4
Falciparum to Mixed	0	3	2	3	8
Mixed to Falciparum	0	1	1	0	2
TOTAL	10	26	31	36	103

August-December 1966. As mentioned previously in the study, the missed C-P rate during the four-week period just prior to hospitalization was higher for the Vivax patient than for the Falciparum patient (30 percent to 17 percent miss rate). These rates are still lower than the 37 percent miss rate for the 169 members of the Control Group. Several possibilities are suggested; Vivax malaria may be more prevalent in certain areas, the miss rate for the weekly C-P tablet is on the increase, or a beginning resistance to the C-P as presently administered as a prophylaxis is taking place.

Analysis was made of the 103 repeat patients in reference to diagnosis and the time interval between illnesses. Some idea of the out-of-hospital relapse rate can be gained from Table I. If one chooses to consider similar infections and use a 14 day interval between discharge from the hospital and re-occurrence of symptoms leading to a diagnosis of repeat malaria, we have six patients or a two percent relapse rate. If one uses a 30 day interval, the number of patients totals 20 or a 6.6 percent relapse rate. The table can also be useful in analyzing the various diagnoses and the time interval between illness. For example, the relapse rate for Falciparum patients (both periods of treatment) is 6.3 percent based on a 30 day interval as compared to a 7.7 percent relapse rate for the Vivax patients.

Conclusions:

It is recognized that information gained by written questionaire or direct questioning is, at times, of questionable validity. However, based on the answers supplied by our two groups plus their overall attitude and voluntary comments, the following conclusions are offered for consideration.

1. Primary malaria control measures consistently carried out will decrease the incidence of malaria.

2. Sustained supervision at unit level is essential in primary malaria control and chemoprophylaxis.

3. Dapsone is of questionable value in prevention but may be effective for some individuals as a suppressant.

4. The effectiveness of Chloroquine-Primaquine was not clearly measured by this study.

5. The disregard that many servicemen have for both Dapsone and Chloroquine-Primaquine may well result in an increase in first-time malaria cases in the United States.

6. Since so many servicemen fail to carry out recommended anti-malaria procedures while in Vietnam, it is reasonable to expect that many will not follow the current recommended procedure of taking Dapsone daily for a period of 30 days and Chloroquine-Primaquine weekly for a period of eight weeks after they return to CONUS. Hence, another approach to preventing an increase in the incidence of malaria in the United States is indicated.

Appreciation is extended to SP5 Robert Harris, SP4 Jeffrey Perles, and the Social Work staff of the 4th Medical Battalion, 4th Inf Div, who assisted with this study.

INFECTIOUS HEPATITIS IN VIETNAM

Captain William M. Rogoway, MC and 1LT William H. Bailey, MSC*

Between 1 July 1966 and 30 April 1967, 208 patients were discharged from the 6th Convalescent Center with the diagnosis of infectious hepatitis based on a characteristic clinical picture and appropriate enzyme elevations. No attempt was made to distinguish serum from infectious hepatitis by history. All these patients had been followed from shortly after diagnosis until their clinical condition and liver chemistries returned to normal and they were discharged to full duty. Each patient had weekly SGOT, total bilirubin (including indirect and direct fractions), and alkaline phosphatase. When indicated, one-stage prothrombin time and Bromsulphalein retention were measured. Liver biopsies were not performed.

Because of the large volume of patients convalescing at any one time (between twenty and one hundred), no attempt was made to isolate them individually. They were hospitalized on two wards limited to infectious hepatitis, proper hand-washing procedures were enforced and segregated toilet facilities were used. All needles and syringes were disposable. Meals were served on the ward to all patients whose transaminase values were greater than 100; disposable trays and eating utensils were not utilized. Activity was progressively increased as liver function tests improved; complete bed rest was observed only in infrequent patients where it was a clinical necessity. Patients were sent to full duty when two consecutive sets of liver function tests were within the normal range.

As the Center enlarged and air-conditioned facilities became available, a steady increase in numbers of patients followed. This is illustrated in Figure 1. Table 1 compares patients with infectious hepatitis and 141 consecutive falciparum malaria admissions. The older mean age of the hepatitis patient is apparent as is the increased occurrence among higher ranking soldiers and officers. This can at least partially be explained by the greater number of support troops found in the hepatitis group. These men as well have readier access to non-military clubs and eating establishments. The greater percentage of Negroes found in the hepatitis group probably reflects a relative degree of protection against falciparum malaria afforded the Negro. This is discussed further elsewhere in this Bulletin. Table 2 shows a mean total period of convalescence of forty-six days from hospitalization to return to full duty. Table 3 indicates that peak transaminase values are but a poor prognostic indicator and that the length of convalescence is greatly dependent on factors other than this one measure of maximal parenchymal hepatic necrosis.

Twenty-two patients were transferred out-of-country during the study period. Twelve of these patients were evacuated solely because of an approaching DEROS or ETS. Another four were evacuated for further evaluation of unrelated medical problems. Four patients had enzyme elevations that were prolonged and persistent or had a deterioration in liver functions following initial improvement. It was felt that these patients with a more complicated course would require liver biopsy, prolonged convalescence, and consideration of corticosteroids. Only two patients were evacuated on an emergency basis.

*CPT Rogoway is Chief, Medical Service, and LT Bailey is Administrative Officer, 6th Convalescent Center, APO 96377.

One developed the characteristic clinical picture of hepatic coma two days after admission. The second had the sudden onset of deepening icterus, severe right upper quadrant pain, and intense pruritus associated with a nodular liver on palpation five days after transfer to our facility. It wae felt that a hepato-biliary malignancy or an extra-hepatic biliary obstruction was a likely complicating factor.

This retrospective study of 208 consecutive patients discharged to full duty after convalescing from infectious hepatitis within Vietnam confirms the safety of a program of limited isolation and early ambulation for both the hospital personnel and the patient. In the ten months evaluated, no cases of hepatitis developed in a member of the permanent party of the 6th Convalescent Center. No patient was rehospitalized with an exacerbation of hepatitis after being discharged. More than 90% of the hospitalized patients were returned to full duty from this Center, and only 2.6% of the total number were evacuated out-of-country for a cause directly related to the medical management of hepatitis. It seems feasible to permit such patients to convalesce in the combat zone and to anticipate a return to full duty in the vast majority of them.

FIGURE I

Hepatitis Discharges Per Month

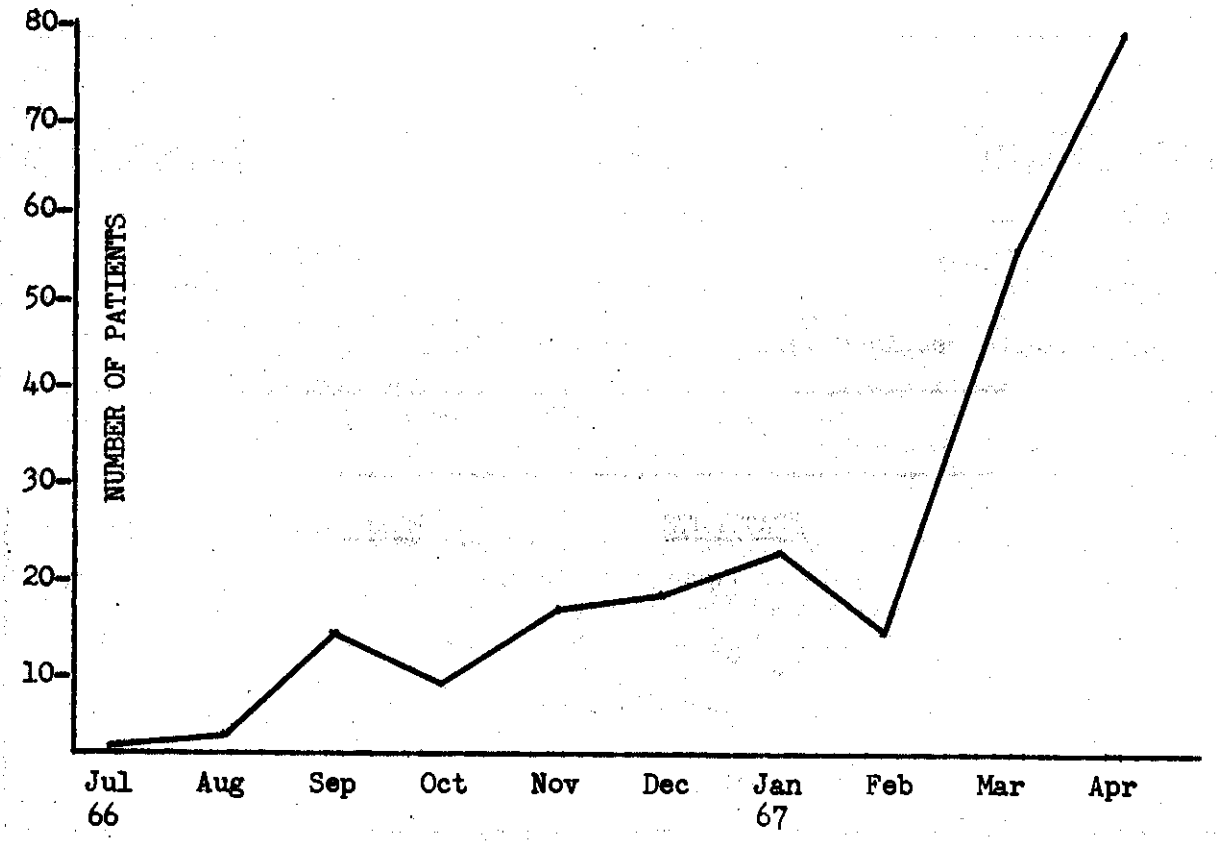

TABLE 1

	HEPATITIS (208)	%	P. FALCIPARUM (141)	%
AGE	23.8 Yrs		21.8 Yrs	
CAU	23.9 Yrs (164)	78.8%	21.8 Yrs (126)	89.4%
NEG	23.1 Yrs (44)	21.2%	21.7 Yrs (15)	10.6%
	# OF PATIENTS	BREAKDOWN BY GRADE		
E1-E4	143	68.8%	113	80.1%
E5-E9	47	22.6%	25	17.7%
OFFICERS & WARRANTS	18	8.6%	3	2.1%
	208	100.0%	141	100.0%

TABLE 2

MEAN DURATION OF STAY (Hepatitis)		
ADMITTING FACILITY	6TH CONVALESCENT CENTER	TOTAL HOSPITAL
8 Days	36 Days*	46 Days
(7.5)	(35.6)	(45.8)

* Six (6) patients received were by direct admission.

TABLE 3

SGOT	#PATIENTS	MEAN LENGTH TO DISCHARGE
500	48	41 Days
500-1000	65	40 Days
1000	95	46 Days
	208	

THE 6TH CONVALESCENT CENTER IN OPERATION

LTC Anton L. Hitzelberger, MC*

The 6th Convalescent Center was constituted on 23 February 1943 and was sent to the European Theater. It participated in the campaigns of Normandy, Northern France, Rhineland, Ardennes-Alsace and Central Europe. During its European tour the Unit was awarded the Meritorious Unit Commendation. Inactivated in November 1945, the Center was activated again in January 1955 and saw duty in Germany until inactivation in September 1958.

On 29 November 1965 the Center was again activated at Fort Sam Houston, Texas for eventual shipment to Vietnam. The advance party arrived in Vietnam on 23 March 1966 and the main body arrived on 9 April 1966 at Cam Ranh Bay. On 15 May 1966 the first patient was admitted. On 15 July 1966 the Center was moved from its initial site approximately 15 miles north to its present permanent location on the eastern side of the peninsula overlooking the blue South China Sea. By 15 September 1966, 1000 beds were available. Approximately 800-1000 patients are presently being admitted monthly.

More sophisticated buildings have been completed including a Laboratory, Emergency Room, Surgery, X-ray, Physical Therapy and some air-conditioned wards with an additional capacity of 175 beds. A large complex consisting of Red Cross, PX, Library and Special Services buildings was completed in early March 1967.

The mission of the Center is to provide continued care to medical and surgical patients including combat wounded, and to convalesce and recondition these patients within the established theater evacuation policy.

At the end of April 1967, 7500 patients had been admitted to the Center. Patients admitted to the Medical Section suffer mainly from malaria, hepatitis, intestinal disorders and other medical conditions. Surgical postoperative care is rendered by two surgeons to patients with extremity wounds, localized burns, sprains, and simple fractures as well as following explorations of the chest and the abdomen. In general, patients have been transferred to the Center as soon as their condition permits safe air evacuation from the various medical units located throughout Vietnam.

Nursing care is provided by Nursing Service consisting of both commissioned officers and enlisted corpsmen. The Social Work Section renders support to all patients. Several studies pertaining to malaria patients have been published by the Social Work Group. The Physical Therapy Section has been very active giving care to 100 or more patients daily. The Dental Section operates five chairs and gives all necessary care to include dental prosthetics.

*LTC Hitzelberger is Commander of the 6th Convalescent Center

Three X-ray units are presently in operation. Procedures such as IVPs, gall bladder studies, UGI series and barium enemas can be performed at the Center. The Clinical Laboratory now has the capability to perform all tests necessary to support the Center. 16,000 laboratory tests were reported in December 1966.

The following consultation services are available at the Center: General Medical, Hematology, Gastro-enterology, ENT, Physical Therapy and Surgery. Dermatology services are provided here by a specialist from the 12th Air Force Hospital.

Patients admitted to the Center come from all areas of Vietnam. US Navy and Marine Corps personnel are evacuated to us from the north. Over 800 Republic of Korea soldiers have been admitted here since mid-October 1966.

An integral part of the Center is the Reconditioning Battalion which provides administrative support for all patients. The work of the Reconditioning Battalion is described in a separate article in this Bulletin.

Much has been accomplished in one year to give the best possible care and to rehabilitate the sick and injured before they return to their Unit for combat duty.

GOAL OF THE 6TH CONVALESCENT CENTER'S RECONDITIONING BATTALION

LTC Lindsay E. Ferguson, MSC*

The American fighting man in Vietnam is faced with a demanding and strenuous challenge. The mission of the Reconditioning Battalion is to return each patient to his unit, physically and psychologically fit through participation in graded physical activities and ready to accept that challenge.

Accomplishment of this mission hinges on the attainment of the following objectives: acceleration of physical recovery, improvement of physical fitness and the attainment of total military fitness.

The Reconditioning Battalion is organized into a Battalion Headquarters and three (3) Reconditioning Companies. Other areas of Battalion responsibility include the gymnasium, beach, and patient supply and baggage. The Battalion Commander is responsible for planning, control, administration and coordination of the complete operation. These functions are accomplished through proper utilization of the chain of command and frequent Battalion Staff meetings.

*LTC Ferguson is Battalion Commander, Reconditioning Battalion, 6th Convalescent Center.

Physical and psychological reconditioning are provided bed patients as well as patients whose activities are limited due to disease or trauma. These patients are assigned by the physician to Company A. During this period, Social Work, Red Cross and Chaplain personnel help the patient solve his personal and administrative problems. The reconditioning program for Company A is very flexible due to the wide diversification of patient conditions. These patients are responsible for policing their Company area as well as their wards. After police call and medications, they are encouraged to participate in a wide variety of activities planned for the purpose of mental as well as physical conditioning. These activities include wading, reading, Red Cross recreation programs and a variety of Special Services activities.

Upon orders of the physician the patient is then transferred into Company B. In this second phase of reconditioning a soldier takes part in mandatory formations, PT sessions twice daily, organized athletics and various ward therapy programs. The general objective of this phase is to stimulate the individual's attitude toward physical activity and to re-establish his confidence in himself and his body. If he is to be an asset to his unit upon return to duty, this objective must be achieved.

The final phase of the reconditioning program is accomplished in Company C, also known as "Tiger Company". In this Company a total military atmosphere prevails. The men live in barracks and not wards. They take PT early each morning and then following breakfast are assigned various work therapy tasks and athletics. Often these are purposely strenuous in order to ascertain the patient's level of fitness and to assure that he will be able to function properly when he returns to duty with his unit.

Many of the "Tigers", as well as Company B patients, have made significant contributions to the 6th Convalescent Center. Some of their projects include area beautification, general painting and fix-up of facilities, painting of signs and numerous other light details. Also many of the "Tigers" with special skills have volunteered their services as electricians, medics and clerk typists.

Republic of Korea soldiers are patients in all three Companies of the Reconditioning Battalion. They follow the normal Company training schedule in addition to having their own special training in Karate and other forms of self-defense.

An integral part of the Battalion are the gym, beach and Special Service Section. These sections support the physical reconditioning program by providing excellent programs for patient recreation.

The Reconditioning Battalion has developed a successful patient reconditioning program through close coordination with the Professional Services and Nursing Service. It is this program that enables the 6th Convalescent Center to achieve its goal of returning to duty a soldier who is again able to accomplish his mission.

The 67th Evacuation Hospital, Qui Nhon, Vietnam

ACUTE AMEBIC COLITIS

Captain Philip S. Cifarelli, M.C.*

From 1946 to 1954, when the French were exerting a major effort in Vietnam, amebiasis was a common medical problem second in incidence only to malaria. Amebiasis continues as a frequently encountered disease among American troops here. The diagnosis may at times prove difficult, leading to delay in the onset of therapy with a consequent increase in complications and morbidity.

The purpose of this paper is to present one aspect of the spectrum of amebiasis, namely acute amebic colitis. Emphasis has been placed upon the approach to the problem of bloody diarrhea in Vietnam.

This study was a prospective analysis of patients presenting at the 93rd Evacuation Hospital with bloody diarrhea during the four month period from October 1966 through January 1967. A standard protocol was utilized with the patient's history, physical findings, hemogram, hepatogram, daily stool examinations and sigmoidoscopy findings noted on admission; this included a rectal swab through the sigmoidoscope which was immediately studied for trophozoites and cysts of Entamoeba Histolytica. In addition rectal, liver and small bowel biopsies were performed. A detailed description of the results of the biopsy data is being prepared for publication elsewhere.

Table 1 highlights the historical and pertinent physical signs noted on admission.

The admission lab data is presented in Table 2.

Table 3 presents the results of stool examination, smear of rectal swab, stool culture, sigmoidoscopy findings on admission and rectal biopsy data.

DISCUSSION

Acute amebic colitis usually has a gradual onset; lower abdominal cramps and bloody diarrhea are the predominant presenting complaints. Unlike shigellosis, constitutional symptoms are not common in the absence of complications of the disease. (2,3,4). Except for hepatic shock tenderness, which was noted in sixty per cent of the patients studied, the physical examination is unrevealing. Seven of the thirty two patients studied had temperatures of one hundred or above and four of these had temperatures greater than one hundred two degrees Fahrenheit.

The white cell count was less than 10,000 in eighty per cent of the cases studied. Two of the seven patients with white counts above 10,000 also had strongyloidiasis with a consequent eosinophilia. The sedimentation

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rate was normal in eighty-four per cent of the cases and none of the patients studied had an elevated SGOT or SGPT. Only one patient had a clearly elevated alkaline phosphatase (12 B.U.) and he had no manifest evidence of an amebic hepatic abscess.

The appearance of the stool reflects the pathologic process in the colon. All the stools examined in this study were grossly bloody and contained varying amounts of mucus, depending upon the severity of the case.

On microscopic examination particles of mucus and many red blood cells and white blood cells were seen. E. histolytica trophozoites in fresh saline preparations often contained erythrocytes; the type of motility of the trophozoite in a fresh preparation is a characteristic flowing movement into

TABLE 1

PATIENT NO	CHIEF COMPLAINT	ORAL TEMP ELEVATION	PALPABLE LIVER	HEPATIC SHOCK TENDERNESS
1	Lower abdominal cramps and bloody diarrhea	Neg	Neg	Neg
2	" "	Neg	Neg	Neg
3	" "	Neg	Neg	Neg
4	" "	Neg	Neg	Neg
5	" "	99.2	1Fb RCM	3+
6	" "	Neg	Neg	Neg
7	" "	Neg	Neg	Neg
8	" "	99.6	Edge	2+
9	" "	Neg	Edge	3+
10	" "	99.2	Neg	2+
11	" "	99.4	Neg	Neg
12	" "	103.0	Neg	2+
13	" "	103.0	Neg	Neg
14	" "	Neg	2Fb RCM	2+
15	" "	Neg	Neg	Neg
16	" "	Neg	Neg	1+
17	" "	100.0	2Fb RCM	1+
18	" "	100.4	Neg	Neg
19	" "	Neg	1Fb RCM	3+
20	" "	Neg	Neg	2+
21	" "	99.2	Neg	2+
22	" "	102.6	1Fb RCM	3+
23	" "	Neg	Neg	2+
24	" "	Neg	1Fb RCM	2+
25	" "	100.0	Neg	2+
26	" "	Neg	2Fb RCM	2+
27	" "	102.4	Edge	3+
28	" "	99.6	1Fb RCM	2+
29	" "	Neg	Neg	Neg
30	" "	Neg	Neg	Neg
31	" "	Neg	Neg	Neg
32	" "	Neg	Neg	Neg

a single blunt pseudopodium. The cysts of E. histolytica occasionally show one or more chromidial bars and several nuclei.

The routine stool examination as a means of diagnosing this disease leaves much to be desired. Our experience, and the experience of others (5) exemplify the difficulty connected with making a correct diagnosis by this means.

Only eight of the patients studied had positive stools whereas twenty-three patients had a positive rectal swab. The material obtained by the swab at endoscopy was placed on a glass slide in a drop of warm normal saline under a cover-slip and examined immediately after collection. The most suitable material for study is exudate from an ulcer; if there is no exudate the base of the ulcer or its wall should be scraped.

TABLE 2

PATIENT NO	WBC	HCT	SED RATE	SGOT	SGPT	ALK PHOS
1	6,500 P.L.	40%	11			
2	5,000	42%	5			
3	7,400	44%	20			
4	5,500	40%	15			
5	8,300	35%	51	32	23	3 B.U.
6	7,600	44%	9	16	9	3
7	18,000 64% EOS	49%	3	24	26	3
8	9,200	47%	39	28	36	3
9	13,500	45%		28	9	12
10	8,000	40%				
11	5,800	50%		28	11	3
12	6,800	44%	17	34	29	3
13	8,700	44%	11	17	3	3
14	9,100	45%	8	34	10	3
15	6,400	35%	6	26	30	3
16	7,600	46%	12	14	9	3
17	9,600	39%	2	20	15	3
18	9,800	40%	36	16	14	
19	12,000	44%	23	32	18	6
20	5,800	46%	11	20	8	3
21	4,700	47%	11	26		3
22	5,000	47%	9	24	5	3
23	8,300	46%	6	20		3
24	17,100 48% EOS	48%	4	24		6
25	7,300	48%	12	26	3	5
26	10,400	49%	5			
27	7,500	47%	17	24	8	3
28	14,000	46%	16	16	13	3
29	5,400	40%		32	19	3
30	9,100	42%	21	28	12	3
31	6,400	44%	12	25	6	3
32	26,100	41%	28	42		3

TABLE 3

CASE NO	STOOL	SMEAR OF RECTAL SWAB	CULTURE	SIGMOIDOSCOPY	RECTAL BIOPSY
1	Bloody, mucus no trophs or cysts of E. Histolytica	Cysts of E. Histolytica	No pathogens	Edematous, hyperemic mucosa with small ulcers	Superficial ulceration with acute & chronic inflammation
2	" "	" "	" "	" "	Superficial ulceration, chronic inflam.
3	" "	Trophs of E. Histolytica	" "	" "	" "
4	" "	Cysts of E. Histolytica	" "	" "	" "
5	" "	Trophs and cysts, E. Histolytica	" "	Hemorrhagic friable mucosa with ulcers	Superficial ulceration and acute inflam.
6.	" "	Precysts & cysts, E. Histolytica	" "	Multiple small papular lesions to 18 cm, mucosa normal	Minimal acute inflammation
7	Bloody,mucus;larva of S. Stercoralis	Trophs and cysts, E. Histolytica	S. sonnei	Discrete ulcers with normal intervening mucosa	" "
8	Bloody, mucus; no trophs or cysts of E. Histolytica	No trophs or cysts E. Histolytica	No pathogens	" "	Minimal chronic inflammation
9	" "	Cysts of E. Histolytica	" "	Edematous friable mucosa	" "
10	Bloody, mucus;cysts of E. Histolytica	Cysts of E. Histolytica	No pathogens	Hyperemic mucosa with discrete ulcers	Acute and chronic inflammation
11	" "	Precysts and cysts E. Histolytica	" "	Hyperemic mucosa with discrete ulcers	" "
12	Bloody, mucus; no trophs or cysts of E. Histolytica	No trophs or cysts E. Histolytica	" "	" "	" "

TABLE 3 Cont'd

CASE NO	STOOL	SMEAR OF RECTAL SWAB	CULTURE	SIGMOIDOSCOPY	RECTAL BIOPSY
13	Bloody, mucus;cysts of E. Histolytica	Trophs & cysts E. Histolytica	No pathogens	Petechial sized ulcerations	Superficial ulceration acute & chronic inflam. trophs, e. Histolytica, on edge of ulcer
14	Bloody, mucus; no trophs or cysts of E. Histolytica	No trophs or cysts of E. Histolytica	" "	Numerous ulcers with normal intervening mucosa	" "
15	Bloody, mucus; cysts of E. Histolytica	Trophs & cysts E. Histolytica	" "	Hyperemic edematous mucosa with no ulcer	Minimal inflammatory reaction
16	" "	Trophs of E. Histolytica	" "	Discrete ulcers with normal intervening mucosa	No microscopic lesion
17	" "	" "	" "	Hyperemic mucosa discrete ulcers	Superficial ulceration with acute inflammation trophs in edge of ulcer
18	Bloody, mucus; no trophs or cysts of E. Histolytica	Cysts of E. Histolytica	" "	Hyperemic mucosa, discrete ulcers, necrosis and acute inflammation	Superficial ulceration with acute inflam. trophs in edge of ulcer
19	" "	No trophs or cysts, E. Histolytica	" "	Hyperemic mucosa	Minimal chronic inflammation
20	" "	Precysts & cysts, E. Histolytica	" "	" "	No microscopic lesion
21	" "	No trophs or cysts, E. Histolytica	" "	Hyperemic mucosa and discrete ulcers	Superficial ulceration and chronic inflam.
22	Bloody, mucus;cysts of E. Histolytica	Trophs of E. Histolytica	" "	" "	Chronic inflammation interstitial hemorrhage

TABLE 3 Cont'd

CASE NO	STOOL	SMEAR OF RECTAL SWAB	CULTURE	SIGMOIDOSCOPY	RECTAL BIOPSY
23	Bloody, mucus, no trophs or cysts of E. Histolytica	Cysts of E. Histolytica	No pathogens	Hyperemic, edematous mucosa with multiple small ulcers. Normal mucosa beyond 15 cm	Superficial ulceration acute inflammation in edge of ulcer
24	Bloody, mucus; trophs E. Histolytica	Trophs of E. Histolytica	" "	Hyperemic friable mucosa	Marked chronic inflammation
25	Bloody, mucus; no trophs or cysts of E. Histolytica	No trophs or cysts, E. Histolytica	" "	Hyperemic friable mucosa with exudate	" "
26	Bloody, mucus; cysts, E. Histolytica	Cysts of E. Histolytica	" "	Punctate hemorrhages	Acute & chronic inflammation
27	Bloody, mucus; no trophs or cysts of E. Histolytica	No trophs or cysts of E. Histolytica	S. sonnei	Hemorrhagic mucosa	Superficial ulceration acute & chronic inflammation
28	Bloody, mucus; no trophs or cysts of E. Histolytica	Precysts of E. Histolytica	No pathogens	Discrete ulcers with normal intervening mucosa	Mild acute inflammation
29	Bloody, mucus; cysts, E. Histolytica	Cysts of E. Histolytica	" "	" "	" "
30	Bloody, mucus; no trophs or cysts of E. Histolytica	" "	" "	" "	" "
31	" "	No trophs or cysts, E. Histolytica	" "	Hyperemic, edematous mucosa with ulcers	Acute & chronic inflammation
32	" "	" "	" "	Pin point hemorrhages hyperemic mucosa	" "

Sigmoidoscopy was performed in the knee chest position in all patients. The patient kneels on a chair which is adjacent to a regular army cot, then he places his ear down on his outstretched arm on the cot. The advantage of this position is that the instrument is more easily passed and it is usually unnecessary to introduce air, which produces added discomfort. The obturator is removed just beyond the anus and a gentle force is applied to advance the instrument, which is under constant observation.

In the cases studied it was seldom necessary to go to 25 cm in order to find pathology. Indeed, all the patients had lesions in the rectum and or rectosigmoid. One case had a classical proctitis with normal mucosa beyond the rectosigmoid.

A cathartic or a preparatory enema was not used in any of these patients since it was felt that such procedures would alter the actual state of the colonic mucosa. The sigmoidoscopy examination was usually performed in the morning.

Nine patients in this series had negative stool and rectal swab examinations. They were diagnosed as acute amebic colitis on the basis of Sigmoidoscopic findings on admission. Seven of these patients responded well to the treatment program. The last two patients studied - cases thirty-one and thirty-two, failed to respond to the anti amebic treatment and were then felt to have ulcerative colitis. These two cases improved following steroid therapy.

The rectal biopsy was diagnostic in only three cases where trophs were seen. The biopsy results ranged from no microscopic lesions in two cases to mild acute inflammation and to ulceration with necrosis and acute and chronic inflammation.

The therapeutic program instituted in all cases was as follows: Diodoquin 650 mgm t.i.d. for 21 days, Chloroquine 500 mgm b.i.d. for 2 days then 500 mgm h.s. for 12 days and Tetracycline 500 mgm q.i.d. for 10 days. All drugs were given concomitantly. In thirty of the patients studied there was a response to therapy within forty eight hours; by three to five days the patients were asymptomatic. By the end of the first week of therapy the colonic mucosa was approaching normal in the severe cases and entirely normal in the milder cases.

SUMMARY

Thirty-two cases of bloody diarrhea among United States soldiers in the Republic of Vietnam are presented. Thirty of these cases were diagnosed as acute amebic colitis. The last two cases were felt to have ulcerative colitis.

The importance of Sigmoidoscopy with rectal swab examination is emphasized as an invaluable aid in the evaluation and diagnosis of the patient with bloody diarrhea.

ACKNOWLEDGMENT

A special note of thanks is given to Captain Larry E. Douglas, Commanding Officer of the 946th Mobile Medical Laboratory, for his assistance with the biopsy material.

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SALT DEPLETION SYNDROME

LTC Foster H. Taft, Jr., MC*

During the past two months visiting various combat units in the Third Corps area I have heard numerous comments from commanders concerning the lack of stamina, decreased sense of awareness and decreased alertness of the troops in the afternoons, particularly while participating in operations requiring considerable physical exertion.

Many unit commanders have expressed, and the medics have noted, that most booby trap and anti-personnel mine casualties are occuring between the hours of 1300 to 1800. This time frame spans the hottest time of the day and most of the troops who have been physically active in the morning seem to wear down physically and mentally during the afternoon hours.

These symptoms which I have been able to observe personally in a few instances and in other instances described to me by the attending physicians are those associated with "salt depletion". (Loss of salt in excess of water or water retained in excess of salt.)

"Salt depletion" can be relative. That is, there may be actual salt loss beyond normal amounts or there may be an excess of water in the body with insufficient salt available to keep the normal osmotic pressure and salinity in the body fluids.

"Salt depletion" and sodium loss in particular results from excessive perspiration in tropical climates coupled with insufficient salt intake and a relative fluid excess. The salt loss of the body increases throughout the day as the activity of the individual increases and also as the heat of the day increases.

The following are the symptoms of "salt depletion" where a relative Na deficit exists compared to total body fluids and a state of decreased osmolality exists in man:

a. Fatigue and drowsiness
b. Some decreased muscle strength
c. Decreased endurance to physical and mental stress
d. Prolonged reaction time
e. Decreased mental alertness
f. A sense of dullness and indifference in attitude

Decreased response and dulling of the sensorium in all its faculties occur to include seeing, hearing, feeling, touching and smelling. The more severe forms of "salt depletion" lead to what we know as heat exhaustion. This is a salt and water depletion syndrome with a primary deficit relative or actual, in the Na ion, characterized by the above symptoms and its more severe forms may be expressed as unconsciousness and convulsions.

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In discussing the mechanism of the syndrome it may be that the deficit in volume of body water, or some expression thereof, is a stimulus for secretion of ADH despite hyponatremia and the volume deficit may influence renal function in some fashion independent of ADH, to conserve water. The decrease in effective osmolality of the extracellular water will have promoted movement of water into the cellular compartment. Thus, the deficit in volume in the extracellular phase is greater than the total external loss. This dilution of the intracellular fluid may be expected to have untoward consequences with respect to cell functions. These latter are most clearly expressed on a clinical level by a clouded sensorium and the symptoms expressed above, which may progress to frank coma and may be accompanied by seizures.

Sodium salts represent almost all the solutes that usually contribute to the effective osmolality of the extracellular fluid.

The rate of sweating is a function of osmolality of the extracellular fluid compartment and is diminished by an increase in the effective osmolality of the body fluids. Thus, if there is sufficient sodium ion there is less sweating. Conversely, if there is deficient sodium there is more sweating.

A review of 90 days of salt consumption in a group of troops plagued by booby trap incidents in the afternoon hours revealed an average salt tablet consumption of 0.7 tablet per man per day. The observations made by their commanders and their medics coupled with a known low salt intake lead one to the conclusion that we are seeing "salt depletion" syndrome in some of our fighting troops.

I am sure, but cannot guarantee, that an increase in the salt consumption to a minimum of 4-6 tablets per man per day will show itself in more efficiency of troop operations and a concomitant decrease in injuries and accidents because the sensorium of the troops will not be dulled by hyponatremia. They will be more alert and responsive to their situation and should be less likely to be injured by booby traps and accidents.

While commanders in the field can harp on "safety" and "being careful and cautious" to their men, if the men are mentally and physically incapable of responding, their admonitions go for naught. I strongly recommend that division and battalion surgeons urge field commanders to insure their troops take sufficient salt to prevent the symptoms and effects of the "salt depletion" syndrome.

Correction

It was erroneously stated on page 48 of Vol II No 1, the Jan-Feb 67 issue of USARV Medical Bulletin, that the 12th Evacuation Hospital came from Fort Ord in April. Correct information is that the 12th Evacuation Hospital came from Fort Ord in August 1966.

THE AIRMOBILE SURGICAL SUITE

LTC Henry A. Leighton, MC*

Lieutenant Colonel Jueri Svjagintsev introduced the airmobile surgical suite to the 15th Medical Battalion, 1st Cavalry Division in January, 1966. This innovation originally consisted of an X-ray compartment, a surgical scrub enclave, an instrument sterilization and storage area and a space for two operating tables plus lights, suction, and anesthesia equipment. All of this was incorporated within the detachable pod of a CH-54 "Flying Crane" helicopter. The cranes belong to the 478th Aviation Company - presently the only unit of its kind in the world. This company is attached to the Support Command of the 1st Cavalry Division.

The original purpose of this surgical pod was to provide a cool, clean operating room that could be readily transported with an airmobile medical company to any tactical area of operations in Vietnam. It was presumed that the cavalry brigades would be operating out of contact with the supporting mobile surgical hospitals and evacuation hospitals. Also, the medical battalion of the cavalry division then included one board-certified and one board-qualified surgeon as well as four nurse anesthetists. A need for a division surgical capability seemed evident. However, the advent of the Second and Eighteenth Surgical Hospitals at An Khe and Pleiku respectively plus the establishment of two evacuation hospitals in Qui Nhon provided sufficient proximate surgical facilities to meet the casualty load of the 1st Cavalry Division from 1965 to the present.** These facilities were located well within thirty minutes of helicopter flying time of the cavalry clearing companies; and these hospitals contained better equipment, improved plant, and more sophisticated staffs.

Consequently, the surgical pod was not used extensively although it was regularly deployed throughout the central highlands of Vietnam. It has served primarily as an improved resuscitation and minor surgery unit. It does not appear that future conditions in Vietnam will often require the use of this pod in the manner originally intended.

Nevertheless, the airmobile surgical pod remains a revolutionary concept worthy of further consideration. A mobile surgical hospital in the field could utilize the surgical pod. It is still possible, if unlikely, that a cavalry brigade and its support elements might be isolated by terrain and weather for a prolonged period from third echelon

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** A separate battalion task force has been operating under IFFV at Phan Thiet since September 1966. Patients derived from this operation are sent to the 8th Field Hospital in Nha Trang.

medical facilities - especially if deployed in a different, more remote theater of operations. In this instance, a clearing station could utilize the pod effectively if a surgical KA team were attached to the medical company. Therefore, some thought has been devoted to improving and developing this concept. Certain changes in the organization of the pod are already in effect. The X-ray compartment has been converted to a patient prep area, and the X-ray apparatus has been returned to a tent location. Since the pair of operating tables were placed too close together to permit simultaneous surgical procedures, one of these tables was removed. These changes and deletions have reduced the power requirements of the pod; and this has led to another significant change. The power pack for the pod has been a separate wheel - mounted 15KW generator which is too large to be attached to or contained by the surgical suite. This generator is also too bulky to be carried by the usual Army Air Transport craft. It cannot even safely be sling-loaded by the Crane Helicopter. For this reason it must be transported by large Air Force craft (such as the C-130) which operate only on improved air strips. This has resulted in delays in putting the surgical pod into operation. Now, a 10KW generator transportable by crane or Chinnook will suffice for power, and the operational readiness of the pod has been enhanced.

The USARV Surgical Consultant has recommended that the patient-prep space be eliminated with rearrangement of the operating tables so as to divide the pod into two distinct operating areas. If his recommendation were incorporated and the hull of the pod were reconstructed this would certainly double the present O R capacity of the pod.

It is conceivable that in the future as more CH-54s are available more pod components might be converted for medical purposes: additional pods might include a recovery unit and an X-ray - laboratory - CMS combination. This would provide a more complete surgical suite. A possible research development would be the construction of expansible pods (analagous to those of the MUST) adaptable not only to the Crane Helicopter but to large truck beds or to railroad flatcars for outstanding versatility and mobility.

In conclusion, it appears feasible that in several years a small fleet of airborne hospital pods containing the center of a surgical hospital could be developed and made available for deployment, by the US Army to any area in the world. In the immediate future, it is possible to move a functional, clean and cool operating room to any place in Vietnam where a CH-54 can land.

Diagnosis of the Month: Rear Cyst

DIVISION MEDICAL SUPPLY WITHIN THE 1ST INFANTRY DIVISION

CPT Harold S. Pascal, MSC*

"For want of a nail a shoe was lost, for want of a shoe a horse was lost, and for want of a horse a rider was lost." Thus, Benjamin Franklin knew long ago that even the smallest and most insignificant item could spell the difference between defeat and victory. This axiom holds in Vietnam because logistics may mean the difference between defeat and victory.

In the 1st Infantry Division, medical supply is the responsibility and the mission of the 1st Medical Battalion. The medical battalion has personnel assigned who are trained to perform this job. It was necessary to modify TO&E 8-36E in order to fulfill the mission here in Vietnam. Four additional medical supply specialists were added to assist in the handling and shipment of medical supplies. One 65 cu ft refrigerator and one 12 cu ft refrigerator were added in order to store additional drugs, biologicals, and X-ray film. The 1st Infantry Division operates from four separate base camps; each is a semi-permanent type location. In order to provide medical support to each base camp, one medical company is assigned to provide area medical service and support to the base camp and direct support to the infantry brigade.

It is the responsibility of each medical company to provide medical supplies to each infantry battalion and other units located in the medical company's area of responsibility. The medical platoons of the infantry battalions submit informal medical supply requests, consisting of a list of supplies needed, directly to the nearest medical company providing medical support. Federal stock numbers are not necessary when submitting this list. The medical company receives the list and issues all requested items which are on hand while the unit representative is waiting.

A "Due Out" is given for any item not on hand, and the unit returns in a few days for the item. As soon as the item is received by the medical company, the unit is notified. Only the four medical companies organic to the medical battalion and division artillery medical section are authorized to requisition from the division medical supply. This means there are only five customers that draw supplies from the division medical supply warehouse, which reduces the number of requisitions received.

Supplies are shipped from the division medical supply area to the medical companies directly by air. Aero-medical helicopters are utilized in most instances; however, when this is not possible, tactical Army aircraft are used as well as US Air Force aircraft.

Medical supply within the medical battalion is the staff responsibility of the S-4. This individual is a medical supply officer (MOS 4490), who is in the best position to supervise the program due to his experience, training, and his accessibility to communications. He should be co-located with the battalion S-3 when possible.

*S-4, 1st Medical Battalion, 1st Infantry Division, APO 96345

In the 1st Medical Battalion, the S-4 is located in the same building with the S-3 and communications section. He is aware of the tactical situation at all times, and is consulted on all contingency plans. He is able to determine or estimate where and when medical supplies will be needed. Coordination on all operations begins with a briefing by the S-3. In turn the S-4 makes recommendations to the battalion commander as to the medical supply support required and if it will be necessary to increase the stockage levels of any of the medical companies. This increase in stockage can be accomplished gradually, thus allowing time for the supporting medical depot to requisition supplies.

On all large multi-brigade operations, the S-4 will personally contact the advance platoon commander of the 32nd Medical Depot. This liaison visit serves a two-fold purpose. First, it gives the depot an idea of the operations and what support will be required; and second, it gives the depot a chance to alert the base platoon to expect to receive priority requisitions on certain items. At no time are dates or names of operations discussed.

A lieutenant, MSC, with medical supply training is in charge of the division medical supply section, and is responsible for insuring that supplies are requisitioned, stored, and issued. He makes frequent liaison visits to the medical depot to discuss any problems that arise. This face to face coordination has proved to be an excellent method of solving some of the problems concerning the receipt of medical supplies.

In August 1966, the division medical supply was still operating from tents, which made it difficult to locate and store items. In general, it was an antiquated and difficult system to operate. A building program was immediately started in order to move all the supplies out of tents and into buildings. In September 1966, the basic part of the building was completed when two buildings were available. One is a 20x48' building which is utilized as an office and "loose issue" facility. The second is a 20x96' building serving as the bulk storage warehouse. As the supplies were relocated from the tents to the buildings, they were inventoried and put in stock number sequence. Additions were made to the warehouse and surrounding area to include a dock area to receive supplies and store them for issue, and a medical repair shop on one end of the building. Storage became a problem as our supply levels increased, and CONEX containers were placed adjacent to the warehouse to facilitate storage and issuing of bulky items.

Within the 1st Infantry Division the key to a good supply system is a good record system, one which reflects the status of the supplies on hand, those that are due in and due out, and when to reorder. We utilize the same system that is used in a medical depot only on an informal basis which is modified to meet our particular needs. This modification was in determining the requisition objective for an item. Since the order and shipping time is not a constant, but rather a variable here in Vietnam, we substituted the actual quantity requisitioned during prior operations. This gave us a requisition objective that was realistic, and one which met the demands of the units requiring the items. We selected 25 fast moving items that were consumed during combat operations, and this list was given to each medical company (Figure 1). It was so arranged that items required

could be requested over the radio in a coded manner, without spelling out the name or using the Federal Stock Number. The coded list was required to minimize the time of radio transmission over the busy battalion command net.

In order to record the quantity of supplies utilized during brigade or larger combat operations as differentiated from those utilized during times of less intense hostilities, a record was kept of all supplies used during each major operation. At the end of each operation this list was reviewed and items were marked as to heavy, or light, combat use. This enabled the supply section to set up a realistic requisition objective for each item based on the quantities consumed during operations. Also taken into account was the size of the combat force supported and the duration of the operation. Figure 2 shows the relationship between supplies received and the quantities shipped forward by air and truck. It can be seen that on an average 17,265 pounds more are received than shipped. These supplies insure us that if a sudden committment of combat troops is made, sufficient supplies will be on hand to support the operation.

A daily and monthly total is kept for each of the medical companies and division artillery as to the weight and cube of medical supplies shipped to them. This provides an indication of the activity in an area and what supplies are being issued.

Medical resupply from the division base camp to the forward medical companies is normally by air, utilizing aeromedical helicopters. There are times when these medical aircraft are committed, and it is then necessary to utilize other means for transporting supplies. At irregular intervals, convoys are dispatched to the forward base camps and supplies are transported in this manner. During operations where a section of clearing is moved forward to support a brigade or larger force, all resupply is by air from the division base camp.

Another function of the 1st Medical Battalion is organizational maintenance of all medical equipment in the Big Red One. Since the division is dispersed and located in four separate base camps, the medical equipment repairman visits each location once a month to make repairs and perform preventive maintenance. What cannot be repaired in the division is evacuated to the medical maintenance facility of the 32nd Medical Depot.

Each medical company maintains a 15 day level of medical supplies. The clearing platoon performs the medical supply receipt, issue, storage, and ordering. Items are stored by the companies in stock number sequence. The storage area differs with the facilities available to the unit. The main idea is to be able to store the items so they can be seen and inventoried at a glance. Items are received in original packs as often as possible which reduces the area required for "loose issue".

A very informal type of record system is in use, which consists of a card with the FSN, nomenclature, issue, receipt and balance on it. Each time a transaction takes place, the card is annotated. In this manner, it is possible to determine the quantity of an item on hand, and if it is

necessary to reorder. One each quarter, an inventory is taken to reconcile the cards and stocks.

Items are ordered from the division medical supply using a DD Form 1150, and a priority of 12 is assigned the requisition. If an item is needed on a higher priority it is transmitted either by phone or radio, and all urgent requests (02) are filled immediately and delivered by "Dust Off."

Each unit supported by the medical company draws supplies simply by sending a representative to the unit with a list of supplies which is filled, and the individual returns to his unit.

Based on past experience with multi-brigade operations, we know that the timely movement of medical supplies was of the utmost importance. In past operations the movement of medical supplies was accomplished by "Dust Off" helicopters returning to the forward area. So during the planning phase of our operation it was realized that the rearward aero-medical evacuation of patients to army hospitals would be either north-west or due-west of our division medical supply base. Due to the change of evacuation pattern to the rear the "Dust Off" helicopters would not over fly our division medical supply base, thus making it difficult for us to utilize the back haul capability of the helicopter to move the medical supplies to the forward medical companies. So with this in mind, we considered the possibility of locating a small element of the division medical supply depot with the forward medical company. This small medical depot would resupply the units forward and the small depot would be resupplied from the main division medical supply depot at Di-An.

During operation Junction City we did just this. We moved part of the 1st Medical Battalion medical supply section to a forward logistical base. A small medical supply depot was established in proximity to the medical company providing direct support to the infantry brigade. Units within the area of operations received their supplies directly from this forward medical supply depot.

It was felt that two medical supply specialists would be sufficient to handle the operation along with one additional man to operate the generators. A minimum of equipment was taken as transportation facilities were limited. Two GP tents were taken: a small GP was used for living quarters; and the medium GP was used for a storage area. Two 1.5 KW generators, a blood refirgerator, a field desk, and two metal shelves completed the essential equipment taken.

In order to determine what supplies were to be taken, all the stock record cards were reviewed and all the items used during combat operations from August through January were compiled. From this list, 141 line items were picked and quantitites were determined based on past experience. (Figure 3)

6,200 pounds of medical supplies were initially taken with the supply depot to its forward location, and four days later 4,000 pounds were delivered by convoy. Resupply during this initial period was on a

FIGURE 1

Emergency Medical Supplies

	Quantity	Unit of Issue	FSN	Nomenclature
a.	_____	can	6505-299-8179	Albumin, Normal Serum
b.	_____	pkg	6505-116-1890	Dextran Inj.
c.	_____	bx	6505-116-5000	Dextrose & Sodium Chloride Inj 6's
d.	_____	btl	6505-656-6116	Lidocaine 1%
e.	_____	pkg	6505-543-4048	Water for Inj 5cc
f.	_____	bx	6505-149-1720	Water for Inj 1000cc
g.	_____	bx	6505-299-8615	Ringers Inj Lactated
h.	_____	bx	6505-153-8651	Sodium Chloride Inj 6's
i.	_____	spl	6510-203-5000	Adhesive Tape 3x5½yds.
j.	_____	pkg	6510-203-2185	Ace Bandage 2"x5½ yds.
k.	_____	pkg	6510-201-2200	Ace Bandage 3"x5½ yds.
l.	_____	pkg	6510-201-2400	Ace Bandage 4"x5½ yds.
m.	_____	pkg	6510-201-2500	Ace Bandage 5"x5½yds.
n.	_____	ea	6510-201-1755	Bandage Muslin 37x37x52
o.	_____	ea	6510-201-7425	Battle, Dressing Lg.
p.	_____	ea	6510-201-7430	Battle, Dressing Med.
q.	_____	ea	6510-201-7435	Battle, Dressing Sm.
r.	_____	pkg	6515-558-1509	Blood Recipient Set
s.	_____	pkg	6515-889-7448	Intravenous Inj. Set
t.	_____	pkg	6515-376-7980	Suture Set 3 sizes
u.	_____	ea	6515-386-9580	Cannula, Trach, Jackson Size # 4
v.	_____	ea	6515-386-9620	Cannula, Trach, Jackson Size # 5
w.	_____	ea	6515-386-9660	Cannula, Trach, Jackson Size #6
x.	_____	ea	6530-783-8010	Litter, Folding, Rigid Pole
y.	_____	set	6545-911-1300	Blanket Set, Small

Additional Medical Items Requested Are:

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(This form will be used to facilitate the ordering of medical supplies when radio communications are used).

FIGURE 3

1. 6505-074-4702, Lomotil Tabs
2. 6505-100-6245, APC's
3. 6505-105-8915, Gelusil with Mag. Tris.
4. 6505-111-1200, Calamine Lotion
5. 6505-116-1740, Detergent, surgical, 5oz
6. 6505-116-1750, Detergent, surgical, 1 Gal.
7. 6505-116-1890, Dextran Injection
8. 6505-116-4600, Dextrose Injection
9. 6505-116-5000, Dextrose & Sodium Chloride Inj
10. 6505-128-5710, Timersol Tincture
11. 6505-132-5182, Oxygen USP 95 Gal.
12. 6505-149-1720, Water for Injection 1000cc
13. 6505-150-2000, Zinc Oxide USP 1 lb.
14. 6505-153-8480, Hydrogen Peroxide
15. 6505-153-8651, Sodium Chloride Inj. USP
16. 6505-153-8750, Aspirin Tablets
17. 6505-159-6575, Chlortetracycline HCL Caps
18. 6505-159-6625, Bacitracin Ointment
19. 6505-160-0495, Chloramphenicol Caps
20. 6505-160-7400, Procaine Penicillin 3x10/5 units
21. 6505-160-7410, Procaine Penicillin 1.5x10/6 units
22. 6505-226-1202, Prostaphllyn Caps
23. 6505-237-8468, Desenex Solution
24. 6505-237-8480 Penn. G. Tabs
25. 6505-286-7302, Tetracycline HCL Tabs
26. 6505-261-7256, Isopropyl Alcohol 1 Qt.
27. 6505-299-8095, Isopropyl Alcohol NF 5 Gal.
28. 6505-299-8179, Albumin, Normal Human Serum USP
29. 6505-299-8276, Oxytetracycline Tabs
30. 6505-299-8615, Ringers Inj, Lactated, USP
31. 6505-299-8740, Bacitracin-Neomycin Ointment
32. 6505-299-9535, Dubicaine
33. 6505-515-1584, Foot, Powder, Fungicidal
34. 6505-543-4048, Water for Injection 5cc
35. 6505-551-8683, Sparine Injection
36. 6505-558-1289, Gelusil Tabs 100's
37. 6505-576-8915, Skin Refrigerant
38. 6505-582-4868, Benadryl 50 mg

72. 6510-597-7468, Bandaids
73. 6510-597-7469, Bandaids 100's
74. 6510-890-1370, Adhesive Plaster Porous 3"
75. 6510-890-1371, Adhesive Plaster Porous 2"
76. 6515-Y99-0086, Intercath 14 Ga.
77. 6515-Y99-0071, Intercath 17 Ga.
78. 6515-074-1017, Airway Oral Plaetic Adult
79. 6515-082-2426, Syringe, 2cc Disposable
80. 6515-303-8250, Applicator, cotton tipped
81. 6515-324-5500, Depressor Tongue
82. 6515-334-3800, Forceps Kelly curved 5½ in
83. 6515-334-6800, Forceps Kelly straight 5½ in
84. 6515-335-4600, Forceps Kelly curved 4"
85. 6515-334-7100, Blade, surgical, knife # 10
86. 6515-344-7200, Blade, surgical, knife # 15
87. 6515-344-7800, Handle, surgical knife # 3
88. 6515-352-4560, Needle suture 3/8 circle 6's
89. 6515-356-4100, Probe 5"
90. 6515-356-9300, Probe 8"
91. 6515-363-8400, Scissors Angular 8½ in
92. 6515-364-0920, Scissors straight 63/4 in
93. 6515-372-1200, Bass Wood Splints
94. 6515-372-2100, Splint Wire ladder
95. 6515-372-5100, Thomas Leg Splint
96. 6515-376-7980, Suture Set 3 sizes
97. 6515-376-9500, Suture nonabsorbent 6-0
98. 6515-383-0565, Tourniguet nonpneumatic
99. 6515-386-9580, Cannula Trach. Jackson sz. 4
100. 6515-386-9620, Cannula Trach. Jackson sz. 5
101. 6515-386-9660, Cannula Trach. Jackson sz. 6
102. 6515-558-1509, Blood Recipient Set
103. 6515-584-3736, Holder Suture Needle 5.5 in
104. 6515-584-3738, Forceps tissue tweezer
105. 6515-660-0008, Blade surgical knife # 15
106. 6515-660-0009, Blade surgical knife # 12
107. 6515-660-0010, Blade surgical knife # 11
108. 6515-660-0011, Blade surgical knife # 10
109. 6515-660-0046, Airway Pharyngeal Plastic Adult

FIGURE 3 Cont'd

39. 6505-597-5843, Thorazine Inj. 6's
40. 6505-598-6116, Lidocaine 1 %
41. 6505-598-6117, Lidocaine 2 %
42. 6505-656-0483, Erythromycin for Inj.
43. 6505-656-1010, Compazine Inj 100's
44. 6505-660-1720, Darvon 32 mg, 100's
45. 6505-662-9790, Erythromycin Tabs
46. 6505-664-4814, Undecylenic Acid Ointment
47. 6505-680-2787, Antiveninkit, Polyvalent
48. 6505-687-8205, Cepacol Lozenges
49. 6505-753-5043, Malaria Tabs
50. 6505-754-2666, Griseofluvin Tabs
51. 6505-754-2828, Sodium Chloride Tabs
52. 6505-890-1420, Ornade Tabs
53. 6505-890-1554, Flurandrenolene Cream 0.05%
54. 6510-074-4579, Sponge Surgical 4x4 Sterile
55. 6510-200-2185, Ace Bandage, 2" x 5½ yds.
56. 6510-200-2200, Ace Bandage, 3" x 5½ yds.
57. 6510-200-2400, Ace Bandage, 4" x 5½ yds.
58. 6510-200-2500, Ace Bandage, 5" x 5½ yds.
59. 6510-201-1755, Bandage Muslin 37x37x52
60. 6510-201-4000, Cotton Purified 1 lb.
61. 6510-201-7425, Bandage, 1st Aid, Field Large
62. 6510-201-7430, Bandage, 1st Aid, Field Medium
63. 6510-201-7435, Bandage, 1st Aid, Field Small
64. 6510-201-7455, Bandage, 1st Aid, Small
65. 6510-202-0750, Gauze Petrolatum 3x6
66. 6510-203-2250, Pad Abdominal 8x10 yds.
67. 6510-203-5000, Tape, Adhesive, 3" x 5 Yds.
68. 6510-203-5500, Tape, Adhesive, 12" x 5 Yds.
69. 6510-203-8448, Gauze Sponge 4 x 4
70. 6510-203-8480, Gauze Sponge 4 x 8
71. 6510-559-3221, Gauze, 2 x 2
110. 6515-663-0561, Cannula Tracheotomy Jackson sz. 6
111. 6515-754-0406, Syringe Hypo Disp 5cc 100's
112. 6515-754-0426, Blade Safety Razor
113. 6515-754-2834, Needle Hypo 18 Ga. 100's
114. 6515-754-2835, Needle Hypo 22 Ga. 100's
115. 6515-754-2837, Needle Hypo 26 Ga. 100's
116. 6515-755-1113, Suture silk 3-0
117. 6515-864-5518 Gloves sz. 7, 36's
118. 6515-864-5514, Gloves sz. 7½, 36's
119. 6515-864-5520, Gloves sz. 8, 36's
120. 6515-864-5521, Gloves sz. 8½, 36's
121. 6515-865-2687, Suture silk, 3-0, Single Armed 12's
122. 6515-889-7448, I.V. Sets
123. 6515-903-8169, Inflatable Arm Splint
124. 6515-904-0116, Inflatable Leg Splint
125. 6515-963-5348, Suture, silk 3-0
126. 6515-966-3735, Nonabsorbent 5-0
127. 6530-406-0150, Bottle Screwcap Pres. sz. 2
128. 6530-406-0180, Bottle Screwcap, Pres sz. 4
129. 6530-NS Ointment Tins
130. 6530-715-0915, Bag Patients Effects
131. 6530-783-7205, Litter Folding Folding Pole
132. 6530-783-7510, Litter Poleless Nylon
133. 6530-786-4635, Pad Heating Chemical
134. 6530-786-4640, Pad Chemical Heating Refill
135. 6545-911-1300, Blanket Set
136. 6545-912-9870, Bag Medical Instrument & Supply Set,
137. 6545-922-1200, 1st Aid Kit GP Empty
138. 6545-949-7500, Tournaquet scissors, forceps set
139. 6850-985-7166, Water purification tablets
140. 7120-717-7985, Blanket Bed Wool O.D.
141. 7210-717-2000, Sheet Cotton White

prearranged basis, as certain fast moving items had been singled out for delivery during the first few days of the operation. After the first two days all resupply was on a "demand" basis and an additional 5,200 pounds were delivered by air during the remainder of the operation.

A record system was established in order to keep track of what was issued and received, and to serve as a basis for future planning. The records consisted of a card which had the FSN, nomenclature, receipt, issue, and balance on it. Each transaction was posted as it was made. Units desiring supplies would send a representative to the forward supply depot with a list of items required. As soon as the list was filled, the individual would return to his unit with the supplies. At no time during the operation was a due-out given to any unit for any item of medical supply. This operation proved that prior planning and a good record system are prerequisite to success in medical supply operations.

Today the 1st Medical Battalion supply section stocks a 45 day level of supplies in over 2,300 line items. An average of 55,000 pounds of medical supplies are received each month, and 38,000 pounds, on the average, are shipped forward from the division main base camp each month in support of the 1st Infantry Division.

The motto of the 1st Medical Battalion is "Ready for Anything". And in the Big Red One they prove this by assuring that a "Rider" is not lost.

FIGURE 2: Division Medical Supply Summary

MONTH	RECEIVED FROM DEPOT	SHIPPED FWD. BY TRUCK	SHIPPED FWD. BY AIR	TOTAL
July	42,000 lbs	15,750 lbs	16,955 lbs	32,705 lbs
August	40,000 lbs	15,800 lbs	19,180 lbs	34,980 lbs
September	34,250 lbs	16,300 lbs	12,450 lbs	28,750 lbs
October	44,150 lbs	15,800 lbs	19,180 lbs	34,980 lbs
November	57,750 lbs	29,850 lbs	18,980 lbs	48,830 lbs
December	120,000 lbs	15,500 lbs	25,150 lbs	40,650 lbs
January	55,000 lbs	16,600 lbs	25,200 lbs	41,800 lbs
February	51,500 lbs	21,260 lbs	13,400 lbs	34,660 lbs
March	48,250 lbs	11,650 lbs	20,860 lbs	32,510 lbs
April	56,676 lbs	17,435 lbs	29,442 lbs	46,877 lbs

1. In the month of November the total of medical supplies increased because the division was involved in Operation Attelboro, a multi-brigade operation.

2. In December the total of supplies received increased because the division was planning for Operation Cedar Falls, which was to be a multi-brigade operation.

3. In April both the supplies received and issued increased as the division was involved in Operation Junction City, which was a multi-brigade operation.

EYE DISEASES AND INJURIES SEEN IN VIETNAM

CPT Marvin F. Goldstein, MC*

During the past year and a half, it has become obvious that there are certain frequently occurring eye diseases and injuries seen in Vietnam. There is nothing unique about any of these; however, the frequency of their occurrence and the importance of correct, immediate treatment prompted us to briefly list them and mention the treatment in use at the 85th Evacuation Hospital.

1. Epidemic Kerato-Conjunctivitis. Four hundred and fifty (450) cases have been treated in the past 12 months. The diagnosis is made by the presence of scanty mucopurulent discharge, the lids sticking together in the morning. The conjunctiva is severely inflammed and large follicles are present on the palpebral conjunctiva. A pre-auricular lymph node is frequently present and palpable. The cornea may be involved by a sub-epithelial infiltrate. The disease lasts from 14-21 days and is self limiting. Treatment is symptomatic and non-specific consisting of antibiotic drops or ointment, possibly with the addition of steriods though these do not alter the course of the disease.

2. Trachoma. This disease is caused by a large virus, is the most common cause of blindness world-wide, and is very prevalent in Vietnam. The diagnosis is made by the presence of a feeling of "scratchiness" of the eyes, severe photophobia, and follicles on the upper palpebral conjunctiva. The most important finding is that of pannus formation (this is scarring of the upper portion of the limbus with infiltration of vessels) and scarring of the upper lid with trichiasis. The treatment is both preventive with improvement of occular hygiene, and active for the established disease. This latter must be caught early if sight is to be preserved and consists of chlortetracycline opthalmic ointment, and systemic sulfa therapy as sulfadiazine 500mg by mouth four times a day for ten days. The trichiasis must be treated surgically, in order to prevent further corneal abrasion by the turned in lashes.

3. Chalazion. This is the result of an obstructed Meibomian gland duct with resultant cyst formation in the tarsus. The treatment consists of warm compresses, antibiotic ointment, and systemic antibiotics if more severe infection is present. Most will completely resolve on this regimen, but if the cyst remains it must be removed surgically.

4. Hordeolum or "stye". This is a small, localized infection which may go on to fluctuation. The treatment is warm compresses, antibiotic ointment, and referral to an ophthalmologist if drainage is necessary.

5. Injuries of the eye.

a. Arc welding burns; actually ultra-violet burns. The symptoms are "scratchiness" and photophobia. The treatment is cycloplegia and bilateral eye patches. Symptoms usually subside within 24 hours.

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b. Chemical burns. The history tells the story and prompt treatment is mandatory. Initially, and usually definitively, treatment consists of copious and prolonged flushing of the eyes with water. Dilute sodium bicarbonate solution should be used for phosphorous burns. The patient should then be referred to the ophthalmologist for further observation.

c. Corneal abrasion. This constitutes a true ocular emergency. The diagnosis may be made by staining the cornea with flourescein and examining the eye under oblique lighting or a slit lamp. First aid consists of a firm patch. Definitive care is the removal of any foreign body or rust with a fine point (g#25 needle works well), antibiotic drops, and cycloplegia for relief of pain. Topical anesthetic should be used for examination only and ointments are contraindicated as they slow healing, decrease protective reflexes and make re-examination difficult. A firm patch should be applied until healing is complete.

d. Hyphema. This consists of blood collected in the anterior chamber due to a blow to the eye. The intraocular bleeding may be early or delayed and may result in pigment staining of the cornea or traumatic glaucoma due to increased intraocular pressure. Early recognition is vital by direct or slit lamp examination. Early treatment is by binocular eye patches, strict bed rest with limited head motions, sedation, and surgery when indicated for removal of the clot and treatment of glaucoma. Early and correct treatment and recognition are vital if the sight in these eyes is to be preserved.

e. Perforations of the Globe. These obviously are the most catastrophic eye injuries. A salvagable eye may be lost due to mishandling or delay in treatment. The lesion is detectable by the presence of ciliary prolapse, an irregular pupil (tear drops or oval shaped) a deepened anterior chamber, or loss of aqueous or vitrous to the outside. Intraocular foreign bodies should be inspected and verified by adequate X-ray examination during the admission workup. Careful handling without manipulation or pressure to globe is mandatory and surgical removal of intraocular foreign bodies and repair of the globe carried out as soon as possible. If the foreign body is non-magnetic its removal may be impossible. This lesion obviously must receive care available only from an opthalmologist. Early care performed by others should consist only of a loose, protective patch.

f. In any case in which one eye is irreparably damaged, it should be removed by enucleation as soon as possible to prevent the occurence of sympathetic ophthalmos with resultant loss of vision in the remaining eye. A ball is placed in the empty socket on the enucleated side to take up dead space and to preserve contours whenever the site is suitable.

Much suffering and perhaps permanent disability can be prevented if the foregoing precepts are observed.

The 85th Evacuation Hospital
Qui Nhon, Vietnam

OBSERVATIONS ON EXTERNAL OTITIS IN VIETNAM

Captain J. M. Hodges, MC*

The purpose of this discussion is to acquaint those physicians who daily face many cases of external otitis with some simple and useful measures in its treatment.

Since external otitis is mistaken on occasion for otitis media the important points in the diagnosis of otitis media will be briefly stated first. In acute suppurative otitis media the tympanic membrane is red or gray with evidence of inflammation, congestion, and swelling, and the landmarks are absent as the tympanic membrane bulges. The fluid behind the tympanic membrane is colorless and a fluid level is not visible. The patient has fever and an elevated white blood cell count. He has severe pain and diminished hearing in the affected ear. If unattended the tympanic membrane may rupture, the pain will subside, and the patient will report on sick call with pus draining from his ear.

External otitis infections are usually very uncomfortable and prompt relief is not always easy to obtain but it can be cared for, by and large, at a medical company, battalion aid station, or dispensary level.

Paramount to the diagnosis and treatment of otitis is the careful cleaning of the auditory canal of all debris and cerumen so that the canal and the tympanic membrane can be seen clearly. If the canal is red hot and swollen shut a carefully inserted 10% Burrow's wick will help reduce the swelling and make the ear more amenable to cleaning in the next day or so. In general, "ear drops" on top of wax, pus and or exfoliated skin, when the purpose is to cure, has virtually no effect and leaves doubt as to what is actually being treated.

The canal can be cleared of cerumen and debris by various methods, the best of which is suction. Every medical company and some dispensaries have a suction machine and these should be put to use. A blunt 13 gauge needle slightly bent is effective as a suction tip and can be introduced through an operating otoscope. If there is a problem with hard cerumen, an ear currette or an alligator forceps is handy for this. The canal wall is very tender and bleeds easily if the instruments are not handled with care.

Irrigation is the least desirable method of cleaning an infected ear and should not be used. However if one must resort to irrigation it can be used provided a perforation is not present (a good history will usually reveal this) and provided a red hot external otitis is not present. Most facilities have the large metal ear syringe which is effective sometimes in irrigating the auditory canal. A 10cc or larger syringe with a blunt 13-18 gauge needle may prove more effective if carefully done by the physician (the jet stream produced may injure the tympanic membrane). Irrigation solutions can be warmed to prevent vertigo. The best irrigating solution is 3% saline but one may have to resort to hydrogen peroxide until the 3% saline is available to him. Hydrogen peroxide breaks down into oxygen and water so the canal must be completely dried after its use since water in the canal promotes infection. Carefully dry the canal with cotton tip

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applicators and if the canal is too narrow, reduce the amount of cotton on the tip of the applicator. A dropper full of 70% alcohol into the canal will help dry the canal and this can be repeated several times.

After cleaning, the canal and tympanic membrane can be evaluated, the exudate and debris already having been examined. If the signs and symptoms of otitis media are not present, yet there is erythema of the canal and tympanic membrane, then one may deduct that he is probably dealing with one disease - external otitis. There also may be marked swelling of the canal and tenderness on movement of the pinna in external otitis. All the physical signs and symptoms of the various types of external otitis will be discussed but two facts bear emphasis: the tympanic membrane can be erythematous in external otitis and there can be some diminished hearing without otitis media being present.

Most of the infections are bacterial and approximately 85% of external otitis is due to pseudomonas. Mycotic external otitis occurs and sometimes the infections may be mixed.

Treatment consists of cleaning the canal completely and using antibacterial and or anti-fungal agents locally. When there is lymph node involvement some recommend the use of an appropriate systemic antibiotic depending on cultures and clinical impression. By and large systemic drugs are not necessary.

Ophthalmic antibiotic ointments on a cotton wick have been found effective in the treatment of external otitis. These can be changed daily by the physician.

Metacresyl acetate (cresatin) is a satisfactory drug in the initial treatment of bacterial and mycotic infections of the external auditory canal. It is an analgesic and antiseptic solution. It is introduced into the canal on a cotton wick and after 24 hours it is removed and the canal is cleaned again. It is changed as necessary until the infection subsides. One can switch to an antibiotic solution (i.e. Aerosporin) after several days of good response.

Another solution which produces good results and is perhaps more popular and more readily available is a 10% Burrow's Solution which can be prepared at any medical facility. Its retention in the ear canal is aided by the use of a gauze or cotton wick. Prepare a liter of solution and dispense it in the nose dropper bottles. A jar (200-300cc) with 10% Burrow's solution and ¼ inch plain gauze cut into 4-5cm lengths is convenient for the use and storage of the gauze wicks. A cotton or gauze wick is inserted carefully and deeply into the canal with a bayonet forceps. The patient should keep the wick damp with the Burrow's Solution and should return daily for changing the wick and cleaning of the canal until the infection clears. This treatment can be followed by Aerosporin or cortisporin for a few days up to a week.

Boric acid 3-5% in 70% alcohol is very effective after the initial acute phase of external otitis and can be used daily at night before retiring and

should be used at any time water gets into the external canal. However, the patient must guard against getting any water in his ear canals and he must be warned of the infection being complicated by the presence of water. After the infection has subsided water in the ear canals should be avoided as much as possible, for these same individuals are prone to return many times.

DIAGNOSIS OF PLAGUE

In the absence of an autopsy, cultures may lead to the identification of Pasteurella pestis by SWAB from the TONSILLAR REGION or by NEEDLE ASPIRATION from LYMPH NODE (bubo), LUNG or SPLEEN.

Pasteurella pestis may be present in the nasopharynx without signs or symptoms.

Collection and Shipment of Specimens: If bacteriologic studies cannot be performed on the spot, procedures for collection and shipment of suspect plague specimens are as follows:

a. Take swabs of the tonsillar region and nasopharynx and place in vials of transport media (Cary and Blair, J. Bact., 88: 96, 1964). Transport media can be obtained from the 9th Medical Laboratory, APO 96307 (Saigon), 528th Mobile Laboratory, APO 96238 (Qui Nhon) and 946th Mobile Laboratory, APO 96491 (Long Binh). Forward specimens without delay to the nearest of these laboratories for processing. DO NOT FREEZE.

b. Aspirates or specimens from bubos or from organs should be transferred to sterile cotton swabs, the swabs placed in transport media and shipped as described in paragraph "a".

c. Blood for serologic tests should be collected aseptically and sterility maintained during handling and shipment.

d. Forwarding of any available information on prior vaccination of the individual against Pasteurella pestis is very important in evaluating serologic results.

e. Insure that all specimens are adequately labelled and are accompanied by complete request slips.

SILVER STAR

Captain Marion G. Runion, US Army Dental Corps, a member of B Company, 1st Med Bn, 1st Infantry Division, was awarded the Silver Star posthumously for gallantry in action during operations in which he took part on the evening of 2 February 1967.

Captain Runion went forward with a dustoff ship when word was received of a casualty who was wounded in the neck and jaw and having trouble breathing. The ship was fired on as he was helping to guide it to the L.Z. Once on the ground Captain Runion proceeded to the casualty and carried him to the helicopter. As the ship took off it was hit by enemy fire and crashed, killing all aboard.

The operation in which Captain Runion died took place at Tan Uyen, approximately 6 miles North of Bien Hoa. His conduct and actions reflect the highest traditions of the Army Medical Service.

PSYCHOLOGIC ASPECTS OF THE YEAR IN VIETNAM

Captain Jerome Dowling, MC*

The essential ambivalence with which we approach our year in Vietnam is expressed by the initials IHTFP that stare at one relaxing on the roof of one of the BOQs in Saigon. These letters have been interpreted variously, including the extremes of "I have truly found paradise" and "I hate this ..... place." Both personally and professionally we are often attempting to cope with this latter attitude which does vary some during the year, but still furnishes a base line for the feeling, thinking and behavior that characterize the majority of us who are here for a one year tour.

The topic of the emotional cycle, or the psycho-social patterns, of the year is a common point of discussion. This is illustrated by the first question or two that comes up when you meet someone for the first time in Vietnam; namely, "how long have you been here?" or "how many more days?". A common bond between two people can be set up on the basis of a similar DEROS (date eligible for return from overseas), say plus or minus one month, whereas it is rather difficult for a "short timer" to find much in common with someone who has 364 days to go.

For purposes of discussion I have divided the psychological year into three periods: First, the period of apprehensive enthusiasm; second, the period of resignation; and third, the period of anxious apprehension. The three psychological periods seem to have a motion all their own, and although individuals vary they do seem to be subject to a mood or tone depending on the number of days they have been in the Republic of Vietnam. I will describe some feelings, thoughts and behavior that characterize these three periods, commenting on some psychodynamics and psychiatric problems specific to each period.**

Some place from three weeks to three months is the period of apprehensive enthusiasm. For some, enthusiasm vanishes simply on receiving orders for Vietnam. For others, Camp Alpha has been an initial trauma to remove any vestige of military-missionary zeal. To see the naked joy in the faces of the out-going troops and hear their hair-raising combat stories, plus the sound of artillery, plus the mess halls, plus the latrines; why everyone diesn't turn around and go home still puzzles me.

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**These formulations are a result of a presentation of similar ideas to a meeting of the medical staff of the 17th Field Hospital plus conversations with LTC Arnold Johnson, Psychiatry Consultant. Mainly, however, the ideas have come from my experiences while with the 1st Cavalry Division, particularly in contacts with my predecessor as Division Psychiatrist, CPT Harold Byrdy, and my colleague Major Jerry Ramthun, the Division Social Work Officer.

Death is suddenly a very real item. For example in one particular battalion a newly assigned PFC has a 50-50 chance of surviving the year based on that battalion's first year statistics.

This possibility is initially denied, as it seems are the terror, disgust, and recent loss of family and stateside surroundings. The first weeks and months there is compensatory reaction formation that is obvious, particularly so in the Division (in general the psychological swings seem to me more subtle in the Saigon area).

Many new commanders in the division displayed their initial freshness or enthusiasm by reform. Grass was cut, walks straightened, flowers planted in an attempt to relieve the bleakness and depressing drabness that characterizes newly established base camps in Vietnam. One new Commanding Officer required that his helicopter be saluted. As it is difficult to distinguish one chopper from another it was necessary for members of this particular battalion to salute all choppers, and the Cav has four to five hundred helicopters around An Khe.

One of the most enthusiastic initial responses with subsequent let down was a battalion XO who, on arrival in Vietnam, strictly enforced fatigues rather than T-shirts or a shirtless state that prevailed before his arrival. Every day for a week, then for two wesks, this XO appeared in freshly starched fatigues. DRs were passed out in the battalion area for violators of the new regime. Rumor was the XO had brought 365 sets of freshly starched fatigues from the states. Finally the third week it became apparent he had had his fatigues laundered locally and with the loss of his starch, so to speak, enthusiasm waned and the unit reverted to a more comfortable style of dress.

Pretty much without exception the psychotic patients I have seen have been in the first months of their tour. A high percentage of character-behavior disorders also make their first psychiatric contact at this time. Both these groups have been unable to accomplish a psychic equilibrium that in the division ninety seven percent of the men accomplish. In relationships formed in the unit and in correspondence most of us build up adequate psychological support for our own personal needs.

Hopefully, then, the apprehensive enthusiasm ends, one gets oriented to a job routine (and for the trooper the routine can be deadly), establishes a regular correspondence, and makes some friends in the unit. At this stage one enters the phase of resignation.

Actually the phase of resignation seems to be a chronically depressed state. A ten to fifteen pound weight loss during the first three or four months is common. Sleep thru the tour is broken, disturbed by artillery fire, trips to the latrine (from prolonged socializing at the bar) or, as in the Saigon and other areas, simply because it's too hot to sleep comfortably. Five to six hours of sleep seem adequate and certainly is the ultimate for the trooper in the field. Loss of appetite is episodic. Often one meal a day will suffice. Social interaction at a division base camp is limited (socially Saigon is a much different story). In the division meals are often quiet affairs even with eight to ten people at a table, exchanging a minimum of conversation. Activities such as volley ball, chess, cards,

cameras, tape recording, reading, and singing groups are utilized in fits and starts as depression waxes and wanes in the individual or the group.

The psychiatric patient presenting during this period, from month number four to month number eleven, is usually the most trying dispositional dilemma. Officers and non-commissioned officers characteristically show up at this time with more than the usual depressive symptomatology, marked sleeplessness, anorexia, exaggerated states of fear (aviators, platoon leaders), and in many cases an attempt to compensate with increased alcohol intake. These men are usually not sick enough to warrant psychiatric evacuation nor do they respond miraculously to a two to three day hospitalization as do persons with combat exhaustion or acute situational reaction. Usually a complex administrative-medical dialogue ensues with varying outcomes, the most common being a down grading of job responsibility such as transfer from a line unit to a base camp setting.

Many of us bring built in psychologic problems which seem to flare with the stress of Vietnam. There is the teenager and young adult who is wondering who he is, still working on a satisfactory personal identity. There is the adult with marital difficulties, and the adult with eight to ten years in the Army and still undecided about a career in the service. Also, there are those individuals near retirement with concerns about their future. In Saigon Colonels seem to be the ones who make the most frequent psychiatric contacts with this latter problem. In these situations it is often a unit conflict or a change in the quantity or quality of the individual correspondence to the states that triggers off problems requiring psychiatric intervention. Often it is simply a matter of time with no magic answers available. As noted, these referrals occuring during the middle chunk of the tour present the greatest demand on psychiatric skills and knowledgeability.

The majority of us in Vietnam spend these eight months doing our job, looking forward to and making arrangements for R & R, leave, or TDY. The R & R and leave time have their own prodromal euphoria and anxiety prior to departure. On return there is a subsequent week to 10 day depression. Similarly, individuals on emergency leave require a two week convalescence on re-entering the Vietnam scene.

Those individuals who have looked forward to the emergency leave or R & R to solve a specific crisis situation such as a job problem, marital discord, or marked depression, often reach the psychiatrist a few days after returning. There is the realization that the problem has not been solved and some times a brief supportive hospitalization is indicated where the depression is marked.

Lastly, as DEROS approaches, there is the period of anxious apprehension, a potentially severe syndrome of emotional distress beginning mildly two to three months before rotation, but usually occuring obviously in the last three weeks of the tour and most marked the last three days prior to rotation. Irritability seems to alternate with euphoria. Pacing is a common sign. Quiet hard working individuals who for eleven and three quarters months have put up with deprivations, long working hours, and continually increased

demands will suddenly behave in a rather inappropriate manner. A fire chief at the 1st Cav who worked a 12 hour day - 20 days on, one day off for 11 months 26 days - suddenly flew into a rage in his orderly room, disobeyed orders from his commanding officer, was eventually subdued and was brought to the psychiatric ward. After a somewhat lengthy period of ventilation the crux of the situation seemed to be that he was not yet manifested on a flight to leave for the states, but the same day a co-worker with whom he had arrived had departed for the states getting a four day drop in tour time. An anesthesiologist, two days prior to departure, on meeting the medical group commander - much to the chagrin of the hospital commander who was conducting the Colonel on a tour - instead of saluting simply waved a happy hell'o and whistled his way into the hospital. Fortunately there were no after effects, but many an individual in this rather uncertain period prior to departure has become involved in behavior resulting in disciplinary action with a resultant hold over for administrative action.

Firm advice regarding the consequences of behavior, with occassionally supportive hospitalization, are the usual treatment modalities used with psychiatric patients presenting during this final period.

At the 17th Field Hospital getting short is manifested by requests for VDRL blood tests, chest X-rays and removal of warts. A major came to one of the medical officers complaining of a cold three days prior to departure commenting that he didn't want to take the cold home to his daughter. While not getting involved in the unconscious significance of such requests it would seem that in the final weeks of the tour there is much more intensified concern about returning intact. The apprehension about the possibility of incoming mortar rounds seems as great for the twelve month veteran as for the two week newcomer.

There is a nostalgic song in Vietnam which attempts to detail the causes of the soldiers' depression and ends with the words "So why not send me home?" Unfortunately it takes a year with all of its emotional experiences of enthusiasm, resignation, and anxiety, to accomplish this.

METHANOL POISONING

First Lieutenant Gerald D. Jacobs, MSC,* Captain David Schnakenburg, MSC** and Captain Edmund M. Katibah, MC***

Six separate incidents of deaths following ingestion of locally purchased liquor and native rice wines have been reported to the 9th Med Lab during the past two months. In each incident adulteration of the liquor with methanol (Wood alcohol) has been found to be involved. Available details of each incident are described as follows:

a. Philippine Civilians: Two unemployed Philippine male civilians purchased a bottle of "Seagrams 7" from a street vender in downtown Saigon 2 March 1967. After consuming the liquor, they became ill and were admitted to the Saigon Adventist Hospital. They exhibited the classical symptoms of methanol toxicity (acidosis, visual disturbance and comatosis). Confirmation of elevated blood levels of methanol were made by this laboratory. One man died and the other responded to treatment without any permanent damage. The bottle of whiskey was not recovered.

b. MSTS Civilians: Two American MSTS civilians were admitted, one to the 17th Field Hospital and the other to the 3rd Field Hospital, on 19 March 1967 after consuming "Seagrams 7" and "Old Grand Dad" liquor purchased on the local Saigon market. Both men subsequently died. Samples of the liquors consumed were recovered and were found to contain 25-35% methanol. Blood specimens obtained immediately after death contained 110mg% methanol in the case of one individual (this value has been confirmed by AFIP) and 220mg% in the other. Emesis from the latter individual contained 320mg% methanol. Oddly, neither individual exhibited classical symptoms of methanol poisoning, rather they had elevated blood CO_2 levels and did not show symptoms of visual disturbances. The possibility of one or more additional toxic agents in the liquor, perhaps in the form of other toxic alcohols, has not been ruled out at this time. Toxic amounts of arsenic, mercury, silver, antimony or bismuth were not detected in the liquor. Seven other shipmates reportedly consumed varying amounts of this liquor but none became seriously ill. Blood was obtained from all seven on 20 March 1967. All were negative for methanol except one individual who reportedly consumed a pint of the liquor and his methanol level was 23mg%. He did not appear to be ill.

c. Nung Incident: Specimens of blood and three bottles of "rice wine" were received from the 406th Med Lab in Nha Trang 18 March 1967. Reportedly 30 Nungs died consuming this beverage. Of the three bottles of liquor received from Nha Trang, one was negative for methanol but the other two contained approximately 5% methanol. All were negative for heavy metals. Our screening test does not detect lead. Five blood specimens were received, four were negative for methanol, but the other contained 70mg% methanol. Also, only the latter individual had a significant blood alcohol level. No information was received relative to the clinical picture of these individuals.

d. Merchant Seaman: A 30 year old American Merchant Seaman was admitted to the 17th Field Hospital in Saigon at 0430 hours, 1 April 1967, after consuming an unknown quantity of liquor. He was comatose and extremely acidotic upon admission. At this time his blood methanol level was 135mg%.

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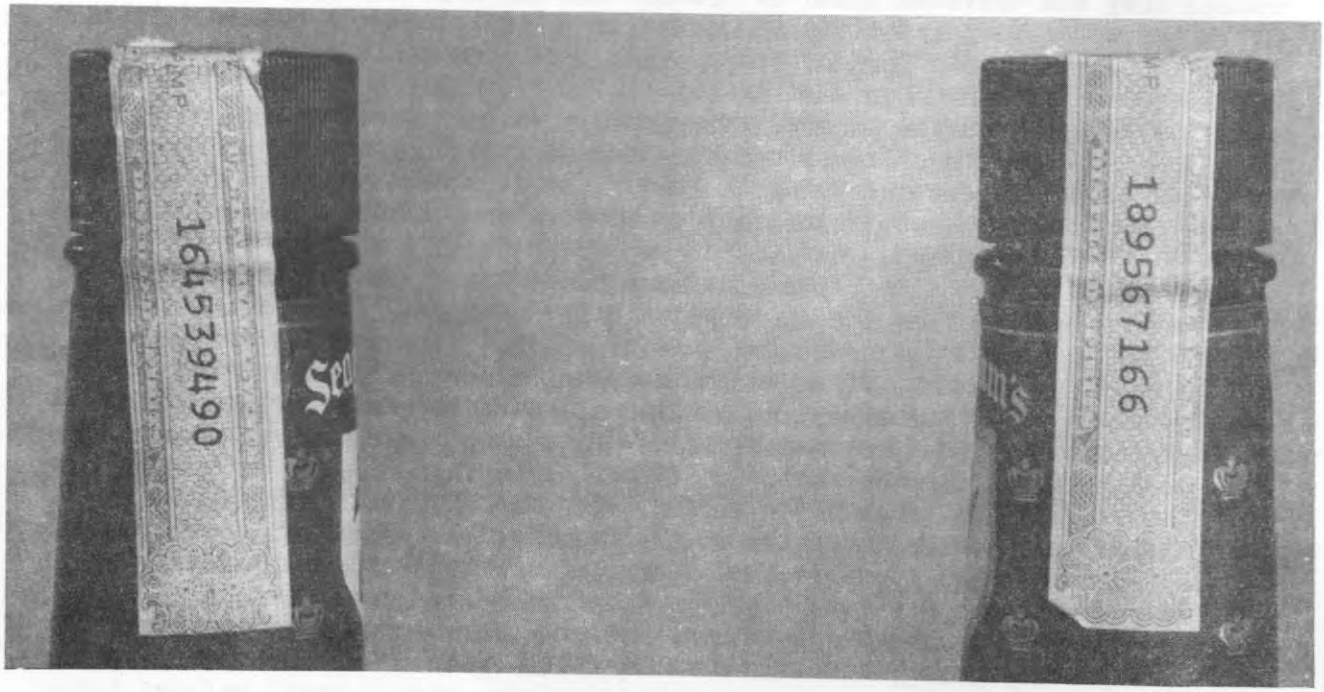
He was transferred to the 3rd Field Hospital and was hemodialyzed continuously until he expired without regaining consciousness at 1300 hours 2 April 1967. A quart bottle of "Seagrams 7" was recovered which he supposedly drank from; it was found to contain 38% methanol. The source of this liquor is unknown.

e. C.I.D.G. Incident: A large gathering of Civilian Irregular Defense Group personnel and dependents had a feast at Lac Thien (II Corps Area) on 2 April 1967. Sixty one (61) personnel were known to have consumed varying amounts of a rice wine beverage purchased at Ban Me Thuot Twenty six (26) of these people reportedly died and 9 have residual blindness of varying degrees. We received 12 samples of the beverage from CPT Dawson of the 5th Special Forces Group. Four were found to be positive in concentration from 20-35%. We also received a small sample of the beverage from Dr. Pak which was forwarded to us by the 406th Mobile Laboratory at Nha Trang. This specimen contained 27% methanol.

f. Hau Bon Phu Bon Incident: On 10 May 1967 we received, via 8th Field Hospital, two samples of rice wine from the PHD, USAID, Reg II, Nha Trang. These specimens were forwarded by Dr. Chan U Pak with the explanation that two individuals had died after drinking this wine. Both rice wines were positive for methanol, yielding 15.5mg% and 3.3mg% respectively. No further details have been received concerning this incident.

The numbers of methanol poisonings have increased. The clinical pictures, however, are often not typical for pure methanol poisoning. The presence of other intoxicants is quite common in poisoned whiskey.

It is pointed out that all "Seagrams 7" bottles yielding positive methanol were sealed with a counterfeit tax stamp number 164539490.



Counterfeit

Genuine

COMMENTS ON THE USE OF A NEW RESPIRATORY STIMULANT

CPT Robert Watson, MC*

During the past six months a new respiratory stimulant, Doxapram hydrochloride (Dopram) (Rx)) has been utilized for four separate purposes in the post anesthetic patient in the operating theater at the 36th Evacuation Hospital. Dopram has been used at termination of the anesthetic to hasten arousal and to increase alveolar ventilation, (increase in the tidal volume is greater than the increase in the rate), thereby shortening the time required for the return of protective reflexes and decreasing arterial hypoxemia and or hypercarbia. Dopram also has been used as a differential test of residual curarization. These uses are well described by Noe, Siker, Winnie, and Stephans and were confirmed in extensive clinical trials at Brooke General Hospital (unpublished data on file with the A. H. Robbins Drug Co.).

The drug dosage for arousal and respiratory stimulation is 1.5 mgm per kgm of body weight given intravenously in two divided doses about one minute apart. This usually results in arousal and respiratory stimulation within two to five minutes when thiopenthal sodium plus nitrous oxide or halothane plus nitrous oxide have been the anesthetics. Arousal is not as rapid when methoxyflurane plus nitrous oxide or diethyl either with or without nitrous oxide are the anesthetics, however the respiratory stimulation is approximately the same. The maximal respiratory stimulation occurs within two minutes after injection and trails off within seven minutes, however the tidal volume remains elevated above pre-drug levels for twenty to forty minutes.

As a test for residual curarization Dopram (in the absence of a nerve stimulator) has been invaluable. Some anesthesiologists prefer the use of a nondepolarizing relaxant such as curare which can be easily reversed to the use of a depolarizing relaxant such as succinyl-choline which carries with it the dangers of prolonged paralysis due to the infrequent patient who has atypical pseudocholine esterase and the infrequent incidences of over dosage which are difficult to impossible to reverse. When Dopram was used in the test of curare reversal it was given in the dosage of 1.5 mgm per kgm of body weight and measurements of tidal volume were made per drug and post drug injection using a Wrights respirometer. Residual curarization was noted by either no increase in the tidal volume or a slight decrease after Dopram injection. More atropine (as needed) and prostigmine were then given intravenously and the measurements described with the respirometer repeated before and after Dopram injection. Usually Dopram in the nonparalyzed patient will result in a two to three fold increase in the tidal volume.

The fourth use of Dopram, not previously described elsewhere, was prompted by the observation during a clinical trial at Brooke General Hospital that Dopram promptly relieves larygospasm. This observation

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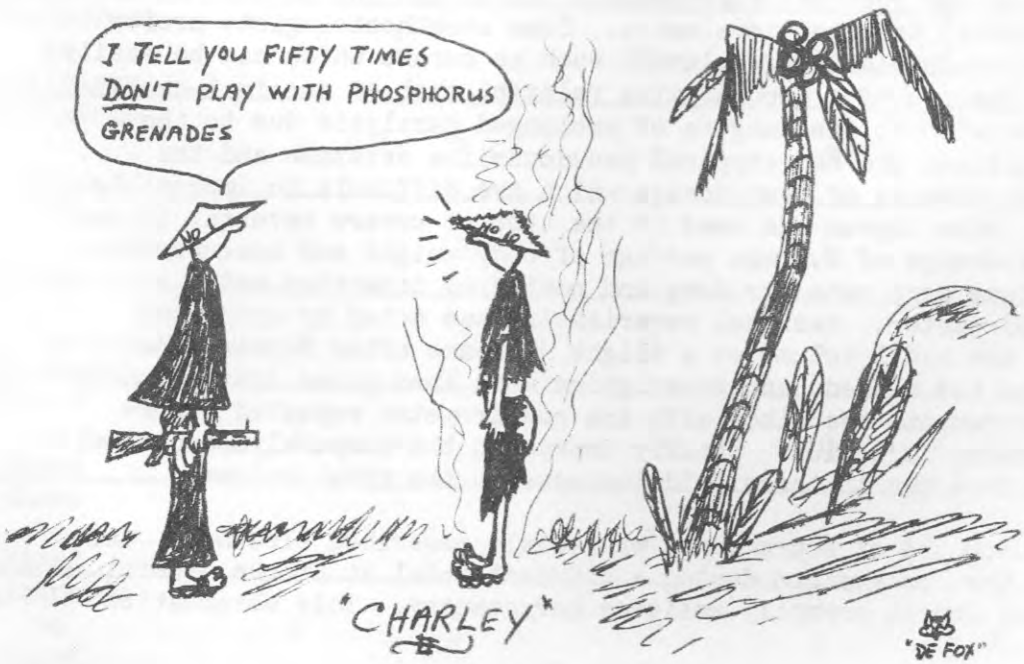
was made during direct larygoscopy for vocal cord striping where the anesthetic was intravenous thiopenthal sodium, meperidine, and Dopram utilized without an endotracheal tube. During the past six months we have had four cases of mandibular fractures with banded or wired arch bars who were given general anesthetics via nasoendotracheal tubes. Removal of the nasoendotracheal tube with mouth tightly closed in these conditions can be dangerous from the standpoint of laryngospasm and or vomiting. Dopram (in the usual dosage described before) was given in two divided doses as the nitrous oxide was discontinued (the anesthetic having been halothane plus nitrous oxide) while the patient was still asleep and after thorough suctioning of the naso and oropharnyx. Oxygen was continued via the nasoendotracheal tube and upon the return of the protective reflexes and respiratory stimulation which occured within two to three minutes after Dopram injection the nasoendotracheal tube was removed easily and without stridor.

Dopram has been invaluable to our practice of safe anesthesia in the four situations described above and has smoothed the recovery period in cases where we have had mass casualties and a shortage of personnel in the recovery room. Dopram is only approved for post anesthesia uses and should only be used (as any drug) with full knowledge of its contraindications as well as its uses. The contraindications are well and fully described by the ethical pharmaceutical manufacturer (A. H. Robbins Pharmaceutical Co., Richmond, Va.). I believe that this should be made available for use by anesthesiologists at some of our Evacuation Hospitals in Vietnam.



SENSITIVITY OF SHIGELLAE TO VARIOUS ANTIBIOTICS

Captain John P. Heggers, MSC, and Major Creed D. Smith, MSC*

The development of resistance by pathogenic bacteria to antibiotics is of continuing concern. In such cases it is often necessary to select chemotherapeutic agents other than the drug of choice. Since Shigellae have been the organisms recovered most frequently from enteric specimens submitted to the 9th Medical Laboratory, it seemed of interest to determine the sensitivity of the several groups to a variety of antibiotics.

One hundred isolates representing the 4 Shigella and alkalescensdispar groups were tested for their sensitivity to 12 different chemotherapeutic agents. The lowest concentration discs commercially available were employed except for colymycin, polymyxin B and erythromycin. In these three the highest concentrations were employed because the lower values were not available to this laboratory.

The results of these tests are presented in Table 1. Since 100 isolates were tested, the numbers in the columns headed sensitive or resistant may also be considered percentile figures.

TABLE 1

Sensitivity of Shigella Isolates to 12 Different Antibiotics

ANTIBIOTIC	CONCENTRATION	SENSITIVE	RESISTANT
Keflin	30mcg	99	1
Polymyxin B	300u	97	3
Kantrex	30mcg	97	3
Colymycin	10mcg	96	4
Polycillin	10mcg	89	11
Neomycin	5mcg	85	15
Erythromycin	15mcg	70	30
Tetracycline	5mcg	54	46
Chloromycetin	5mcg	54	46
Streptomycin	2mcg	30	70

As may be seen the isolates exhibited the same relative sensitivity to Keflin, polymyxin B, Kantrex and colymycin. As noted above only the highest concentration disc of colymycin and polymyxin B were available. The disc concentrations employed were 10mcg and 300u respectively. Thus results obtained with these two drugs cannot necessarily be equated with those obtained with Keflin and Kantrex. It is to be noted that approximately one-half of the isolates were resistant to tetracycline.

It is recognized that the results of these tests cannot be directly related to in vivo effects. However, they do serve to provide guidance in the selection of appropriate therapy. While information concerning which antibiotics are being employed and their clinical effectiveness was not available, it is suggested that these results indicate that tetracycline is not the drug of choice in the treatment of shigellosis in Vietnam.

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IN-COUNTRY MEDICAL REGULATIONS

In visiting medical facilities through Vietnam we find in many units there is a definite problem of maintaining an adequate working file of medical regulations. In certain instances it is simply a matter of knowing what regulations have been published. Set forth below is a listing of USARV regulations and circulars and also MACV directives. The list is complete and current as of 1 April 1967. We hope it will be of assistance to you in the maintenance of your own regulation files.

USARV REGULATIONS

NUMBER:	DATE:	TITLE:
40-1	29 Oct 65	Sanitation Standards for Barber Shops
40-2	19 Aug 66	Medical Items Requiring Special Storage & Issue Precuations
40-4	23 Oct 65	Drug Prevention of Malaria
40-4	22 Apr 66	Change 1
40-5	1 Apr 66	Reporting & Processing Medical Materiel Complaints
40-6	7 Mar 66	Prevention & Control of VD
40-7	2 Nov 65	Immunization Requirements & Procedures
40-7	21 Jun 66	Change 1
40-8	17 Oct 66	The Admission and Disposition Sheet
40-9	18 Jan 66	The Management of Vascular Injuries
40-9	31 Aug 66	Change 1
40-10	9 Feb 66	Patient Effects in Medical Treatment Facilities
40-11	3 May 66	Treatment of Vietnamese Civilian Nationals in US Army Military Medical Facilities
40-13	11 Feb 66	Medical Clearance
40-14	7 Jan 66	Medical Records & Reports
40-14	20 Feb 66	Change 1
40-14	11 Mar 66	Change 2
40-14	28 Mar 66	Change 3
40-14	16 May 66	Change 4
40-14	15 Aug 66	Change 5
40-14	16 Aug 66	Change 6
40-15	10 Sep 65	Rabies Control & Reporting of Animal Bites
40-15	6 Dec 65	Change 1
40-17	23 Nov 66	Army Medical Service Officer's Biographical Data File
40-18	10 Oct 65	Space Utilization & Construction Priorities for Hospitalization Units
40-19	12 Oct 65	Field Sanitation Teams
40-21	6 Apr 66	Early Treatment of Wounds & Injuries
40-22	23 Oct 65	Individual & Unit Protective Measures
40-22	11 Jan 66	Change 1
40-23	30 Oct 65	Participation of AMEDS Personnel in Aerial Flights
40-23	23 Jan 67	Change 1
40-24	18 Jan 66	Command Health Reports
40-25	28 Aug 66	Medical Specialty Board Examinations
40-26	4 Jan 66	Whole Blood Program
40-27	7 Dec 65	Anesthesia
40-28	26 Dec 65	Prevention & Treatment of Heat Illness
40-29	25 Jan 66	Care of the Feet
40-30	2 Mar 66	Requisitioning & Use of Certain Medical Materiel
40-30	9 Apr 66	Change 1
40-31	28 Jan 66	Mess Sanitation

REGULATION NUMBER:	DATE:	TITLE:
40-32	30 Apr 66	Sanitation - Waste Disposal
40-33	4 Feb 66	Treatment of Malaria
40-34	30 Mar 66	Mental Health & Neuropsychiatry
40-35	19 Feb 66	Dental Service Administration & Treatment
40-36	20 Mar 66	Preventive Medicine Unit Services
40-37	6 Apr 66	Subsistence Reimbursement for Hospitalization
40-38	7 Mar 66	Preventive Dentistry Program
40-39	8 Mar 66	Medical Civic Action Programs
40-40	11 Mar 66	Control of Patient Visits & Interviews
40-41	8 Apr 66	Disposition of Certain Medical Materiel
40-42	5 Jul 66	Wound Evaluation & Analysis
40-42	27 Jan 67	Change 1
40-43	25 May 66	Medical Qualification Requirements for Aviation Personnel
40-44	23 May 66	Medical Regulating
40-45	7 Jan 67	Water Supply
40-417	26 Dec 66	Medical Statistical Summary
40-657	13 Sep 66	Inspection & Procurement of Indigenous Food Products & Inspection of Food Sources & Facilities
40-905	17 Nov 66	Veterinary Service for Military Dogs
59-1	26 Oct 65	Aeromedical Evacuation
USARV CIRCULARS:		
40-1	4 Nov 66	Medical Service
MACV DIRECTIVES:		
40-1	17 May 65	Medical Procedures for Reception and Processing of Detained Personnel
40-2	27 Sep 66	Persons Eligible for Medical Care
40-2	8 Nov 66	Change 1
40-3	21 May 66	Emergency Medical Support
40-5	9 Aug 65	Medical Service US Forces in RVN
40-6	30 Jan 66	Patient Evacuation (Medical Regulating)
40-8	14 Dec 65	MACV Morbidity Report (RCS: MACMD-03)
40-9	28 Dec 65	Medical Civic Action Program (MEDCAP)
40-10	18 Jan 66	Aerial Dispersal of Insecticides
40-10	16 Sep 66	Change 1
40-11	21 Aug 66	Prevention of Malaria
40-12	20 Sep 66	Prevention and Control of Venereal Disease
40-12	8 Nov 66	Change 1
40-13	26 Oct 66	Immunization Requirements
40-13	16 Feb 67	Change 1
40-14	14 Nov 66	Medical Care for Vietnamese Nationals at US Medical Facilities
40-15	29 Dec 66	Sanitary Standards for Water and Ice
40-16	20 Jan 67	Food Service Sanitation
40-17	1 Feb 67	Waste Disposal

44TH MEDICAL BRIGADE NEWS

Welcome to the Brigade Commander: In a ceremony on 29 May, Colonel Frederick W. Timmerman, formerly Command Surgeon, Headquarters, STRIKE Command, assumed command of the 44th Medical Brigade. Major General Charles W. Eifler, who officiated at the ceremony, awarded the Legion of Merit to the departing commander, Colonel Ray L. Miller. Colonel Miller was also the recipient of the Technical Service Honor Medal, First Class, presented by Colonel Hoan, Chief Surgeon, Republic of Vietnam Armed Forces.

Other Command Changes: Numerous command changes have recently taken place within the Brigade. LTC Henry Cosand is now acting CO of the 55th Medical Group and LTC Phillip H. Welch is commanding both 71st Evac and the 18th Surg following the departure of Mark T. Cenac. LTC Armin G. Dycaico has replaced LTC Elbert B. Fountain as commander of the 70th Medical Battalion, MAJ John E. Rafferty is the new commander of the 7th Surg and LTC Kenneth R. Dirks has taken over the 406th Mobile Laboratory. COL Hinton J. Baker is the new CO of the 9th Med Lab and LTC Norman J. Glucksman is now in command of the 4th Med Det (Vet). Command of the 32nd Med Depot was assumed by LTC Richard S. Rand following the departure of COL William W. Southard.

Other Newcomers: The newly assigned Group Exec Officers include, LTC Roy L. Bates, 55th Group; LTC Robert M. Gerber, 68th Group; and LTC Reinhardt H. Kaddatz at the 43rd Group. Also new to the 43rd Group is LTC Owen W. Austin, who is the S-4. Among Evac hospitals' new XOs are, LTC Kenneth Lucas, coming to the 12th Evac from White Sands Missile Range; MAJ Robert L. Frus, with the 71st Evac; LTC Wallace L. Duvall, with the 36th Evac; and MAJ Gerald J. Sperling, with the 67th Evac, replacing LTC James B. Ranck who has moved to the 55th Group as S-3. Recently assigned as XO at the 8th Field is LTC Robert H. Eagon. In the XO position at the 17th Field is MAJ Edward R. Brophy Jr and LTC Samuel Pemberton is the XO at the 6th Conv Center.

LTC Robert E. Miller, Deputy Commander at Brigade Headquarters, should be well known by this time due to his extensive travels which have taken him to the majority of the Brigade medical units. LTC William H. Young Jr has replaced MAJ Herbert F. Dorsett as S-1 and LTC George Caras has replaced LTC Erwin Zimov in the S-4 shop. The positions of Staff Dental Surgeon and Staff Veterinarian are now occupied by COL Jack P. Pollock and COL Richard B. Morgan respectively. Other new arrivals include MAJ Mary A. Armstrong, who replaced the departed LTC Patricia L. Accountious, as Staff Dietitian; CPT John S. Timberlake III, Asst Operations Officer; CPT Joseph F. Constable, Medical Stat Officer; and CPT David N. Sorem, Medical Supply. The new MRO for the Brigade is MAJ Gaylord E. Ailshie.

Hospital Openings: On 1 June the 3rd Surg opened to receive patients at its new location at Dong Tam and prepared to support operations in the Delta. This hospital is the Brigade's Second MUST Unit and all of its personnel, under the command of LTC Theodore R. Sadler, can be proud of their part in the rapid establishment of its facilities. An unusual feature of its configuration and a first in MUST history is the Establishment of a Dental Expandable Shelter to accommodate the first MUST dental clinic.

Also, on 1 June, the 71st Evac became operational and began receiving patients on a limited scale. The personnel of the unit can be justly proud of their endeavors and accomplishments.

The 2nd Surg moved from An Khe to Chu Lai. This unit's support of Operation Oregon is also deserving of praise. Compliments and congratulations on a tremendous job are in order for this dedicated group.

EDITORS NOTES

Newsletters published from time to time by individual hospitals or other medical units in Vietnam have certain discrete functions that are not served in any other way. There is the matter of unit pride and esprit that is served by the publishing of a record of group accomplishment and effective functioning. There is value in writing a newsletter simply as a matter of taking stock of where the unit is, figuratively speaking, in all of its functions.

There is usefulness to members of other similar units who receive such a communication in terms of confirmation of their own functioning and acquisition of new ideas. There is support to persons within the unit in terms of a larger view of function and purpose that may not always be visible to the individual worker. There is value to present and past members of the unit in terms of a record of a part of one's life.

Several Newsletters from various medical units in Vietnam have been noted. Considerable talent and effort have gone into these publications, and at times the material published has been of professional interest and importance to medical officers throughout the combat area. In such instances republication in the USARV Medical Bulletin will give access to the material to all AMEDS officers in Vietnam, as well as to many of those soon to arrive. One example of this is the article in this issue on Eye Diseases and Injuries In Vietnam by Marvin Goldstein. CPT Goldstein originally presented this material in a talk to the staff of the 85th Evacuation Hospital; later it was published in the 85th Evac Newsletter.

It is requested, in addition to the invitation given by the USARV Surgeon in the masthead on page 60, that hospital and other medical unit commanders forward to the editor a copy of all newsletters published in order to aid in the preservation and dissemination of pertinent medical information. Individual authors will be contacted for permission to reprint their material.

MILITARY MENTAL HEALTH CONFERENCE

On 12 and 13 May 67 a Military Mental Health Conference was held at the 6th Convalescent Center, Cam Ranh. The conference, sponsored by USARV and hosted by the Convalescent Center, was opened by COL Enrico D. Carrasco, Commander of the 43rd Medical Group. It was attended by some 40 mental health professionals including psychiatrists, social workers, psychologists, and psychiatric nurses. In addition to many members from the US Army, Navy, and Air Force there were also representatives of the Army of the Republic of Korea and the Army of the Republic of Vietnam.

Speakers for each service and national group presented their mental health programs in descriptive form. There were siminar-discussions on the subjects of division area psychiatry and the work of the psychiatric (KO) team. A number of individual papers were read.

The conference provided opportunity for considerable exchange of professional information and for the establishment of further channels of communication and cooperation within and between services. The participants voted into existence an informal organization, The Military Mental Health Society of Vietnam.

NEW ARRIVALS

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
CLARKE, Patricia M.	MAJ	ANC	2 Mar 67	91st Evac Hsp
SUBE, Janis	MAJ	MC	27 Mar 67	67th Evac Hsp
GLUCKSMAN, Norman J.	LTC	VC	29 Mar 67	4th Med Det, VFI
AUSTIN, Owen W.	LTC	MSC	29 Mar 67	43d Med Gp
TIERCE, Millard L.	LTC	VC	30 Mar 67	4th Med Det
CONNEY, Henry F.	LTC	MSC	30 Mar 67	44th Med Bde
RAND, Richard S.	LTC	MSC	30 Mar 67	32d Med Depot
SPENCER, Violet P.	MAJ	ANC	1 Apr 67	85th Evac Hsp
MORGAN, Richard	COL	VC	2 Apr 67	44th Med Bde
BAKER, Hinton J.	COL	MC	3 Apr 67	9th Med Lab
YOUNG, William H.	LTC	MSC	8 Apr 67	44th Med Bde
TORP, Richard P.	LTC	MC	15 Apr 67	173rd Abn Bde
MAUS, Walter P.	LTC	DC	19 Apr 67	39th Med Det
GORE, Eugene	LTC	DC	20 Apr 67	437th Med Det, KJ
ARMSTRONG, Mary A.	MAJ	AMSC	21 Apr 67	44th Med Bde
SCHROEDER, Gerald	LTC	VC	22 Apr 67	4th Med Det
LAUBSCHER, John W.	MAJ	MSC	22 Apr 67	25th Inf Div
OLIVIERI, Americo	LTC	DC	24 Apr 67	40th Med Det
HUXSOLL, David L.	MAJ	VC	28 Apr 67	9th Med Lab
GRIDLEY, John S. Jr.	MAJ	MSC	28 Apr 67	51st Fld Hsp
FRANSDAHL, Donald	MAJ	DC	29 Apr 67	40th Med Det
POLLOCK, Jack P.	COL	DC	2 May 67	934th Med Det
LUCUS, Kenneth	MAJ	MSC	2 May 67	12th Evac Hsp
MOORE, Daisy E.	MAJ	ANC	2 May 67	17th Fld Hsp
LEIFHEIT, Howard G.	LTC	MSC	3 May 67	9th Med Lab
MCKINNEY, Robert W.	LTC	MSC	3 May 67	9th Med Lab
YOUNG, William W.	LTC	MSC	3 May 67	9th Med Lab
BUTKUS, Donald E.	MAJ	MC	5 May 67	71st Evac Hsp
LAROCK, Ethel B.	MAJ	ANC	8 May 67	12th Evac Hsp
NELSON, Dorothy I.	MAJ	ANC	9 May 67	91st Evac Hsp
MAJOR, John E.	MAJ	MC	12 May 67	93d Evac Hsp
DANIELS, Jon L.	MAJ	DC	12 May 67	39th Med Det, KJ
BLOOMQUIST, Paul A.	MAJ	MSC	14 May 67	498th Med Co
FRUS, Robert L.	MAJ	MSC	15 May 67	71st Evac Hsp
BLINKA, Charles F.	LTC	DC	16 May 67	40th Med Det, KJ
LEBOURDAIS, Robert	MAJ	DC	16 May 67	437th Med Det, KJ
VOLKMANN, James A.	MAJ	DC	21 May 67	137th Med Det
HORSLEY, Norma P.	MAJ	ANC	22 May 67	24th Evac Hsp
BERND, Basil	MAJ	ANC	22 May 67	24th Evac Hsp
VILLACANA, Alfred A.	MAJ	DC	26 May 67	39th Med Det, KJ
BREWER, Jerry R.	MAJ	MSC	26 May 67	406th Med Lab
UPHAM, Robert W. Jr.	MAJ	MSC	29 May 67	20th Pvnt Med
SLYMAN, George L.	MAJ	MSC	30 May 67	32nd Med Det
AILSHIE, Gaylord E.	MAJ	MSC	31 May 67	44th Med Bde
WAHLEN, George E.	MAJ	MSC	31 May 67	HQ USARV
GALLEGOS, Reuben A.	MAJ	MSC	31 May 67	6th Conv Center
ROTH, Alice	MAJ	ANC	31 May 67	45th Surg Hsp

GARY P. WRATTEN MEMORIAL DEDICATION

45th Surgical Hospital (MUST)

Tay Ninh, Vietnam; 18 April 1967

Attending the memorial dedication at the US Army's 45th Surgical Hospital are, from left: Major Marion P. Johnson, MSC, Adjutant of the 44th Medical Brigade; Brigadier General James A. Wier, Surgeon, US Army, Vietnam: and Major Charles M. Lyons, MC, Commanding Officer of the 45th Surgical Hospital.

US Army Major Gary P. Wratten, MC, a talented surgeon and former commander of the hospital, died when struck by a fragment during a mortar attack at the hospital early on the morning of 4 November 1966. The memorial was raised on the hospital grounds by the staff he commanded. It is of oriental design and consists of a torii with a bell suspended above an inscribed plaque. It was dedicated to the memory of Major Wratten by General Wier.

ROTATION OF MEDICAL CORPS OFFICERS

The in-country rotation policy concerning Medical Corps officers was stated in the March-April issue of the Bulletin. The shortage of medical officers in MOS 3100 continues Army wide and is reflected in the replacements arriving in USARV. Because of this overall shortage and a preponderance of highly trained personnel there are at present few opportunities to move officers with 3100 MOS into hospitals.

Medical Officers with 5 to 6 months service in a combat unit may submit a request for transfer to a support unit. It should be understood, however, that a replacement must be available, that there is no assurance of an assignment to a hospital, and that available vacancies in the 44th Medical Brigade may be in dispensaries or clearing companies.

USARV MEDICAL BULLETIN

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Deputy Surgeon, USARV
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Surgical Consultant

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The USARV Medical Bulletin is published bimonthly by Headquarters, United States Army Vietnam as the medium for disseminating material of professional and administrative interest to all medical personnel of USARV. Information in this publication is for use by this command and does not necessarily reflect the opinion of Department of the Army, the USARV Surgeon, or the editors.

The Surgeon, USARV, invites all members of the Army Medical Service including the Medical Corps, Dental Corps, Veterinary Corps, Medical Service Corps, Army Nurse Corps, Army Medical Specialist Corps, and enlisted personnel, as well as other members of the medical professions in Vietnam, to submit articles to be considered for publication in the Bulletin.

Items submitted for publication should be typed single spaced in final corrected form and addressed to the Editor, USARV Medical Bulletin, HQ., USARV, Office of The Surgeon, APO 96307. If typing is not available your legibly handwritten manuscript will be considered. Accepted manuscripts become the property of the Bulletin. Authors are urged to retain a carbon copy of each manuscript. The editors reserve the privilege of review and editorial modification. Photos submitted to illustrate your article or to depict some aspect of AMEDS in Vietnam should be good quality, good contrast, black and white glossy prints. Photographs of patients should be accompanied by a witnessed signed release. Photos used are US Army photos unless otherwise credited.

THE VIEW FROM THE REAR

Captain Noel A. Miller, MSC

It is a typical day in the office, not unlike any other day before it or that is yet to follow. Prodigous piles of paperwork flow smoothly from desk to desk, and an ancient ceiling fan labors valiantly in its attempt to push into motion the stifling mugginess that floods the room. Lieutenant Luckless is just dropping a perspiration splotched DF into his hold box for retyping when the resigned tranquility of the office is shattered by Colonel Castigation, whose movement from his sanctum sanctorum is accompanied by traces of artificially refrigerated atmosphere and stale cigar smoke.

"Lieutenant, something important has just come up. I want you to get me Colonel Caliper on the phone as soon as possible."

The lieutenant's face blanches. "Please sir, not the phone!"

"I'm sorry, I have to speak with him right away."

"Couldn't we send him a twx or something?"

"Good heavens, man! He's only a mile or so down the road." Then the Colonel's face softens with compassion. "Well, give it a try, anyway." And the sanctum door closes firmly.

The Lieutenant hitches himself to the telephone with a resigned sigh. The receiver trembles slightly in his grasp. "Sweetpea, give me Mudhole please."

"I'm sorry, sir, Mudhole is busy now."

"Then give me Hildegard please."

Moments pass, then a crackling voice responds, "Hildegard."

"Hildegard, give me Mudhole."

"Mudhole is busy right now. I'll give you Snigglefritz." Clicks, whines and buzzes fill the air. Snigglefritz answers from across the miles.

"Snigglefritz, give me Mudhole."

"Sorry sir, our line to Mudhole was washed out last month during the rains. Our CO is using the leftover wire for a clothesline." Lieutenant Luckless quietly hangs up the phone. A sob escapes escapes him. Then drawing upon some hidden reserve of strength he again reaches for the receiver, and quiet desperation fills his voice:

"Sweetpea, give me Mudhole."

Time passes and tension mounts. Previously unknown switchboards are tapped in fruitless attempts to outflank the obstinate mile of wire. "Priority" and then "Immediate" precedents are used with equal lack of success, as a key switchboard fails to respond. Interim conversations are encountered. The Lieutenant is apprised of a fire support mission 100 miles to the north. Half an inning of Cleveland Indians baseball and a Tokyo weather report are absorbed. The Lieutenant speaks briefly with a captain who is coordinating a flight to Bangkok and a mess sergeant who is ordering supplemental rations. Out of spite he confirms delivery on 10 cases of dehydrated potatoes and 20 gallons of ice cream. Finally a welcome voice answers: "Mudhole."

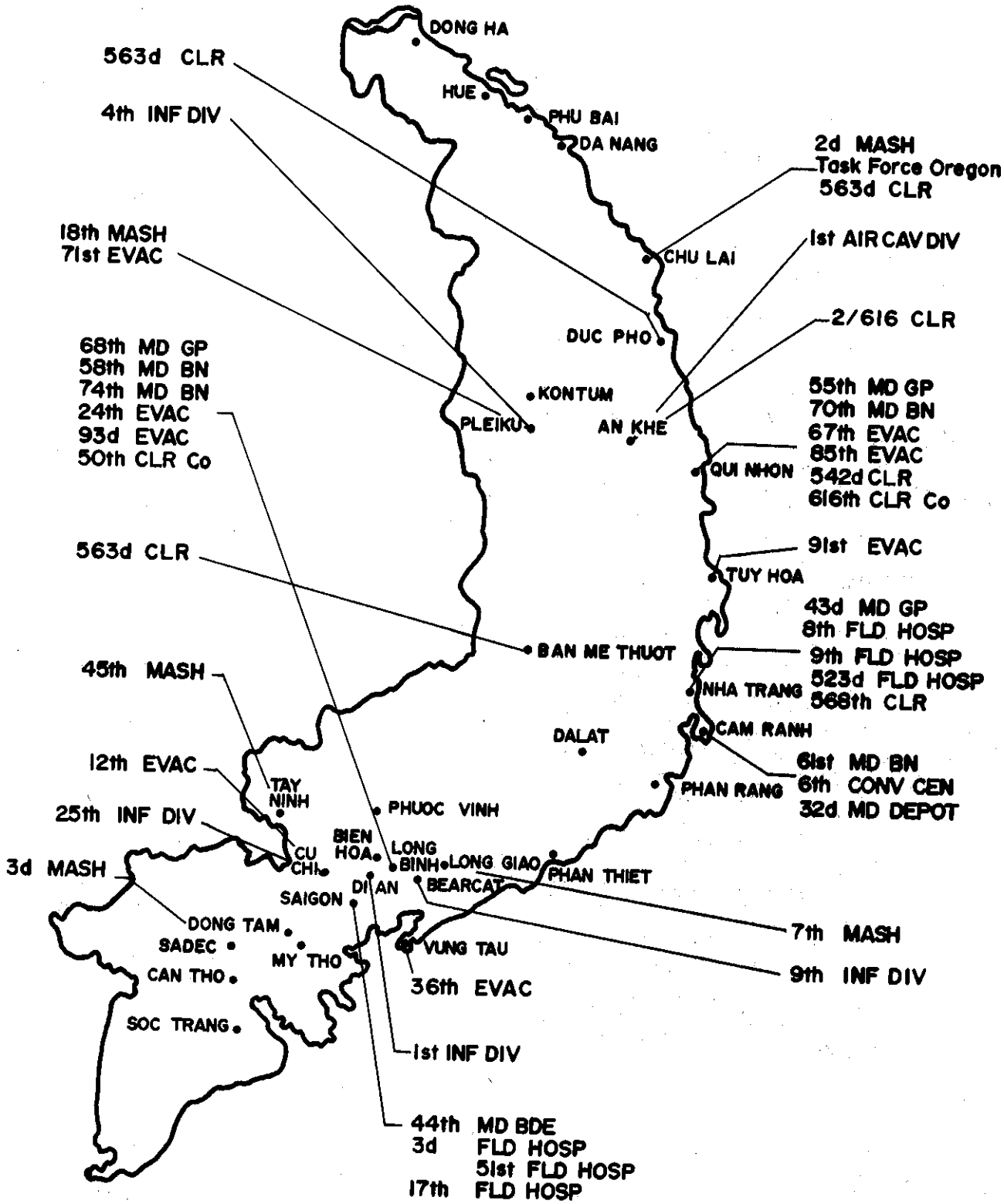
"Mudhole, give me 2085 for Colonel Caliper."

A distant ringing is heard and a distant receiver is raised. "Colonel Caliper speaking."

"Sir, hold one please for a call from Colonel Castigation."

"That's impossible. He's in my office right now."

Wildly the lieutenant looks up from his over flowing ashtray. The door to the sanctum sanctorum is open and the chair of chairs is empty. An NCO shrugs apologetically. "I've been trying to tell you sir. The Colonel left half an hour ago. He said to forget the call."


DONG HA
563d CLR
HUE
4th INF DIV
PHU BAI
DA NANG
2d MASH
Task Force Oregon
563d CLR
18th MASH
71st EVAC
CHU LAI
1st AIR CAV DIV
DUC PHO
2/616 CLR
68th MD GP
58th MD BN
74th MD BN
24th EVAC
93d EVAC
50th CLR Co
KONTUM
PLEIKU
AN KHE
55th MD GP
70th MD BN
67th EVAC
85th EVAC
QUI NHON
542d CLR
616th CLR Co
563d CLR
91st EVAC
TUY HOA
43d MD GP
8th FLD HOSP
BAN ME THUOT
9th FLD HOSP
523d FLD HOSP
NHA TRANG
568th CLR
45th MASH
DALAT
CAM RANH
12th EVAC
61st MD BN
6th CONV CEN
32d MD DEPOT
TAY NINH
PHAN RANG
25th INF DIV
PHUOC VINH
BIEN HOA
LONG BINH
LONG GIAO
PHAN THIET
3d MASH
CU CHI
DI AN
BEARCAT
SAIGON
7th MASH
DONG TAM
SADEC
MY THO
VUNG TAU
9th INF DIV
CAN THO
36th EVAC
SOC TRANG
1st INF DIV
44th MD BDE
3d FLD HOSP
51st FLD HOSP
17th FLD HOSP

PPC-Japan