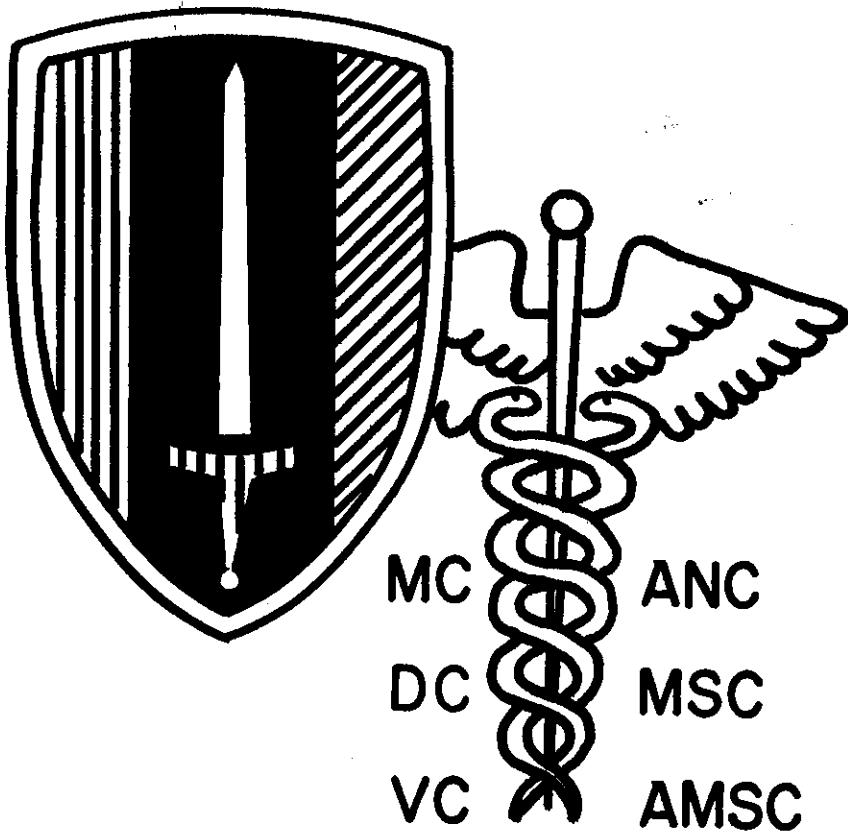


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"...to conserve the fighting strength...."



The 2d Surgical Hospital (MASH), An Khe

The 2d Surgical Hospital, a part of the 55th Medical Group of the 44th Medical Brigade, is located on the lower slope of Hong Kong Mountain at the base camp of the 1st Cavalry Division (AM).



DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY VIETNAM
APO SAN FRANCISCO 96307

IN REPLY REFER TO

SALUTE TO THE 44TH MEDICAL BRIGADE

The job of the 44th Medical Brigade, the first medical brigade operational in combat, has been a big one. This Brigade, which has command and control of all medical units in country except those organic to divisions or separate brigades, has welded together a medical support team for the combat soldier second to none in the history of warfare.

The services of the 44th Medical Brigade touch the lives of every soldier in Vietnam, most directly and most obviously through patient care in its excellent hospitals, clearing companies and dispensaries, and the "Dust-Off" medical evacuation helicopters. Less obviously, but no less importantly, it makes its presence felt through its activities in preventive medicine and sanitation, in veterinary inspection of food and animals, in medical supply for all units of USARV, and in planning and executing medical support of combat troops.

The first elements of the Brigade arrived in Vietnam a year ago on 18 March 1966. During the first year of operations the number of units in the Brigade has doubled, and they now total more than 120.

On the anniversary of their first year of operation, I would like to commend all the officers and men of each unit of the 44th Medical Brigade on a job well done. Complementing the dedicated work of the medics of the combat units, you of the 44th have formed a medical team with high standards of performance and selfless devotion to duty of which all in the Army Medical Services can be justly proud.

James A. Wier
JAMES A. WIER
Brigadier General, MC
Surgeon

ON GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY

Captain Jack C. Cooksey, MC*

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What follows is a summary of certain aspects of glucose-6-phosphate dehydrogenase deficiency---hereinafter called, "G6PD deficiency,"---based on the two references given at the end of this article; the list of drugs precipitating or exacerbating hemolysis is taken from the article by Hsia.

In 1952, it was observed that about ten percent of Negroes given primaquine as an antimalarial agent developed intravascular hemolysis; most Caucasians escaped this primaquine effect. Subsequent research directed toward the elucidation of this idiosyncratic primaquine sensitivity established the following:

- 1) That primaquine-sensitive hemolysis is determined by an intrinsic abnormality of the red cells in sensitive individuals;
- 2) That this abnormality is associated with low levels of reduced glutathione in sensitive cells, which is apparently caused by a deficiency of glucose-6-phosphate dehydrogenase activity in such cells;
- 3) That the red cells of sensitive individuals have an abnormally short life span even in the absence of drug exposure;
- 4) That the young red cells of a sensitive individual contain a greater G6PD activity than the old ones, and are less sensitive to primaquine induced hemolysis.

The genetic defect underlying these biochemical and hematologic abnormalities is inherited, in the majority of cases, in a pattern of sex-linked partial dominance: Affected males show the typical biochemical deficiencies and clinical syndrome; heterozygous females show intermediate red cell G6PD levels in most instances, and may or may not exhibit the clinical syndrome; homozygous females behave biochemically and clinically as affected males do. About thirteen percent of American Negro males are affected; it has been estimated that 16 to 20 percent of American Negro females are heterozygous for the trait. Two other high risk groups with the same mode of inheritance are Asiatic Jews, and Mediterraneans. Other racial groups have a low incidence of a similar clinical syndrome; and there appear to be at least two other modes of inheritance in addition to sex-linked partial dominance.

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The most plausible pathogenetic explanation for drug-induced hemolysis in sensitive individuals is as follows. A near-normal level of reduced glutathione is necessary for a normal red cell life-span; oxidized glutathione is reduced by a TPNH-linked system, with concomitant production of TPN; TPNH is regenerated from TPN during oxidation of glucose-6-phosphate to 6-phospho-gluconic acid by G6PD. A deficiency of G6PD lowers the maximum possible regeneration rate of TPNH from TPN; this, in turn, lowers the maximum possible rate of regeneration of reduced glutathione from oxidized glutathione. Most chemicals that produce hemolysis in G6PD-deficient individuals are biologic oxidants. When introduced into red cells, they increase the rates of oxidation of various cellular constituents. In G6PD-deficient cells, the compensatory biochemical reduction rate is limited by G6PD deficiency, and hemolysis occurs.

The typical clinical episode of drug-induced hemolysis in G6PD deficient individuals can be partially understood by reference to the above facts. If a G6PD-deficient individual is exposed to a constant daily dose of 30 mg of primaquine, events develop as follows:

- 1) There is an initial lag of a few days before significant hemolysis develops. Red cell glutathione levels fall during this period.
- 2) From about day 4 to day 8 there is an abrupt fall in hematocrit, with subsequent rise in reticulocyte count.
- 3) Over the next 2 to 4 weeks, the hematocrit rises, and reticulocyte count falls, despite continuance of primaquine at the same dose level.
- 4) After primaquine is discontinued, a four to six month period must elapse before acute hemolysis of the same severity can take place on re-exposure.

The acute episode is apparently limited by the replacement of old red cells by young ones. As a practical point, it may be noted that a screening test for G6PD-deficiency is theoretically less apt to be positive in the sensitive individual shortly after an episode of acute hemolysis. Individuals with G6PD-deficiency may suffer acute hemolysis on exposure to a variety of drugs other than primaquine (see table below). They may also suffer acute hemolysis in the absence of drug exposure; in such cases the precipitant is usually an intercurrent illness--frequently a bacterial or viral infection.

There is a qualitative screening test for the detection of red cell G6PD-deficiency, based on the rate of reduction of a colored, oxidized dye to its colorless, reduced form by a standard amount of red cell hemolysate in the presence of glucose-6-phosphate and TPN. Dr. Alan N. Goodman of the 406th Mobile Medical Laboratory tells me that this screening test is available at the following places:

406th Mobile Medical Laboratory, Saigon;
406th Mobile Medical Laboratory, Nha Trang;

946th Mobile Medical Laboratory, Long Binh;
528th Mobile Medical Laboratory, Qui Nhon.

A screening test can be done on a frozen sample of heparinized blood. If such a sample is sent to any of the above laboratories for screening, a hematocrit determination done on a simultaneously-drawn venous blood sample should accompany the tube so that appropriate correction can be made for any anemia present.

The following two case reports illustrate two extremes of severity of hemolysis in G6PD-deficiency. They are given from memory.

Case A. R. B., a 25 year old Negro male, was admitted to the 3rd Field Hospital because of a gunshot wound of the right shoulder. While in the hospital, he developed fever. A diagnosis of falciparum malaria was made by peripheral blood smear; the patient was treated with quinine and daraprim, and made an uneventful recovery. The ward physician who summarized the patient's chart prior to discharge noted that he had had a serum bilirubin of 4.0T/0.4D on admission, with a hematocrit of 36. Both these values became normal during the patient's hospital stay. A screening test was done for G6PD deficiency; "slight deficiency" was found. The patient was evacuated from Vietnam.

Comment: The patient's bilirubin elevation and mild anemia may have

Table of Compounds Inducing Hemolysis in G6PD-Deficient Individuals:

Antimalarials	Antipyretics and Analgesics
Primaquine	Acetylsalicylic acid
Pamaquine	Acetanilid
Pentaquine	Acetophenetidin
SN 3883	Aminopyrine (Caucasians)
SN 15324	Antipyrine (Caucasians)
CN 1110	
CN 1115	Sulfones
Quinacrine	Sulfoxone
Quinine (Caucasians only)	Thiazolsulfone
	DDS
Sulfonamides	Others
Sulfanilamide	Dimercaprol
N ₂ Acetylsulfanilamide	Methylene blue
Sulfacetamide	Naphthalene
Sulfamethoxypyridazine	Aminosalicylic acid
Salicylaxosulfapyridine	Phenylhydrazine
Sulfisoxazole	Acetylphenylhydrazine
	Probenecid
Nitrofurans	Vitamin K (water soluble analogues)
Nitrofurantoin	Chloramphenicol (Caucasians)
Furazolidine	Quinidine (Caucasians)
Nitrofurazone	Trinitrotoluene
	Fava beans and other vegetables (Caucasians)

been caused by his malaria. However, it is my clinical impression, based on cases seen at the 3rd Field Hospital, that malaria alone seldom causes a rise in the total serum bilirubin above 2.0 mg % without causing a moderate rise in the direct bilirubin also. At any rate, clinical suspicion was justified in this instance by the test result.

Case B. J.C., a 34 year old Caucasian male, was admitted to the 3rd Field Hospital because of malaise, anorexia and vomiting for five days, and jaundice with dark urine for two days. The patient was Jewish, with Russian grandparents. His admission laboratory work showed gross hematuria with no choluria; hematocrit 24; serum bilirubin 12T/2D; SGOT 400. The patient's hematuria rapidly subsided, and he developed choluria; his SGOT and bilirubin returned to normal within ten days, as his clinical symptoms subsided. The admission diagnosis had been infectious hepatitis; but because of the patient's anemia, and the striking elevation of indirect serum bilirubin out of proportion to the direct fraction, acute hemolysis was suspected. A screening test for G6PD was done, and "gross deficiency" was found. Over the next week the patient's reticulocyte count rose to 6.6%. He was evacuated from Vietnam.

Comment: This was a case of G6PD-deficiency in an Asiatic Jewish male, presenting as a case of systemic illness with jaundice. The patient had taken a weekly chloroquine-primaquine tablet since coming to Vietnam. He had had a five day illness with malaise and one day of questionable jaundice three months before admission; but this had subsided spontaneously, and the patient had felt well thereafter. The acute hemolysis causing his hospital admission was apparently precipitated by an intercurrent viral illness. We have had three other cases of jaundice with systemic symptoms admitted to the 3rd Field Hospital in the last two months, with diagnoses of hepatitis, later diagnosed as G6PD-deficiency with acute hemolysis. All correct diagnoses were suspected because of anemia, or elevation of total bilirubin out of proportion to the direct bilirubin elevation, or striking clearing of hyperbilirubinemia within one week; there was an elevation of SGOT to a few hundred units in two of the cases; three were Negroes. In the latter connection, it should be noted that approximately one out of ten Negroes in the Armed Forces in this country probably has G6PD-deficiency—since, as far as I know, Negroes are not screened for such deficiency before being sent here.

Summary:

Glucose-6-phosphate dehydrogenase deficiency is an inborn error of metabolism inherited in most cases as a sex-linked trait with partial dominance. Its clinical manifestations are those of acute or chronic intravascular hemolysis; acute episodes may be precipitated by a variety of drugs, or may occur with intercurrent illnesses in the absence of drug exposure. A screening test is available to military personnel in Vietnam; should a patient present evidence of unexplained hemolysis, such a test should be done. People at particularly high risk of the disease are Negroes, Asiatic Jews, and those of Mediterranean ancestry.*

REFERENCES

Hsia, D. Y., "Glucose-6-Phosphate Dehydrogenase Deficiency," in Duncan, G. G., Diseases of Metabolism, W. B. Saunders Co., 1964.

Burka, E. R., Z. Weaver, III, and P.A. Marks, "Clinical Spectrum of Hemolytic Anemia Associated with Glucose-6-Phosphate Dehydrogenase Deficiency," Annals of Internal Medicine 64 (4): 817 (April, 1966).

*Medical Consultant's Note:

The policy of The Surgeon General and of USARV concerning individuals with G6PD enzyme deficiency in malaria areas is as follows:

Personnel in malaria area who have a clinically severe hemolytic reaction to primaquine or a persistent inadequately compensated anemia related to primaquine administration should be evacuated to non-malarious areas and be precluded from further duty in endemic malaria regions by assignment of a permanent P-3 profile and appropriate geographic area limitations by a Medical Board convened under Chapter 9, AR 40-501, and recorded on DA Form 8-274.

Personnel who have transient anemia which is self-limited or whose only evidence of enzyme deficiency is based on laboratory studies may be retained in the overseas theater if, in the opinion of the responsible medical officer, they can perform satisfactory duty.



NUTRITION SITUATION IN VIETNAM

Captain Ho Van Cham, MC*

I would like to sketch, in the following lines, some main features of the nutrition situation of present day Vietnam. Emphasis will be particularly placed on traditional food processing and preservation, food consumption, and malnutrition control among civilians as well as in the military.

Introduction:

South Vietnam is a long and narrow country which is bordered on the West, at least in its upper part, by a continuous chain of mountains, the Annamitic Cordillera, which forms an immense barrier lying north-south. Because of the difference in latitude and the presence of this Annamitic Cordillera which interferes with the course of the monsoon, the difference between the southern and northern regions is pronounced as regards both temperature and meteorology. Consequently, food resources and food availability vary from locality to locality. In the meanwhile, means of transportation are precarious and poorly developed, and the distribution of surplus foods has raised several problems. The situation is furthermore complicated by a tremendous diversity, very specific to Vietnam, in matters of religion and ethics. Mahayana Buddhists, for instance, are recommended not to take animal life for foods or to partake of the flesh of such animals as had been killed for their account, and Catholic Christians usually reject from their diet some vegetarian items such as soybean cake or "tempeh" that they consider as a rather Buddhist specific foods.

So, on the surface, the nutritional status of the Vietnamese appears to be subjected to a tremendous polymorphism.

A deeper analysis, however, will reveal a common base for the study of the Vietnamese nutrition situation especially in the matter of processing and preservation of certain foods specific to the Vietnamese.

Food Processing and Preservation:

The Vietnamese enjoy a great variety of dishes deeply rooted in their traditional culture. A typical breakfast consists of a soup mixture made with rice noodles, minced beef (pho) or pork (hu-tieu) in broth, and largely spiced with nuoc mam, soy sauce, onion, pepper and other seasonings. Rice is the staple food, and is served twice a day with fish, bamboo shoots, soybean cakes, green vegetables, hot spices, and nuoc mam. Meat and eggs are well liked but rather expensive. Foods are occasionally washed down with beer or rice wine during the meal, but most Vietnamese use tea as a beverage throughout the day, especially at the end of every meal. The Vietnamese are

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addicted to rice and to the fish sauce known as nuoc mam. Soysauce, a seasoning from soybeans, is also widely in use.

Next to rice, fish is the most important staple in the Vietnamese diet. Fish processing and preservation is second only to general agriculture in importance to the national economy, ranging from salting and fermentation within the home to the nation - wide commercial scale fabrication and distribution of nuoc mam.

At home fish, shrimps, and other sea foods are usually consumed fresh. The most typical preparation procedure is the stewed fish (ca kho) which is prepared by cooking in water and fish sauce and vegetable oil or pork fat, with sugar, spices, and other seasonings.

Fish is also fried or steamed. These items are served immediately after cooking or within the day. For longer preservation, fish are smoked, or dried by heat or under sunlight, but the most typical traditional procedure is the fermentation and salting method.

For this latter process, only shrimp or salt water fish are used. Shrimps are washed and allowed to drain for a few hours, and then mixed with salt, spices, bamboo shoots, garlic, onion, rice wine, and are conserved whole or pounded to a paste. Sea fish are beheaded, scaled, washed and then mixed with salt, red pepper and other spices, and conserved in earthen jars under mechanical pressure. The fermentation process may be accelerated by exposing the jar to heat or sunlight.

On an industrial scale, the fabrication of nuoc mam constitutes a nation wide fish processing method. Nuoc mam is the result of an anaerobic autolytic processing of small sea fish in a salted medium, carried out in large wooden vats (6 feet in diameter by 6 feet deep). An approximately 1 inch layer of whole salt water fish is alternated with a similar layer of sea salt. The fish and salt layer are allowed to mix together and to stand for several months. A brownish brine with a strong odor is then drawn off from a spigot at the bottom of the vat. The brine drained at different times represents the various grades of nuoc mam that are then graded on the basis of nitrogen content. The highest quality of nuoc mam contains approximately 32 gm. of nitrogen per liter, a large part of which is free amino - acid. The nuoc mam usually contains 25 gm. of sodium chloride per liter, 100 mg fluorine per liter, some other minerals, thiamine and riboflavin. It is really the secular bowl of every Vietnamese meal and the average annual consumption approximates 2.7 liters per capita.

Apart from the nuoc mam, soysauce is also widely in use. It is a dark brown salty liquid made by the fermentation of soybeans with some additional starchy components. The process of manufacture begins with the preparation of the ingredients and includes a preliminary mold fermentation, followed by a ripening in brine. The thick, dark brown mash resulting is siphoned or pressed to produce the soysauce which is brought to a boil, filtered and distributed in bottles.

These are some foods commonly used in Vietnam. How are these foods consumed, what is the daily per capita consumption, and what have surveys shown about the incidence of various deficiency diseases in Vietnam? These questions will be discussed in the following section.

Food Consumption and Malnutrition Diseases:

In Vietnam, food intake appears to be within acceptable limits. There is practically no problem of calorie shortage or protein calorie malnutrition. It can be safely estimated that no Vietnamese eats less than 2,100 calories a day, and many, especially in the cities, eat much more. The population is addicted to rice and the amount of rice consumed is believed to be between 450 - 500 gm. per day. Protein intake in the military, as well as among civilians, exceeds 1 gm. per kg of body weight, with approximately from 60% to 80% derived from vegetable sources, primarily rice. Fat consumption is relatively low in comparison with western experience, and is true for most Far Eastern countries, ranging from 3.9 to 23.1% calories as fat among military units and from 2.8 to 18% of calories as fat among civilians. Calcium intake is variable, ranging from a relatively low value, reported by Dols, M.J.L., and quoted by May, J.M., to a very high ratio mentioned in the 1959 ICNND survey.* Iron intake is found to be within acceptable limits, in part because of the use of iron vessels in cooking, in part because of the consumption of well liked water cress. Vitamin A intake is extremely variable, ranging from 402 i.u. to 6,059 i.u. per day and per capita. In the meanwhile, thiamine and riboflavin intakes are low among enlisted men as well as among civilians of various socio-economic groups. Thiamine intake rarely exceeds 0.50 mg. and riboflavin 0.40 mg. The picture for vit. C intake is similar to that for Vitamin A, ranging from 7 mg. to 117 mg. per day and per capita. Daily niacin intake is generally satisfactory, averaging 21 mg. per capita.

In short, in Vietnam the per capita food consumption appears to be adequate. However, the average diets of the majority are still defective, according to modern nutritional principles, because they contain too much food rich in carbohydrates and too little food rich in protective nutrients, particularly in water soluble vitamins. This fact agrees very well with clinical and biochemical findings concerning deficiency diseases commonly observed in Vietnam.

Generally speaking, all those deficiency diseases are mild. The presence of malaria, tuberculosis, enteric diseases of various etiology and parasitic infestations are all of importance and mix their clinical pictures with those of malnutritional diseases.

Thiamine deficiency appears to be the most serious problem in the military as well as in virtually every civilian group which was surveyed by the ICNND in 1959. This fact is in line with the increasing consumption of highly milled rice. The practice of hand milling is giving

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way to machine milling and rice mills are rapidly spreading into rural areas. Even in the central lowlands where people are still sticking to traditional habits, few people today like to consume undermilled rice. In adults, the prevalence of bilateral loss of ankle jerk reported by the ICNND ranged from 11.2% to 18.9% for civilian males and from 5.4% to 17.1% for civilian females. In children under 15 years, the percent prevalence was about 6 in both sexes. The picture of the bilateral loss of knee jerk and calf tenderness was similar to that of bilateral loss of ankle jerk with higher values in males. The urinary excretion of thiamine was in the low range in 59% of the civilians over 14 years of age. However in spite of these widespread neurologic and metabolic disturbances, true clinical pictures of beriberi have not been commonly observed in Vietnam.

Riboflavin malnutrition is second only to thiamine deficiency in importance. Urinary excretion in adults reported by the ICNND was about 38 mcg/gm. creatinine for males and 31 mcg gm. creatinine for females whereas red blood cell riboflavin was 9.2 mcg and 9.5 mcg per 100 mc RBC for adult males and adult females, respectively. A similar situation was noticed among children from 5 to 14 years of age.

Angular lesions and angular scars have been particularly observed in the Kontum area, in the Central highlands, among the tribesmen. Nasolabial seborrhea is sometimes encountered both in military and civilian groups. The incidence of cheilosis was negligible.

Filiform papillary atrophy was reported by the ICNND as more prevalent in females than in males. Goiter was not seen in the population living in the coast, but was frequently encountered among people living in the Mekong Delta and in the Central highlands. The thyroid enlargement was more prevalent in females than in males, as one would expect.

Anemia, prevalent among various ethnic groups throughout the country, is rather related to parasitic infestations and malaria than to nutritional deficiencies. In the Kontum area, for instance, hepatomegaly, when observed, was associated with splenomegaly in most cases, and it is a reasonably safe assumption that all cases of splenomegaly observed were due to malaria.

Dental cavities in Vietnam are not prevalent, as compared with western standards. The mean number of decayed, missing and filled (LMF) permanent teeth is only from 2.7 to 7.5%. However, periodontal diseases are commonly encountered, especially among tribesmen who follow a puberty rite practice in which teeth are filed. Periodontal disease scores for these Montagnards are striking. Only 9% of the population over the age of 10 are free of diseases. The low incidence of dental cavities among the Vietnamese can be explained by the high content in fluorine of their daily diet, and by the betel chewing which has been a traditional practice for as long as four millennia.

There is no evidence of starvation, rickets, marasmus or kwashiorkor. Obesity is rarely observed and the cholesterol values reported by ICNND

were generally low, as compared with values found in western countries.

Summary and Recommendations:

In light of the above information, rice and fish have proved to be the most important staple food in the Vietnamese diet. Traditionally processed foods such as nuoc mam, soysauce and salted fermented shrimp and fish are well liked and appear to be of great nutritive value. More comprehensive scientific analysis of these items are necessary to provide data on their chemical composition, and to improve the processing and preservation technique. Off-shore and deep sea fishing should be more intensely practiced and a canning industry for surplus foodstuffs should be developed to provide for a more adequate distribution. The Saigon Fishery Institute should undertake large scale surveys in areas not now being fished by Vietnamese including the S. China Sea.

Thiamine and riboflavin deficiencies remain a serious public health problem in Vietnam. The enrichment of rice during cooking with wafers of synthetic thiamine and riboflavin practiced in the military has been shown impractical when attempted on large scale. For the time being, rice has to be imported. It is recommended that we import Premix enriched rice which showed itself successful in the Philippines in controlling thiamine deficiency, in popular acceptability, and in efficient protection against vitamin loss during the vigorous washing usually practiced before cooking. In the future, the parboiling of rice following the FAO technique* of conversion and "malekising" may constitute the most promising approach to the control of thiamine and riboflavin malnutrition in Vietnam. However trials under carefully controlled conditions must be carried out to determine clinical benefits and community acceptability.

Thyroid enlargement is not commonly observed among coastal dwellers, but it is prevalent in the Central highlands and in the Mekong Delta. The Saigon laboratory of nutrition should undergo clinical surveys for incidence and size of goiters among the population in these areas. Iodization of salt should be attempted for an adequate iodine supply to mountainous inland regions.

Anemia in Vietnam is related to factors other than nutritional patterns. Hypochromic anemia is often associated with blood loss due to hookworm infestation. Normochromic anemia is usually prevalent in areas where malaria is endemic. The malaria eradication program should be carried out extensively throughout the country and new drugs should be developed.

Although the country is now confronted with a situation that limits its ability to develop its resources to a significant extent, all these recommendations are practicable and could be realized in the very near future, given close cooperation between various governmental agencies: public health, education, agriculture, economics and rural reconstruction.

*Food and Agriculture Organization, U. N.

SNAKEBITE IN VIETNAM

Captain Louie L. Travis, MC, and Colonel Raymond W. Blohm, MC*

Classification: All poisonous snakes share the following characteristics: one or more pair of poison fangs, distinct eyes, no hind limbs, and broad belly plates. If the snake has a flattened tail, it belongs to the family Hydrophidae, the sea snakes. All others have round tails.

If round tailed, and it has non-moveable fangs located in the front part of the jaw, it belongs to the family Elapidae, which includes the cobras, kraits, mambas, and coral snakes.

If the fangs are moveable, look for a facial pit (between the eye and nostril). If present, it belongs to the family Crotalidae (the pit vipers) and includes the American rattlers, moccasins and copperheads. Also included are the Malayan pit viper (Ancistrodon or agkistrodon rhodostoma) and bamboo vipers.

If no pit is present, it belongs to the family Viperidae (the true vipers) and includes Russell's Viper, various adders, asps, etc.

Vietnamese Snakes and Characteristics: Common poisonous snakes in Vietnam include the cobra, king cobra, bamboo viper, Malayan pit viper, banded krait, and a variety of sea snakes. Russell's viper is uncommonly found in Vietnam.

Cobra (*Naja naja*)—color varies, but is often black; easily identified by virtue of its hood with its bulls-eye markings; probably causes more deaths than any other single species of snake; easily provoked to attack.

King cobra (*Naja hannah*)—the longest poisonous snake; specimens up to 18 feet reported; black with transverse yellowish bars when young. Color may fade with age; not as common as the cobra.

Banded krait (*Bungarais fasciatus*)—black and yellow bands.

Malayan pit viper (*Ancistrodon rhodostoma*)—reddish brown; dorsal area covered with a series of triangular markings; lives in shaded undergrowth, where color is excellent camouflage. By nature, this snake is quiet, not moving, coiling, or hissing as a person approaches. The Malayan pit viper is by far the most common cause of snakebite in Vietnam.

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Sea snakes -- several species of importance in Vietnam; abound in tidal rivers. In sea areas, fishermen may sort literally hundreds of these out of the nets in a day. The venom is quite powerful and the bite of a sufficiently large sea snake is said to be tantamount to a death warrant.

Bamboo viper --(Trimeresurus gramineus)-- a green snake, commonly found in trees. In Vietnam there are many harmless green tree dwelling snakes, however.

Russell's viper (Vipera russelli)--light brown; has series of large oval spots up and down its back. These spots are usually brown in the center, have a black margin and are edged in white.

Incidence: There are no accurate statistics on the incidence of snake-bite in Vietnam. The most useful information comes from Vietnamese physicians experienced in treatment of snakebite, and their impressions as to the relative frequency.

In I Corps area the terrain is brushy and many cane fields are found. Bamboo viper bites are most common here.

In the An Khe area banded krait bites are reported commonly. This is unfortunate, since these snakes are deadly poisonous with mortality rates upwards of 70% having been reported. One wonders at the accuracy of this impression, however, since kraits as said to be among the most docile of the poisonous snakes, difficult to arouse or provoke to bite. Malayan pit vipers, cobras, and bamboo vipers also are found here.

In the rubber plantations of the III Corps area the Malayan pit viper is by far and away the most common snake to bite. In the area immediately about Saigon, bamboo viper bites are most common.

In the rice paddies of the Mekong delta cobra bites are by far the most common.

In the jungle anything may be found.

Symptoms: The venoms of family Hydrophidae (the seasnakes) and Elapidae (cobras and kraits) are primarily neurotoxic and myotoxic, producing cranial nerve signs, respiratory paralysis, and a curare-like action on motor nerves.

The venoms of the families Crotalidae (the Malayan pit viper, and bamboo viper) and Viperidae (Russell's viper) are mainly hemotoxic, producing lysis of cells in capillaries and causing hemorrhage at first locally, then systemically. Other toxins produce intravascular clotting, lysis of fibrin, and clotting defects.

The cardinal sign of a viper bite is swelling at the site. It occurs within a matter of minutes to as long as (rarely) an hour after the bite, is very painful, and may be so severe as to burst the skin.

Deep pain, in the absence of swelling, indicates neurotoxic venom. Pain, when present, in the presence of fang marks, is a reliable indication that the victim was bitten by a poisonous snake. Thus, if the victim does not develop pain at the site of the bite (with or without swelling) it is presumed to have been inflicted by a non poisonous snake, provided other symptoms have not and do not develop.

Bites of cobras and kraits will be followed in a few minutes by pain and numbness at the site. Within a matter of minutes cranial nerve signs, ataxia, dyspnea, and vomiting may be experienced.

Viper bites induce local swelling, hemorrhage, and severe pain, and may be followed shortly by hemoptysis, expistaxis, bleeding gums, and bloody vomitus.

Ahuja and Singh report that lessened coagulability of the blood is useful in differentiating harmless from poisonous snake bites in India. If the patient was bitten over one half hour before, and the blood clots in less than ten minutes, viper bites can be excluded. Although the patient may survive, coagulation defects may persist for many days.

Sea snake bites may be difficult to diagnose since the snake may not have been seen, the bite felt as only a prick, swelling does not develop, and the onset of symptoms may be somewhat delayed. Sea snake bites should be considered when a person who has been in coastal waters within an hour complains of muscle aches and pains, and stiffness. The diagnosis becomes more likely when, after two hours or so, examination reveals considerable pain on passive motion of the extremities. Myoglobinuria may develop 3-6 hours following the bite. The delay between the bite and onset of symptoms in rare cases may be as long as six hours. Thus a delay of longer duration excludes sea snake bite. Also, swelling and pain at the site of the bite exclude sea snake bite.

One should recall that not uncommonly, although someone is bitten by a poisonous snake, little or no venom is actually injected. In one series of 250 Malayan pit viper bites, for example, one half had slight or no envenomation, and only one-sixth had signs of severe envenomation.

Treatment:

Treatment is directed toward two goals: remove the venom, or inactivate it. Incision and suction is of value if done immediately. In experimental situations it has been shown that if suction was started at once, up to half of the injected venom could be recovered, but if 30 minutes were allowed to elapse, no significant amount could be recovered. Incision and suction is of relatively more value for the bites of the vipers and pit vipers since their toxins produce clotting in blood vessels, destroy capillary endothelium, hence impede their own adsorption. Neurotoxic venoms are rapidly absorbed. How this works in practice is effectively demonstrated from the experience of a Mr. William Haast, an employee at the Miami Serpentarium, who, in their cobra show, faces

a 12 foot king cobra on the lawn and catches it with his bare hands. He has been bitten upwards of seventy times, and places complete reliance on antivenin, with no local treatment. On the other hand, at the Black Hills Reptile Garden, personnel have sustained 26 snakebites (mostly from rattlers) without fatality or permanent injury. Here they rely heavily on immediate incision and suction. A.C. Stimson, curator of the Houston Zoo, claims to have treated hundreds of snakebites during his lifetime, and relies exclusively on incision and suction except in cases of severe envenomation. (recall that all American poisonous snakes, except the coral snake which rarely bites, are pit vipers). Simpson's experience has led him to believe in the efficacy of placing proximal to the bite tourniquets sufficient to obstruct venous and lymphatic flow (but not afterflow) and placing bracelets of incisions around the extremity, in the swollen area, and applying suction cups. If the swelling progresses, further bracelets of incisions are made proximally. For American snakebites, he regards the antivenom as often more dangerous than the venom itself.

Our Vietnamese sources tell us that Viet-physicians place complete reliance on antisera, no matter the type of snake bite. The only antivenom the ARVN's have available are anti-ancistrodon (pit viper) and anti-cobra, made at the Pasteur Inst. in Paris. We have, in addition, available through regular supply channels, 5 antisera made by the Pasteur Inst. in Bangkok. They are anti cobra, king cobra, banded krait, Russell's viper, and Malayan pit viper (*A. rhodostoma*). An anti-sea snake venom is irregularly available.

One notices in the above list that no specific venom is available for bamboo viper. In this situation, the American made (Wyeth Co.) polyvalent antisera is helpful. Wyeth found that if horses were immunized with the venoms of three types of rattlers and the fer-de-lance, the antisera produced was capable of neutralizing the venoms of a large variety of pit vipers, implying that Crotalid venoms from all these species have antigenic similarities. Keegan found that the Wyeth serum did indeed have some protective value in mice against bamboo viper venom. It has also been reported (D.H.Mo) that the Pasteur Inst. (Paris) anti-ancistrodon venom is partially effective against bamboo viper bites. When antisera are used, one should not hesitate to use it freely, many vials if necessary. If the patient is seriously ill or in shock, giving it I.V. is both surer and faster. In general, the smaller the patient, the more antisera needed. The Vietnamese routinely give large doses of benadryl beforehand, and claim that anaphylactic reactions are almost unknown.

Reid carried out a trial of prednisone vs. antisera in the treatment of *A. rhodostoma* bites, and found that the only treatment to have any effect was the antisera. This did not influence the local reaction, but did reverse the coagulation defect (which was at the fibrinogen-fibrin level) even if given days after the bite. Epsilon amino caproic acid or fibrinogen infusions had no effect.

Antihistamines, when used alone in the treatment of snake envenomation in experimental situations, have been associated with a slightly higher mortality rate. One should not hesitate to use them, however, in conjunction with anti sera.

Cryotherapy: Proponents of cryotherapy claim that cooling of the limb delays venom absorption and lowers the rate of enzymatic destruction of the tissues. They say that it must be instituted early, before there is much tissue swelling or impairment of circulation, and that the extremity must be packed in fresh water ice, not salt water. A tourniquet is not used simultaneously. Under these circumstances, the tissues of the limb are cooled to the order of 15° C, which of itself is said not to be deleterious. Function can be resumed promptly on warming, even after a number of days. Most published observations of this method of therapy have been case reports of human snake bites, hence uncontrolled. Perry et al injected dogs with lethal and sub-lethal amounts of rattlesnake toxin, and cooled the limbs of one group for 24 hours. The experimental animals injected with lethal doses uniformly died, and those injected with sub-lethal doses developed more severe necrosis of the limb than the controls. When used with antivenom, there appeared to be some advantage in cooling the extremity if there was to be an 8 hour delay in giving antisera, but not if the delay were only four hours. They conclude that local cooling is deleterious, increasing tissue destruction. This opinion is shared by others from similar lines of evidence.

The authors of this paper do not believe any firm recommendations can be made regarding the use of cryotherapy. It may be of some value, perhaps, in buying time if there is to be a considerable delay in getting antisera into the patient. Otherwise, its value is uncertain and unproven.

What to Do:

When someone presents with the complaint of snakebite, how does one proceed? First, try to determine whether the patient was actually bitten or not. If the snake injected its venom, it must have left fang marks. If this is questionable, the character of the wound itself is most helpful. Poisonous snake bites are painful, usually becoming so within a matter of minutes after envenomation. If the patient has no systemic symptoms, and has neither swelling nor pain at the site of the bite, it is most unlikely that there was significant envenomation. The cardinal sign of pit viper and viper bites is swelling, along with severe pain. Pain, and perhaps local paresthesias or anesthesia, in the absence of much swelling, is the hallmark of neurotoxic envenomation (cobra or krait). If the patient has systemic symptoms, these are helpful. Cobras and kraits give neurotoxic symptoms with difficulty in breathing, cranial nerve signs, etc, while the vipers induce hemorrhagic symptoms.

It is helpful if the snake is available for identification. Often it is not. If the snake was black, it was likely a cobra. If green,

it was a bamboo viper. If the snake was a brownish one lying in a pile of brush, the odds are heavy that it was a Malayan pit viper. Our Vietnamese sources say that they seldom see a bona fide case of Russell's viper bite in this country. Banded kraits are said to be extremely docile, difficult to provoke into biting even if prodded or teased.

If one is sure the bite was by a poisonous snake, should one institute incision and suction? This depends on the interval between the bite and the time you see him. Most authorities agree that after 30 to 60 minutes delay, it is too late. However, some authorities point out that, especially in the case of pit viper bites, if tourniquets sufficient to occlude lymphatic return have been placed proximal to the bite and shortly after it occurred, much of the venom will still be contained in the swollen tissue of the extremity several hours later, and some may be recovered by suction. They recommend keeping a tourniquet applied tight enough to occlude venous and lymph flow, making a number of incisions circumferentially, in a bracelet-like fashion around the extremity and deep enough to cut the lymph channels, and applying suction. If the swelling progresses up the limb, further bracelets of incisions are made further proximally in the swollen tissue. Tissue relaxing incisions not uncommonly have to be made, not to institute suction, but to relieve tissue ischemia.

From the type of bite, the physician should be able to tell whether the venom was neurotoxic or hemotoxic. If neurotoxic, recall that kraits seldom bite, and king cobras are not common snakes. This leaves the cobra as the most likely offender. If the bite is clearly a viper bite, one may be able to tell which one from the patient's description or from the setting in which the bite took place. Recall that the Malayan pit viper is by far the most common one to bite in this country. In addition, the anti-*ancistrodon* antisera is said to have some activity against bamboo vipers. When there is doubt about the snake, and the patient is ill, it seems quite reasonable to the authors to use the antisera of the two most likely snakes, and to use it freely. The patient's symptomatology often provides an end point in therapy. In addition, the clotting time is said to be a useful test in gauging response to therapy in viper bites.

Finally, a warning. Anti venom should not be injected into fingers and toes, simply because of space problems. Indeed, when a finger has had venom injected into it, this in itself will induce considerable swelling. Increasing the swelling with an injection of antisera is asking for trouble, and may induce ischemic necrosis of the digit. "En Bloc" excision of snake bite areas is not recommended.

SOURCES OF INFORMATION

Some Venomous and Noxious Animals of East and Southeast Asia: 406th Medical Lab Special Report 1 July 64 (Keegan, H.L. et al)

The Malayan Pit Viper Agkistrodon Rhodostoma: 406th Med Lab Special Report
22 Mar 65 (Keegan et al).

S.E. Asian Snakebite Antivenin Studies: 406th Med Lab Res. Rep. 31 Mar 64.

Dr. D.H. Mo, Office of The Surgeon General, ARVN; personal communication.

Father Quy, herpetologist, Pasteur Institute, Saigon; personal communication.

Dr. Chaloem Puranananda, Director, Pasteur Institute, Bangkok; personal com.

Snakebite and Its Treatment: DA Technical Bulletin 8-11, 1 Aug 62.

Poisoning by Venomous Animals, Comb, Staff Conf, Am. J. of Med. 42:107, 67.

Reid, H.A. et al Prolonged coagulation defect in Malayan viper bite
Lancet 1:621, 63.

Stimson, A.C. et al The treatment of snakebite J. Occup. Med. 2:163, 60.

Perry, J.F. et al Treatment of Bites of N. Am. Pit Vipers Sou. Med J. 54:134, 61.

Lockhart, W.E., Treatment of Snakebite J. Am. Med Assn 193:336, 1965
(on cryotherapy).

McCollough, N.C. Evaluation of Venomous snake bites in the southern U.S.
from parallel clin. and lab. investigations J. Fla. Med. Assn 49:959, 63.

Snake Farm: Publication of the Thai Red Cross, Bangkok.

Poisonous Snakes of the World. Dept of the Navy Office of Naval Intelligence
ONI Study 3-62.

Kuntz, R.E. Capt, MSC, USN Snakes of Taiwan, Quart J. of the Taiwan
Museum, Vol XVI, Nos. 1 and 2, June 1963.

Antivenin Publication of Wyeth Laboratories, New York, N.Y.



TWELVE MONTHS IN VIETNAM

Captain Roger D. Gifford, MC *

During my tour with the 1st Cavalry Division in Vietnam, I have had an interesting diversity of experience.

The first seven months of my tour I was assigned as a battalion surgeon in an infantry battalion. The role of a battalion surgeon, although theoretically the same as that of World War II and Korea, has changed considerably. The battalion surgeon is still responsible for the health of his battalion and is a special staff officer to the battalion commander and advises him concerning the health and welfare of his battalion. However, the evacuation chain has been modified considerably since the Korean War. The medical evacuation helicopters evacuate most sick and wounded patients directly to the medical clearing company and not to the battalion aid station. Hence, the battalion surgeon plays only a minor role in combat casualty care in this war.

The war in Vietnam, like other wars, has turned out to be more of a "medical war" than a "surgical war." By that I mean there are more soldiers evacuated for medical illnesses than for injuries. The most common serious disease by far in the 1st Air Cavalry Division is malaria. For that reason, malaria prevention is the one most important problem of every battalion surgeon. It is part of his job to keep the battalion informed about prophylactic measures for malaria and also to perform frequent inspections of the various companies for malaria control. It is also the battalion surgeon's responsibility to keep the battalion informed on preventive measures for other common diseases, such as immersion foot and venereal disease. It is also part of his job to conduct sanitation inspections of the company areas, which includes living areas, mess halls and latrines.

The battalion surgeon also learns on occasion to treat casualties under fire. One of the few times a battalion surgeon treats casualties is when his area is attacked by mortars or small arms fire. I admit that these are not ideal conditions under which to treat casualties, but none-the-less it happens occasionally.

The battalion surgeon also takes part in civic action projects in Vietnam. Often after his battalion sweeps a village, the battalion surgeon and a couple of medical aidmen go into the village shortly thereafter, and treat the sick villagers. Most battalions also have "adopted" villages which they go to regularly and provide medical care and aid to the people in other ways.

* Formerly Battalion Surgeon, 1st Bn, 5th Cavalry; recently a member of A Company, 15th Med Bn, 1st Cav Div.

The battalion surgeon is also medical platoon leader and has approximately 30 medical aidmen under his command. These aidmen are assigned to the rifle companies as medics and are the first people to treat casualties and see that they are evacuated. I really cannot express my feeling adequately in describing the bravery and integrity of these young aidmen. They often readily and willingly risk their own lives in order to help another wounded soldier.

The last five months of my tour were spent in a medical company of the 15th Medical Battalion, 1st Air Cavalry Division. A medical company normally provides medical support for an infantry brigade, but this varies from time to time. It consists of a treatment section, which is about the equivalent of an emergency room housed in a large tent. It also has wards, which can accomodate up to 60 patients. There are facilities for taking polaroid x-rays and a small laboratory.

The first place that most battle casualties are seen by a physician, in most instances in Vietnam, is in the clearing section of the medical company. Therefore, a physician working in a medical company does get to treat a fair amount of trauma, especially if the troops are actively engaged in combat. There are 3 common wounds: gun shot wounds, fragment wounds and punji stake wounds.

There are many medical problems seen in Vietnam. Malaria has already been mentioned as a major casualty producer. Most cases of malaria are Plasmodium falciparum type as vivax malaria is effectively prevented by the weekly consumption of a Chloroquine-Primaquine tablet, which every soldier in the 1st Cavalry Division takes. Scrub typhus is also seen quite frequently. It is quite easily diagnosed clinically if an eschar is present, and effectively treated with 500 mg of Tetracycline four times a day for 7 days.

Venereal Disease is also seen quite frequently. Gonorrhea is the most common type of venereal disease seen and is usually effectively treated with 2.4 million units of procaine penicillin daily for 2 days. Chancroid is probably the second most common venereal disease seen in Vietnam. It will respond well to 10-14 days of Gantrisin therapy in most cases. Lymphogranuloma venereum and granuloma inguinale are seen occasionally and both respond to tetracycline therapy. Syphilis is seen rarely, mostly in the primary stage. However, we have seen at least one case of secondary syphilis in the past 3 months at our medical company. Condyloma accuminata is seen frequently and is treated effectively by touching the lesions with 10% to 20% podophyllin solution.

Skin diseases are also a big problem in Vietnam. Most of the skin problems come under one of the following categories: pyoderma, fungal infections, wet injury (tropical immersion foot) or rashes secondary to systemic disease. On those occasions when the infantrymen are unable to keep adequately clean skin infections become much more likely. Many of

the cases of pyoderma can become quite severe, and it often takes 2 or 3 weeks of care in the hospital before the patient is ready to return to duty. Wet injury to the feet (tropical immersion foot) is a condition seen in soldiers, who have been exposed to prolonged periods of moisture. The skin becomes macerated and breaks down, often becoming secondarily infected. Most cases are easily and effectively treated by keeping the feet dry and using foot powder plus treating any infection. They usually clear up in 3 to 5 days. (See Comment 1.) Most fungal infections are in the form of tinea pedis or tinea cruris and these are responsive to either Desenex ointment or 3% Vioform ointment. (See Comment 2.) There are also quite a large number of cases of Tinea versicolor. These have been particularly difficult to get rid of, but some cases are effectively treated using selenium sulfide shampoo. We have also seen some of the more rare types of skin problems such as cutaneous leishmaniasis (oriental sores) and cutaneous larva migrans. (See Comment 3.)

Diarrhea is also a problem seen quite commonly in the troops. Most cases respond to symptomatic treatment with Kaopectate and paregoric. However, there are quite a number of chronic diarrhea cases. Many of these cases turn out to be of parasitic origin. Hookworm is one of the more common parasites and is effectively treated with four tetrachloroethylene capsules in one dose, after treatment with 35-40 ml. of piperazine citrate daily for two days. Ascariasis is also quite common and responds well to 35-40 ml. of piperazine citrate daily for two days. (See Comment 4.) Strongyloidiasis is seen occasionally and is responsive to treatment with one Delvex tablet three times a day for 21 days. Delvex is often difficult to obtain in Vietnam. (See Comment 5.) We have also seen a number of cases of symptomatic balantidiasis which responded to tetracycline 500 mg. four times a day for 10 days. Amebic dysentery is seen occasionally and is responsive to one Diodoquin tablet three times a day for 21 days, and 500 mg. of tetracycline four times a day. (See Comment 6.) A few cases of bacillary dysentery (shigellosis) have been diagnosed by cultures sent to 85th Evacuation Hospital and were treated effectively with tetracycline 500 mg. four times a day for 10 days. Other suspected cases of bacillary dysentery with fever, elevated white blood cell count and pus and/or blood in the stools were also treated successfully with tetracycline. We have also seen several cases of trichostrongylus orientalis and have treated it with 35 ml. of piperazine citrate daily for 2 days with some success.

Bites are also seen quite frequently. Scorpion bites are common and not serious. Centipede bites are seen less commonly and are also not serious. We have usually treated scorpion and centipede bites with Benadryl 50 mg. four times a day for one or two days. (See Comment 7.) Snake bites are very uncommon but do occur on occasion. There are a number of pit vipers which inhabit this part of the world. The bites of these snakes are treated with crotalidae antivenom and ice packs to the affected extremity. (See "Snakebite in Vietnam," this issue)

When treating Vietnamese civilians several unusual maladies are seen. Many of these people, as would be expected, have malaria. There

is also a high incidence of tuberculosis. Occasionally plague epidemics are seen, and in such a case it is important to begin an immunization program as well as treating active cases with streptomycin and a broad spectrum antibiotic. Leprosy is also seen occasionally. Most of the native population in this country have had no immunizations of any type, and consequently it is not too unusual to see a case of tetanus. We have seen two cases of advanced tetanus in our medical company in a 3 month period. The Vietnamese people are also infected by many parasites. Hookworm is quite common, and it is not uncommon to see children with Hookworm infections with hemoglobins of less than 2 gms. Treatment of the Hookworm along with iron therapy produces a dramatic change in these children.

COMMENTS BY THE MEDICAL CONSULTANT

1. The severity of Tropical immersion foot is directly related to the number of hours and days that a person is continuously in a wet environment where he cannot dry and rest his feet, or change into dry socks and boots. A heavily cornified foot appears more susceptible to this injury which then may appear earlier. After 24-48 hours in such environment, the usual complaint is tenderness in the pressure point areas of the foot. The soles appear swollen and pale, and exaggeration of the natural creases is noted. At this point, removal from the wet environment for 12-24 hours with light duty and keeping the feet dry, with periodic elevation and rest of the feet, is all that is necessary.

With more prolonged wet exposure, the syndrome progresses with more tenderness and burning pains in the feet to the point where walking may become unbearable and the trooper becomes a true casualty needing medical evacuation. The foot becomes more swollen and general erythema develops. The foot now is more liable to abrasions, ulcerations, fissuring about toes, and to infection. This trooper must be kept off his feet with the feet elevated. Careful cleansing of the feet with soap and water may be all that is necessary, but fungicidal and antibiotic topical agents or systemic antibiotics may be necessary if secondary infections are present. It is most important to be conservative and not overtreat topically as the skin will not stand much further insult from injudiciously applied strong ointments or antiseptic solutions. Generally, in 4-7 days most cases recover without residual and can be returned to duty.

Prevention is the important aspect of tropical immersion foot and it is the Battalion Surgeon's responsibility to advise the Commander about such prevention and to recognize when the problem is beginning to occur. A unit may quickly become nonfunctional from this condition if appropriate and timely (& tactically feasible) command action is not taken.

2. Many of the chronic or stubborn tinea infections clear with the use of Tinactin. This should be reserved for such problems however. It has no action on monilial infections.

3. To the best of my knowledge, cutaneous leishmaniasis has not been proven in our troops.

4. Ascariasis responds well to piperazine citrate in a single dose or over several days. A second good and safe treatment is Hexylresorcinol Crystoids, 1.0 gm total for an adult. Mixed infections including roundworms should be treated first for roundworms.

Hookworm treatments include Tetrachloroethylene 3 or 4 cc for an adult, and Hexylresorcinol as above. Repeat courses of treatment may be necessary.

5. Strongyloidiasis is best treated with Delvex (dithiazanine iodide) with dosage of 200 mg tid for 10-21 days, depending on intensity of infection, symptoms, etc. One is reminded that Delvex is not an innocuous drug and has been associated with sudden death and drug idiosyncrasies.

6. Amebiasis should be treated according to severity and toxicity. The asymptomatic carrier of *G. histolytria* cysts or the case with only mild diarrhea can be successfully treated with Diodoquin and Tetracycline. Those more symptomatic diarrheas or dysenteries with trophozoites readily seen in stools, and with diseased rectum and colon on proctoscopy and physical exam, should be treated with the three drug regimen of Diodoquin, Tetracycline, and Chloroquine. All amebic dysenteries who have high fever, bloody and frequent stools, and who are obviously toxic should be treated in addition with Emetine. All complicated amebiases and extracolonic amebiases should receive the four drug treatment. Anything more than the mild diarrhea of amebiasis should be treated at least initially in a hospital situation.

7. Mosquito bed and head nets are useful in preventing bites from other things besides mosquitoes!

THE MSC AND THE BATTALION AID STATION IN RVN

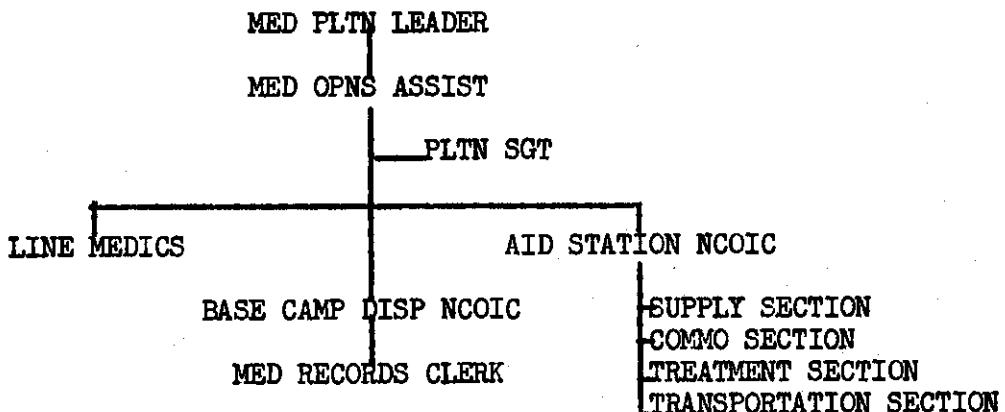
1LT S.D. Draper, Jr., MSC*

The employment of the battalion aid station in the Republic of Vietnam is nearly as varied as the number of combat maneuver battalions. Some consider it a valuable treatment station. Others find it of little import in this highly fluid war. The aid station may be found with a mobile battalion CP, a stationary forward CP, at battalion or brigade trains, or non-existent. The traditional concept of the aid station as the initial reception, triage, and emergency resuscitative treatment center in the evacuation chain has certainly been altered. It is the exception when wounded personnel are received there.

*LT Draper was recently assigned to the Office of the Surgeon, HQ, US Army Vietnam, after six months as the Medical Operations Assistant, 2nd Bn, 12th Cav, 1st Cavalry Division. He serves as Administrative Officer and Aide to the Surgeon.

The MSC Officer organic to the infantry medical platoon has varied responsibilities. Among these are medical and platoon administration, medical supply, training of aidmen, medical evacuation, and often, emergency and routine medical treatment. The first two of my six months with a battalion were spent with no surgeon assigned.

Most medical platoons in Vietnam are responsible for medical support both at a base camp and on field operations, usually concurrently. The TOE breakdown of the platoon into headquarters, treatment, and evacuation sections proves inadequate. MSCs find that one of their initial tasks is to adopt a workable platoon organization that covers both base camp and field operation including treatment, supply, communications, and transportation. Few medical platoons follow the TOE in number of personnel assigned or grades authorized. Below is a suggested platoon organization which has proven highly applicable to the situation in RVN.



Energetic medical personnel in RVN have scrounged together permanent wooden dispensaries to house base camp activity. Some of these rival their stateside counterparts. While the aid station is on field operations an NCO and clerk continue medical reporting, administration, sanitation, and routine care of base camp personnel. The remainder of the platoon is forward. We attached seventeen medics to the line with the remainder of the platoon forming the aid station group. Usually one aidman supported a platoon, four per rifle company, three per weapons company, two with the forward battalion CP. In each case, one of them was designated as senior medic.

After much trial and error, we found that operation of the aid station at the battalion trains was best for our particular situation. The 1st Cav supplies its forward companies by helicopter from the brigade-battalion trains. Transportation to the companies for the surgeon and aidmen's resupply was readily available. Routine medical situations which necessitated evacuation from the field were triaged at the aid station as the troops departed the returning supply ships. We found that we could treat most of the routine cases and return them to their companies the same day. More serious medical conditions and wounded were med-evac'd

from the forward company directly to the supporting medical company. The surgeon was near enough to the clearing station to help out in mass casualty situations and give our wounded personal attention.

We felt we could provide the greatest care to the greatest number working out of the trains. Deployment with the battalion CP was not nearly as satisfactory. Using this method, the forward companies were neglected. The increased number of troops going directly to clearing thus by-passing the aid station, caused too many needless administrative losses. Malaria control, field sanitation, and other preventive medicine responsibilities were also best handled from the battalion trains.

The commo section operated a PRC-25 radio with AT-292 antenna on the battalion log frequency. Re-supply requests from the companies were submitted nightly by the senior aidmen. We used an item-number code which greatly speeded transmission. All med-evac requests were made to the aid station on the log frequency. The surgeon or MSC monitored these calls, often finding that supply ships could be used instead of med-evac for FUGOs and other minor medical problems. If we felt a med-evac was needed, we then switched to their frequency, called a ship, and monitored the pick-up. A set format was used for all air-evac requests. This included priority, location, diagnosis, number of patients, whether they were ambulatory or litter, and the enemy situation. As a result, needless med-evac requests were eliminated. The supporting helicopter ambulance platoon much preferred our procedure rather than random calls by non-medical personnel.

The supply section de-coded the nightly requests, prepared the shipment, and placed it on the morning supply ships. They maintained an adequate aid station supply by drawing from the clearing station.

The transportation section, proud owners of a $\frac{1}{4}$ ton "mule" in our case, provided necessary transportation for medical supplies, patients referred to clearing, aid station equipment, etc.

The treatment section maintained constant coverage of the aid station. All patients were recorded in the aid station log with unit, diagnosis, treatment, and disposition noted. The log provided a ready reference for morning report entries, medical data, and problem areas. It was of great benefit to the S-1 in his responsibility of locating all battalion personnel.

There are rare occasions when wounded cannot be evacuated prior to nightfall. This necessitates overnight sustaining care by their aidmen. For this situation, we had emergency kits prepared for parenteral therapy, initial antibiotic treatment, splinting, and re-dressing with 4 x 8s and elastic bandages (a fine pressure dressing). These could be heli-lifted in with the surgeon or MSC to support the aidmen.

A major responsibility of the surgeon and MSC which is sometimes neglected is the continuing training and re-training of the aidmen. We

reviewed all phases of their basic course stressing the five areas of emergency resuscitative care: maintenance of an airway, control of shock, control of hemorrhage, splinting and dressing, and preparation for evacuation. All aidmen carried Dextran and knew how and when to use it. They were not allowed anti-biotics without the surgeon's approval. Foot care, prevention of heat injury, and malaria control needed constant stressing, as did the importance of the early determination of FUs, enabling the use of supply ships rather than med-evacs for their evacuation.

The MSC with the battalion aid station can make of his position what he wants. He can be a valuable asset to his surgeon, his platoon, and his battalion. On the other hand, he can decide there is nothing to do and do it. The year is what he makes of it. It can be professionally and personally rewarding, invaluable in his personal development, and an unequaled experience as a member of the Army Medical Service Team.

UTILIZATION OF THE INFANTRY BATTALION MEDICAL PLATOON IN RVN

Captain Michael J. Merchant, MC*

The organization of the Infantry Battalion Medical Platoon is set forth in MTOE 7-16E, February 1966, as follows:

Platoon Leader	CPT, MC	3100	(1)
Medical Operations Assistant	LT, MSC	3506	(1)
Platoon Sergeant	SFC, E7	91B40	(1)

Aid Station Section

Medical Assistant	Sp6, E6	91C20	(1)
Medical Assistant	Sp5, E5	91C20	(1)
Sr. Medical Aidman	Sgt, E5	91B30	(2)
Medical Aidmen	Sp4, E4	91B20	(2)
Company Aidman	Sp5, E5	91B30	(12)

Evacuation Section

Section Sergeant	Sgt, E5	91B40	(1)
Ambulance Driver	Sp4, E4	91B20	(6)
Medical Aidman	Sp4, E4	91B20	(6)

The above organization is designed for conventional operations with overland evacuation of patients. The section is authorized six (6) M718 front line ambulances. The possibility of overland evacuation is virtually non-existent. The use of helicopters for medical evacuation has eliminated the need for the evacuation section.

* Captain Merchant is Bn Surgeon of 3rd Bn, 8th Inf, with the 1st Bde, 4th Inf Div, APO 96265

Major units establish relatively permanent base camps from which operations begin. Battalions operate independently of one another, each battalion having an area of operations approximately 100,000 meters square. A forward tactical CP is generally set up near the center of the AO with the line companies operating in sectors up to 6,000 meters from the CP. The headquarters company mortar and reconnaissance platoons operate much the same as infantry platoons, participating on daily patrols near the CP location.

A forward trains area is set up as close as possible to the AO. The companies are resupplied from this area by helicopters. This necessitates carrying supplies to the forward trains area by daily convoy.

In order to provide adequate medical coverage for the above outlined concept of operations we have organized as follows:

a. An aid station is set up in the base camp to run routine sick call for the base camp support personnel.

b. A medical aidman (91B20) is assigned to the supply and transport platoon. This individual remains with the platoon and rides with the daily convoys to the forward trains area.

c. Six medics are assigned to the Headquarters Company. A senior medical aidman (91B30), and a medical aidman (91B20) are attached to the Headquarters Section. Two (2) medical aidman (91B20) are assigned to the Reconnaissance and mortar platoons respectively.

d. One (1) senior medical aidman (91B30) and one (1) medical aidman (91B20) remain in the forward trains area.

e. We have given each of the line companies an additional medical aidman (91B30). This individual is attached to the headquarters section and acts as a "chief medic". The platoon aidman is generally the individual who determines what priority dustoff requests are given. This as well as RT procedures should be taught during AIT.

f. The utilization of the Battalion Surgeon depends largely on the desires of the Battalion Commander. Individuals returning from the line companies for routine sick call which are beyond the capabilities of the company aidmen, but not requiring dustoff, return to the trains area by the supply helicopters. It is often advantageous to have the Battalion Surgeon at this point to determine those individuals who can be returned immediately and those who merely need a few days treatment in the base camp. It is equally advantageous to have the Battalion Surgeon remain in the base camp to supervise the daily sick call and thereby keep the number of troops in base camp for medical reasons to a minimum. This also minimizes the turn around time for these individuals.

In the eventuality of a large scale confrontation where a relatively small battalion perimeter or front exists, it is planned to set up an aid station to act as a central collecting and triage point.

This outline is based only on the experience of this Battalion. It is believed however that the above outlined organization is generally applicable but the organization must remain flexible to meet the changing situations.

DENTAL SUPPORT FOR REVOLUTIONARY DEVELOPMENT OPERATIONS
(LAM SON II)

LTC Raymond Morrow, DC*

The 257 Medical Detachment (KJ) has responded to a requirement for providing a dental capability and is now participating in what are generally combined Brigade task force operations conducted by the 1st Infantry Division. The requirement was generated by the fact that the division has only four dentists organic to its T.O.E. These are assigned to the brigade sites, some of which are accessible only by air. The 257th, with ten dental officers, react on as little as 12 hours notice to the 1st Infantry Division's requirements for two to four dental officers.

The combined Brigade task force is composed of U.S. Infantry Battalions, Vietnamese Popular Forces, Regional Forces and ARVN Battalions. In addition to these main elements Vietnamese National Police, Revolutionary Development Cadre, and Chieu Hoi returnees are also included. The U.S. Support units in the force include Medical, Dental and MI capabilities.

The objectives of these operations include apprehension of deserters, draft dodgers, VC and intelligence information. The operations also seek to break up the VC infra structure and return government control to the general population. The military and psychological warfare aspects of the operation are both coordinated and controlled at brigade level by a combined staff.

The operations are divided into three phases; seal, search, and Hamlet Festival. During the seal phase, troops are moved into position to completely surround the objective area thereby prohibiting the entry of, or exit of the general population. Following the completion of seal phase, the search and Hamlet Festival elements enter the area. Psychological warfare teams using helicopters and loud speaking devices direct all males between the ages of

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15 and 45 to report to a central collection point from which they are transported to the district or province headquarters for identification purposes. These checks disclose draft dodgers and deserters who are often sympathetic to the VC as well as VC suspects themselves. The women, children, and older men are directed to the Hamlet Festival area where they remain until the completion of the search operation.

The search phase of the operation is conducted by ARVN troops with, at times, the use of trained dogs. These searches have turned up tunnels, weapons, food supplies, as well as VC in hiding.

The Hamlet Festival area contains the Medical, Dental, and MI interrogation tents; a band and stage entertainment with a food service area; and a tent showing psychological warfare movies. All persons entering the interrogation tent are given five pounds of rice recovered from the VC. The bag containing this rice states in effect that the VC stole this rice from you, and now your government has recaptured it and is returning it to you. Monetary rewards are given for information concerning VC and hidden weapons. The Medical and Dental areas make treatment available of a MEDCAP nature for these civilians as well as treating military, civilian, and VC casualties as they occur. The dental aspect of the Hamlet Festival is complicated by the fact that many of the rural people have never known extraction of teeth with an anesthetic. With the first patient profound anesthesia must be obtained. Then employing the art of a side show shill the patient must be led to state several times for the gathered audience "Khong Dau," or no pain. Although these thespian maneuvers might be considered unethical advertising elsewhere it is an instant practice builder in rural Vietnam. Trial and error also indicated that placing the dental chairs in full view of the population waiting at the reception desk where they could see the performance and realize that the service was available rather than hidden at the rear of the medical tent made for a more successful dental operation.

The climax of the operation is a speech by the province chief to the population encouraging their support to the government while at the same time the apprehended VC, draft dodgers, and deserters are displayed on the stage.

In one operation an entire terrorist squad of six men who were living in the village were captured in a tunnel. After another operation the assistant village chief became a Chieu Hoi returnee who then made a psychological warfare tape which convinced 7 of a VC squad of 12 in the area to become Chieu Hois.

The long term mission of the Vietnamese civic action personnel involved in these operations is to exert the influence of the government of Viet Nam in VC controlled areas and return the population to government control. To this end the Medical Detachment (KJ Team) is involved in operations designed to accomplish stated objectives of the United States Forces in Viet Nam, namely the return of the government to the people.

PROBLEMS OF DENTAL SUPPORT IN COMBAT ZONES

LTC Tod W. O'Connor, DC*

Congress established the ratio of dental officers to US Army personnel as 1 per 500. The usual working ratio for CONUS is about 1 per 750, and this is due to the number of personnel who are training in hospitals, administration and such duties.

In Viet Nam the recommended ratio of dental officers to troops is 1 per 1450. If one subtracts the dentists in the hospital (their mission is to support the hospital) and the administrative dentists (only 3), one has a ratio of 1 dentist to 1600-1700 troops. The ratio is flexible, so small isolated troop areas will have dental support even though they have only 800 to 900 troops, though this means another dentist must support more than the normal number of troops.

Experience now indicates that the present ratio in Vietnam is too low. To arrive at a more favorable ratio, the Dental Surgeon is now recommending that the hospital and administrative dentists be discounted in determining the ratio of the dentist per 1450-1500 troops. This ratio would be used strictly for area dental support.

A problem that perplexes dental officers is the level of priority that routine dental treatment carries in Viet Nam.

In CONUS dental care has a high priority. A patient can use his dental appointment slip to be excused from a work detail. In Viet Nam routine dentistry has second priority to the mission of the units being supported. The patient in RVN can not hold up his appointment slip and say "Sorry I can't go out on patrol today, I have a dental appointment." The enormity of mission in Viet Nam is so great and the task so difficult that units can not afford even a small loss of man-hours. We must never forget that the mission of the unit, whether it be Quartermaster, Finance or Infantry, has priority over routine dental treatment.

The high patient-dentist ratio along with the heavy demands upon combat and combat support troops has influenced the mission of the Dental Corps in Viet Nam. Our overall mission of preventing dental disease, training and educating patients, and conserving the fighting strength remains the same. For the most part dental disease is a slow, chronic disease, that takes years to develop, and the patient will normally only be in Viet Nam for one year.

The healing arts emphasize devoting full attention to "the patient," and the concept of complete treatment. In RVN there are 1600 patients per dentist, so full attention to a few patients, performing elective dental treatment, may result in neglect of many. The old axiom "the greater good for the greatest number" must be applied.

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Every effort must be made to bring patients up to a class II level, and with time permitting (for both the patient and dentist) up to Class I. Lengthy elective dental treatment must be resorted to only when the demands upon the dental officer and the patient are at a minimum.

It would be unwise to try and obtain a more favorable dentist - patient ratio than we are now recommending, because the troops just don't have the time for routine care. Our clinics are constantly facing the problem of insufficient patients or too many, depending on whether the troops are in the field or back in camp. One out of five appointments are failed or broken. Some clinicians fail to grasp the difficulty the patient experiences in trying to keep his appointment and still fulfill his mission. Some clinics are booked two or three weeks ahead, which is excessive for Viet Nam. Patients need treatment at their or their unit's convenience, not at the convenience of the dentist. Quality professional care is a must, but a few idealized concepts of stateside care must yield to the necessities and realities of war.

An unexpected benefit of dental treatment is increased morale. Many troops are pleased to find that dental care is available in the field. A temporary partial replacing one or two missing anterior teeth is a big boost for the individual. One of the most appreciated services is the oral hygiene instructions, prophylaxis and stannous fluoride treatment. These two simple treatments have done much to increase morale and raise the prestige of the Dental Corps.



PSYCHIATRIC DISORDERS AMONG SUPPORT PERSONNEL

Captain William F. Kenny, MC*

Description of an Urban Psychiatric Service in Vietnam.

The psychiatric service of the 17th Field Hospital is rather unique among the facilities in Vietnam. The hospital itself is situated in the heart of Saigon and supports some 20,000 servicemen as well as all American civilians and foreign nationals working for the U.S. Government. Our in-patient load runs about 20 patients per month averaging three to four days in hospital. This is primarily a transient measure to meet an acute situation. If a patient is seriously ill and psychotic, he is transferred to the 93rd Evac Hospital. The out-patients on the other hand average 110-120 per month. These statistics are composed of roughly 40% evaluation and 60% treatment cases. There are very few psychotics seen on an out-patient basis, the majority being neurotic and personality disorders.

In the Out-patient Department we see almost no cases directly attributed to the strain of combat. By far the precipitating factors are separation from family, marital discord and frustration at work. The presenting symptoms of a mixed anxiety depressive state and those associated with increasing alcoholic intake are particularly common. Another feature of our population is the tendency to respond to stress by misbehaving and incurring some kind of judicial punishment. One gains the impression that these people as a whole are singularly vulnerable to loss of external support and through their symptoms attempting to regain that support. As a group they lack strong family ties and are limited in their ability to form solid close relationships. There is usually a history of poor impulse control, lack of judgement and the inclination to rely on others for initiative. On the other hand there is little in the past history indicative of overt psychiatric illness. As an aid to further understanding of the stresses initiating referral, I shall describe some of the more common syndromes seen in the course of the year.

1. Symptoms of Anxiety and Depression.

Many experience initial anxiety with restless sleep and a slight loss of appetite during the first two to three months of their tour. These symptoms are fairly well tolerated and are rarely a cause for psychiatric referral. It is only when this reaction is denied and the conflict somatized that the patient comes to our clinic. Gastrointestinal problems, pain in any area of the body and frequently skin disorders often mask such emotional tension. For the most part these individuals are passive aggressive with little awareness of their own feeling states. Therapy with a mild

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tranquilizer and two to three consultations is usually sufficient to carry them through this period. A more difficult problem is the individual who is experiencing discomfort at being separated from his wife and family. Sometimes this may even be an older person who has managed to have his family with him on prior assignments. Here the symptomatology is quite vague and what comes across is the patient's incessant plea that he cannot stand being away from home. There is a great deal of verbalization of depressed feelings, even crying spells with frequent reiteration of the patient's fears that his marriage is in trouble. Very often too, his wife is a somewhat hysterical type who through her letters indicates that he must find a way to get home. Prior to the referral threats of suicide, AWOL and emotional outbursts have agitated people in the patient's environment to the extent that they too begin to think of ways to get him home. Here the psychiatrist must indicate that what is needed is firmness rather than psychotherapy. Such patients are not ill and once they realize that their immature demands will not be granted, usually make a good adjustment.

2. Alcoholics and Emotionally Unstable Personalities.

This group begins to experience intolerable tension after a few months of initial adjustment. The loss of what little support they had at home appears too much for them. Particularly stressful is the routine of day to day life in Vietnam. The emotionally unstable start to complain of boredom, harassment from superiors or experience bouts of affective discharge. It is not an infrequent occurrence in our emergency room for a man to be brought in acutely agitated under the influence of alcohol. Upon waking the next morning there is a period of amnesia for the events that have occurred although the feeling state of being agitated is remembered. There is a serious AWOL threat at this time. In the alcoholic there is a strong feeling of resentment of the government for taking him from a relatively secure environment. He almost expects to be compensated for this "sacrifice" and when he finds himself in a job where some initiative is required he is in trouble. Both of these types of individuals require support and the problem is two-fold: 1) Assuaging the anger of the people in his present environment, 2) helping the man find more a structured assignment. Here ventilation of angry hostile feelings helps quite a bit.

3. Chronic Anxiety States.

Individuals with chronic nervous tension and neurotic anxiety may present at any time during their tour. What seems to happen is that the added stress of adjusting to a new environment makes them vulnerable to the slightest indication that things are not going well. Periodic encouragement and frequent consultations during crises are the rule. Here again physical symptoms may absorb much of the neurotic conflict. Fatigue, tension headaches, insomnia may at first appear to be the initial symptoms of a depression until the marked anxiety becomes manifest. Conversion reactions are rare but the utilization of physical complaints for secondary gain is often employed.

4. Psychopathic Personalities.

The severe personality disorders as represented by sexual deviates, drug addicts and aggressive personalities are usually referred at a point when they simply want to get out and go home. Unable to completely verbalize their feelings they either allow themselves to be caught or in some way cause enough trouble so as to initiate discharge procedures. Of special interest to me were four men indicted for murder while in Vietnam. In each case the men were impulsive, given brooding and mildly depressed. The actual killings resulted when the individual could find no outlet for his primitive dependent longings and became enraged. Contrary to the more usual circumstance the victims were not well known or close to the murderer but merely in some way symbolized the frustrating environment.

Perhaps even more significant than the different syndromes is the underlying separation anxiety. During the course of the year I have been impressed with the extent of the dependency needs common to this varied group and the anxiety engendered when such needs are not met. As frustration continues angry feelings arise which cannot be verbalized. The defense mechanisms employed seem primitive: regression to a pleading, dependent state; turning of the feeling against the self inducing an anxious depressed patient; isolation and repression of all affect with resultant boredom; projection of hostile feelings with complaints of harrassment; acting out in a petulant aggressive manner; somatization wherein the patient substitutes one dependent relationship for another. These are attempts to recreate what is felt as lost. With little ability to internalize their previous love objects, support that is not immediately present is not perceived at all.

As a result, there ensues a frantic search for new supporting figures. Very often this is the man's CO or his physician. In these cases, the CO or physician must be helped in dealing with the anxiety such dependency stimulates while the patient has to be taught to verbalize and then tolerate his disappointment and anger.

5. Marriage as a Solution.

Impressed by the extent of the problems engendered by frustrated dependency needs we undertook a study of GIs marrying Vietnamese women. Along with Captain Albert Kastl, Psychologist at the 93rd Evac Hospital we interviewed at random 64 servicemen who were about to marry in Vietnam. In addition, we gave 15 of the subjects an MMPI and selected TAT cards to interpret. An attempt was made to match this group with a control sample of 64 single GIs who were ambulatory non-combat soldiers. In spite of our attempts to match the two groups the marriage subjects formed a distinctly older age range with 75% having over four years service. The soldiers who were marrying gave a history of less sexual activity, a higher percentage growing up in broken homes and 16 out of the 64 having been married once before. Among the control group only three individuals had been divorced and the opinion of these soldiers

about American women was much more positive. The general impression gained from this study was that the soldier marrying a Vietnamese girl is somewhat passive and feels threatened by women. This was confirmed by their fantasies of American girls as being dominating, castrating figures. One very significant statistic was the marked paternal death rate among the marriage group lending further support to the thesis that these men lack strong male models to imitate and grew up in a dependent ambivalent relationship with their mothers. The proposed marriage then appeared to be another attempt to solve deep rooted conflicts over dependency needs and in almost all cases was seen as a magical solution for these problems.

No attempt was made to counsel these individuals but the results of the study do offer certain guidelines. On the one hand because of the rather fixed emotional needs of such an individual no amount of direct attempts to discourage him will succeed. However careful eliciting of his ambivalent feelings about women in general and especially his tendency to expect almost no frustration can lead to a more objective discussion of the soldiers resentment of the American woman. There is in this group a marked tendency to deal with their own angry feelings by projecting them onto women whom they then see as threatening and castrating. As this defense mechanism becomes exposed the individual is faced with the roots of his own hostility and while this may not change his mind it will at least enable him to see his fiancee in a more mature light.

Summary.

The large majority of referrals to our Out-patient Clinic stem from difficulties centering around unmet dependency needs. The immaturity of these men is quite obvious and more often than not it is the people in their immediate environment who feel pressured into making the referral. A fairly large percentage of this group can be managed in a supportive manner.

Often with the shift towards seeking nurturance from the psychiatrist, the patient makes less demands on the rest of the environment. Some, especially the young adolescents, mature rapidly when presented with a firm but empathetic figure with whom they can identify. It is probably the ability to identify with someone in the new environment, be it psychiatrist or CO, or buddy that is responsible for the stabilization of the underlying separation anxiety. Among the more chronic dependent personalities some attempt can be made to neutralize their immature demands. In those instances where marriage is utilized as a magical solution the individual can be helped to a more objective attitude.

In conclusion, it is felt that management of these varied dependency states includes emphasis on verbalization of ambivalent feelings, setting up firm controls, and offering the therapist as an identification figure. With such an approach a large percentage can be maintained in their roles in the community.

PSYCHIATRIC TREATMENT IN THE COMBAT SITUATION

LTC Arnold W. Johnson, Jr., MC*

Army experience in Vietnam has shown a somewhat lower over-all psychiatric rate than reported from previous combat theatres. This lower rate is due to a number of different factors, but in terms of types of patients the obvious difference is the relatively low number of psychiatric casualties as a direct result of combat stress. A cross section of psychiatric patients seen in Vietnam would include patients having symptoms of psychosis, psychoneurosis, and character disorder in approximately the same proportions and rates as a similar body of troops in the ZI, but with a small increment of patients with more directly combat induced symptoms.

The rates of combat induced psychiatric disability depend upon many factors bearing upon the morale of the troops and the conditions of combat. Occasional instances in Vietnam where there have been groups of patients with such disability illustrate that these factors can shift rapidly. Individuals and groups in this category have been thus far handled skillfully and well. It is important, as the tempo of the war continues at a high level, that medical personnel at all echelons, and particularly at battalion and brigade level, continue to be alert to such conditions and aware of the methods of proper handling and treatment. To this end a review of the principles of psychiatric treatment in the combat situation is presented.

The basic ideas of modern combat psychiatry were first developed during World War I. From 1914 to 1916 the British went through a period of trial and error in handling their numerous psychiatric casualties. The concept of "shell shock" so common in that war was originally thought of as an actual organic effect of concussion. Large numbers of psychiatric patients were evacuated from combat in France to the hospitals in England, and there was much difficulty in their handling. Gradually it was realized, with regard to the cases of so-called shell shock, that persons with definite central nervous system injuries did not show these symptoms and that the symptoms were seen in some of those not exposed to concussion. It was found that the symptoms responded to early treatment close to the combat area, and in the latter part of World War I the British were returning 60 to 75% of their psychiatric casualties to duty with less than 7 days of treatment in the combat theater. By the time the United States entered the war our medical observer teams had appropriated this information. Psychiatrists were promptly placed in combat divisions and in field and evacuation hospitals in the area immediately behind the combat units. In addition, neuropsychiatric hospitals were set up in France. Thus the U.S. Forces in World War I benefited by the early exploratory work of the British in being able to implement promptly the basic ideas of (1) early treatment close to the front line, and (2) the avoidance of evacuation if possible.

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In the years between World War I and World War II there was a relatively complete turn-over of military medical personnel. Although the lessons learned in World War I were recorded in the medical annals of that war, they were essentially forgotten. The number of regular Army psychiatrists at the beginning of World War II was exceedingly small, and the psychiatrist had been deleted from the table of organization of the combat divisions. As a result, when the Army was expanded at the beginning of World War II to meet the emergency it was necessary to take in large numbers of civilian psychiatrists in order to screen inductees and to staff Army hospitals and clinics. Understandably, the experience of civilian psychiatrists in emphasizing the importance of the individual and his symptoms led to emphasis on the idea that in the induction centers, by taking detailed histories and observing personality characteristics, it would be possible to screen out those who would not be able to function in combat. Another false assumption that multiplied the difficulties was that people who had neurotic symptoms would be unable to do satisfactory combat. As a result when the United States troops first entered combat in North Africa in 1943, the large numbers of physical casualties were accompanied by large numbers of psychiatric casualties who were quickly evacuated to psychiatric facilities in rear areas. Here they were found to have symptoms that seemed irreversible at that level and which seemed to incapacitate them for further combat service. These psychiatric casualties were largely evacuated on to the United States with very few returned to duty. Large numbers of these psychiatric casualties were subsequently separated from service with a medical discharge and a diagnosis of psychoneurosis. Uncovering types of treatment which were developed in this early period were successful in alleviating some of the severe symptomatology observed in these patients, but this type of treatment also tended to convince the patients that they were unable to do further combat and tended to justify their condition as being due to long past events out of their control. The loss of personnel from the North African theater due to evacuation of psychiatric casualties was such that at one point in 1943 the War Department sent a message to the North African theater, stating in part that "thorough investigation of returned shipments of patients reveals that 50% of the men returned are better qualified men than those being inducted."

In 1943 two psychiatrists were assigned to a forward evacuation hospital in North Africa. They were able to restore 50% of their received psychiatric patients to combat duty with a four day period of rest, food and encouragement. In the Sicilian and Italian campaigns that followed, psychiatrists were assigned closer to the combat echelons, and in January 1944 psychiatrists were finally authorized and assigned to the combat divisions. In the months that followed it became increasingly clear that psychological breakdown in battle was not a simple function of mental stress vs. individual vulnerability but that it was a complex and initially reversible result of multiple environmental physical and psychic factors.

Psychological Factors: It was found that the primary factor in supporting an individual through combat is group identification. This refers to the

fact that, in battle, fear and loneliness tend to force individuals together in a mutual effort of protection and emotional support. Such a tendency for people to group together in times of stress and danger has been observed in all peoples throughout history. In combat it was observed that as time goes by the individuals in the group are more and more bound together in strong feelings of concern for the group and the other individual comrades to the extent that fear for self becomes disregarded and the group becomes more important than the self. This creates a compelling, internal motivation for remaining with or rejoining the combat group in order to help promote the welfare and safety of the group. A corollary of this feeling is that if the individual leaves the group he feels guilty at having deserted his buddies. The feeling of intimacy and concern that the individuals in the combat group feel for each other is reflected in the choice of the term "buddy" to designate other members of the group. In summary, it may be said that the most effective defense against fear and danger is to seek out other individuals and band together for mutual protection.

The unifying and integrating factor of group identification is modified by numerous other factors. Factors which promote the integrity of the group and the implementation of its mission are good leadership, good communication, previous battle training and battle experience, good supplies and weapons in sufficient quantity, physiologic well-being, relatively aggressive personality traits, a combat situation favoring group action rather than scattered action, and attitudes, expectations and behavioral demands of the individual's group and of the culture of the group pointing toward the group welfare and mission. Factors which tend to break down the integrity of the group, to subdue the importance of the group mission, and to elevate the importance of the individual's safety are such things as high intensity and long duration of combat, long periods of anxiety provoking suspense, forced inaction in situations of extreme danger, insufficient time for the individual replacement to integrate into the combat group, lack of cohesiveness or scattering of the group during the course of combat, poor leadership, poor communication, fatigue, hunger, dehydration, illness or injury, inadequacy of battle training or combat experience, vulnerable personality traits such as excessive passivity or seclusiveness, repeated catastrophic combat, circumstances of battle that might permit evasion or flight, and cultural or group acceptance of symptoms, helplessness or other types of ineffective behavior under combat circumstances.

Reaction Types: In combat many types of individual reaction that would be considered pathological under conditions of the home, the school or the job become relatively universal and normal. During World War II a number of surveys were made of the type of physical symptoms which were experienced by infantry soldiers in combat. It was reported that of infantry soldiers in combat for any length of time, approximately 50% would experience a pounding heart, 45% a sinking stomach, 20% general weakness, 25% nausea, 30% cold sweat, 20% vomiting, 25%

shakiness and tremulousness, 6% involuntary urination, 10% involuntary bowel movements, and 25% stiff muscles. In William Menninger's book Psychiatry in a Troubled World, this group of symptoms is referred to as a "normal battle syndrome." The point about these symptoms is that every infantry soldier any length of time in combat developed some or many of these symptoms but they did not ordinarily incapacitate him for the combat duty, and the duty was continued in spite of the symptoms. Such symptoms might then be considered a normal human response to great stress. To such physical symptoms might be added other normal results of autonomic upset and physical fatigue, in particular such psychic symptoms as excessive sensitivity and irritability.

A condition that might be called a "pre-combat syndrome" also assumes great significance. Battalion surgeons and other medical officers serving units going into combat routinely observe that on the eve of combat there is an inordinately large sick call. Such sick call is found to consist of large numbers of persons with minor diseases and injuries, including such things as headaches, toothaches, indigestion, worry over healed or nearly healed wounds, sometimes broken spectacles and broken dentures. It may be noted here that complaints are sometimes culturally determined, one good example being the universal complaint of flat feet in World War I, far out of proportion to the actual disability from the flattening of the arches of the feet experienced by the individuals who made the complaint. In any situation of military sick call it should be a matter of caution that no one set of symptoms should be allowed to become an "evacuation syndrome." The major lesson to be learned from the pre-combat syndrome of large sick call with small disability is that these individuals are not actually complaining of their physical illness or disability but rather are complaining of their anxiety and fear over the events to occur in the near future in combat. The understanding medical officer, will, of course, watch carefully for actual cases of inability of individual soldiers to do duty.

In discussing the pre-combat syndrome, it is perhaps appropriate to mention the self-inflicted wound. Self-inflicted wounds were not usually observed during actual combat but were observed in periods between combat and particularly in periods of tense expectancy of combat in which the outcome would be in considerable doubt. Psychologically speaking, this is exactly what would be expected since we would not expect that individuals would inflict wounds on themselves during the actual action of combat when tension was being released in that fashion, but rather that the self-inflicted wounds are incurred during periods when susceptible individuals have unbearable tensions mounting within themselves which they are unable to discharge in any other way.

In actual combat a number of degrees of psychiatric reactions to the combat are seen which may be arbitrarily classified as mild, moderate and severe. The mild cases may be described as those who verbalize their fears with considerable trembling and tears, those who appear

physically exhausted, those who complain of physical symptoms which do not seem appropriate but who do not show overt fear, and at times those who are shaken up by close blasts. These latter should be carefully distinguished from actual blast concussion in which epistaxis or injection of the tympanic membranes may be seen.

Moderate cases are those which are somewhat more severe and which may show gross tremors and gross emotional lability along with inability to properly tell the story of their difficulties. Included in this group are hysterical conversions such as paralysis of one or more limbs, deafness and blindness. Also may be noted severe physical complaints, such as nausea and diarrhea to the degree of actual temporary incapacity. Also included in this group is what has been called "the old sergeant syndrome." This typically is the case of a soldier, usually one who has carried some responsibility within his unit, who is no longer able, through fatigue and breakdown of his personal resources, to function efficiently within his group. His inability to function causes considerable guilt at leaving the group and abdicating his responsibility, and on appearance he is quite depressed and expresses considerable feeling of guilt.

The last category, the severe combat exhaustion types, include those who become excited and may act in a wild and panicky manner, those who become markedly apathetic and are very withdrawn, mute and unresponsive and may act in a very infantile fashion, even assuming a fetal position, and finally that group which may temporarily exhibit the secondary symptoms of some of the classical psychoses, such as delusions, hallucinations, excessive suspiciousness and feelings of persecution. In considering all of these different possible combinations of symptoms, it should be emphasized again that in combat no one set of symptoms should be allowed to become an evacuation syndrome and that each case, so far as possible, should be evaluated for return to duty at the closest possible level.

Principles of Treatment: The primary principles of management of combat psychiatric casualties may be listed as, (1) decentralization, (2) expectancy, (3) brief simple treatment, and (4) centralization of triage.

The first principle, called decentralization, simply refers to the necessity of implementing treatment as early and as far forward as possible. If prompt treatment can be given within the individual's combat unit or its immediate vicinity, this tends to catch the patient while the reaction is still in its initially reversible stage and while he is still in conflict between the interests of his group and his self-preservative interests. Appropriate handling at this level tends to preserve the group identification and submerge the self-preservative feeling which promotes the symptoms. The patient is quite suggestible at this level and tends to decide in favor of the group. Experience in Korea showed that the battalion surgeon at the battalion aid station level was able to apply this principle in a quite satisfactory fashion.

In Korea then, the division psychiatrist became to a large extent an advisor of the battalion surgeons and to a lesser extent an actual operator of his own psychiatric facility.

The second principle, expectancy, refers to the fact that treatment is best carried out in an atmosphere which expects the patient to return to duty. Not only the physician, but all of the treatment personnel should immediately take the attitude with the patient that he will return to duty. The patient is quite suggestible if he is treated early, and the desire to return to his group is thus reinforced. This approach tends to minimize the importance of the patient's symptoms in his own eyes. It may be noted that all patients will tend to respond with behavior and/or symptoms in accordance with their image of what is expected of them. Such an attitude of expectancy on the part of treatment personnel is further implemented by any necessary measures to avoid a hospital atmosphere in order to further minimize the idea of illness and the temptation of secondary gain which could reinforce the patient's symptoms. An attitude of expectancy on the part of the physician and the other treatment personnel can be adequately implemented only if these personnel are identified with the needs of the combat group as well as with the individual discomfort of the person who presents with symptoms. It may be pointed out that in a combat situation every soldier is needed immediately if he can function. Not only is he needed for the group function, but in the long run it is actually better for both the patient and the group that he return to duty. This is based on the sound assumption that the successful performance of duty is more therapeutic than escape from danger with its concomitant chronic guilt reaction and the necessity of maintaining symptoms indefinitely in order to assuage the guilt.

The third principle, that of brief simple treatment, is not only necessary in a combat situation where complicated or lengthy forms of treatment are not possible, but brief simple forms of treatment also help to avoid the suggestion of illness, emphasize the normality of the symptoms under the situation, and emphasize the expectancy of recovery within a short period. Measures that are effective under combat situations of this sort are (1) rest, (2) food, (3) drink, (4) mild sedation. In conjunction with these helps for the physiologic condition of the individual, verbal measures such as reassurance, opportunity for ventilation, persuasion and exhortation may be extremely helpful if time permits. It is pointed out here that the psychiatric break in the individual is the result of immediate circumstances and would not have occurred but for the immediate circumstances. The break is reversible early and what is needed are measures to suppress and repress the feelings and symptoms in order that the individual may regain his integrity of function and reverse his failure of adaptation. At this level and at this time attempts at uncovering and solution of lifelong problems on the assumption that they have helped to set up the patient for his failure are not only impossible but irrelevant.

The fourth principle, centralization of triage, refers to the fact that it has been found extremely advantageous to channel all those psychiatric casualties whom it is necessary to evacuate through facilities where a psychiatrist is available. At each level of evacuation the same type of therapeutic effort is made, so that these conditions may be corrected at the earliest possible time with the best expectation of success.

Results: In considering the results of such methods of management of psychiatric casualties, it may be noted that in World War II, near the end of the war, 60% of the psychiatric casualties were returned to duty within their own division and 90% were returned to duty somewhere in the combat theater. In Korea, in the year 1953, 88% of psychiatric casualties were returned to duty within their own division and 97% were returned to duty somewhere within the combat theater. Army statistics in Vietnam indicate that around 96% of persons seen by psychiatrists are retained in country, but this figure is not exactly comparable to the WW II and Korea statistics as it based on a somewhat lower over-all psychiatric rate. What is perhaps more significant is that the rate of evacuations out of country for psychiatric reasons has been only slightly greater than the army-wide rate for psychosis which has been relatively constant at 1-2 per thousand per year for many years. In addition, evacuations out of country for psychiatric reasons have recently comprised approximately 3% of evacuations for all causes, a ratio smaller than previously experienced.

There have been criticisms of such statistics saying that they are statistics only and that individuals treated by the described methods and returned to duty do not do good duty. It has been further said that sending such individuals back to duty will only fix their neuroses so that they can never be cured.

It may be initially pointed out in answering these criticisms that, even if they were true, the action was justified since in combat whether an individual is ill, injured or psychiatrically disabled, the criterion for return to duty is not comfort or complete absence of symptoms but rather ability to perform. It is not necessary, however, to depend entirely upon this answer. Rioch and Harris conducted in Korea an independent evaluation and found, on questioning the superiors of such returnees, that from 80 to 90% of them functioned satisfactorily for a considerable period and that only 1% of these individuals were eventually re-evacuated as psychiatric casualties. It is noted also that Rioch has stated that patients treated under these principles in World War II and in Korea do not seem to be turning up in VA Clinics with significant symptomatology related to their combat stress and treatment. Brill and Beebe did a study for the VA which was a follow-up on 1,000 World War II veterans with psychiatric breaks in the service and with variable types of treatment in the service. Five years after the war it was found that in those individuals who had been normal or somewhat neurotic prior to their service, regardless of the type of treatment, there was no significant change in their personality compared to what it had been prior to service. They found that the only group in which there was significant change was that composed of individuals

who could be characterized as personality disorders or acting out characters, and in these it was found that there was moderate increase in some neurotic symptoms or acting out behavior.

Studies of American veterans may be compared with Kalinowski's study of the experience in Germany in World War I and World War II. It was noted that after World War I German soldiers who had persistent neurotic symptoms were qualified for pensions, and over a period of years there were numerous persistent post-World War I combat neuroses. After World War II, however, no pensions were given for psychiatric disability, and by and large it has been found that there have been no persistent neuroses following World War II. Kalinowski notes that man is to an extraordinary extent capable of standing the utmost stress. His general conclusion was that persistent war neuroses are the result of symptoms being rewarded rather than actual residuals of combat stress.

REFERENCES

Brill, N.Q. and Beebee, G.W. (A follow-up study of war neuroses. Washington, Govt. Print. Off., 1956) xviii, 393 p. (V.A. Med. monog.)

Glass, A.J. Preventive psychiatry in the combat zone. U.S. Armed Forces M.J. 1953, 4: 683-692.

Glass, A.J. Principles of combat psychiatry. Mil. M. 1955, 117:27-33.

Glass, A.J. Psychotherapy in the combat zone. Am. J. Psychiat. 1954, 110: 725-731. Review of policy World War I - Korea.

Harris, F.G. and others. Experiences in the study of combat in the Korean theater. I. Report on psychiat. and psychol. data. 85 p. (Walter Reed Army Inst. of Res., Wash, D.C. Res. rept. WRAIR-43-55, Nov. 1955).

Harris, F.G., II. Comments on a concept of psychiatry for a combat zone. 34 p. (Walter Reed Army Institute of Research, Washington. Research rept. WRAIR-165-56, Oct. 1956).

Menninger, William, Psychiatry in a troubled world. The MacMillan Co, N.Y., 1948.

Peterson, D.B., and Chambers, R.E. : Restatement of combat psychiatry, Amer. J. of Psychiat, 109:249-254, 1952.

Rioch, D.M. Problems of preventive psychiatry in war. 17 p (Army Medical Service Graduate School, Washington. AMSGS-70-54, Oct. 1954).

War Department: The Medical Department of the US Army in the World War, Vol X, Neuropsychiatry. Wash. D.C.: US Govt. Printing Off. 1929.

NOISE AND CONSERVATION OF HEARING

Captain J. M. Hodges, MC*

It has been long recognized that continuing exposure to loud noises may result in permanent impairment of hearing which may affect combat efficiency, and which is a recognized physical disability in this country. That this is a disability which can, in many instances, be prevented, has likewise been established. Physicians should be familiar with the effects of noise on hearing and with the measures which prevent the loss of hearing and should initiate hearing conservation measures when indicated.

Noise may injure the hearing mechanism under certain conditions, and the hearing loss caused by noise may be temporary or permanent. The ears of some individuals are more easily injured by noise than the ears of others. In the beginning most of the impairment is above the pitch ranges important to the understanding of speech, and therefore early damage is not noticed by the individual. Continued exposure will cause progression of damage including involvement of the speech frequencies which if allowed to reach an advanced stage, will cause severe handicap. Deafness caused by noise can be prevented by reducing to a safe level the intensity of the sounds that actually reach the inner ear.

Wearing cotton in the ears or plugging the ears with finger tips does not sufficiently reduce the amount of noise reaching the inner ear. Several kinds of ear protectors are available which, when properly fitted and worn, reduce many injuriously loud noises to a level safe for the inner ear. The Army Medical Service procures and issues ear plugs which have been demonstrated by tests to be effective.

The institution of a hearing conservation program is indicated whenever persons have difficulty in communicating by speech while they are in the noise area, hear noises or ringing in their ears after working in the noise area for several hours or have temporary loss of hearing that muffles speech and certain other sounds after several hours of exposure to the noise.

An important source of hazardous noise are generators. These should be located as far as possible from the work area and sleeping quarters and should be sand bagged in order to effectively reduce noise transmission. Most of the hazardous noise environments are obvious and we must be aware of the potential danger.

The wearing of ear plugs is the single most important measure in a hearing conservation program. Well-designed and properly fitted ear plugs will provide attenuation of noise reaching the inner ear of from 15 db in the lower frequencies to 35 db in the higher frequencies. Routine use of ear protective devices is mandatory for all individuals regularly exposed to noise in excess of 85 db in the frequency range from 300 to 9600 cycles per second which would include the firing of all weapons and the noise from most generators. Little difficulty is experienced by persons

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with normal hearing in understanding speech when ear plugs are worn if the voice is raised slightly above the level of normal conversation. Actually it is easier for a person to hear and understand speech in a sufficiently noisy environment with ear protection than without. One must try it to believe it.

Properly fitted ear plugs will not cause damage to the normal ear canal if the plugs are kept reasonably clean. Plugs should be fitted individually for each ear under medical supervision. Occasionally the separate ear canals in the same individual will require plugs of a different size. A good seal between the ear plug and the ear canal is also very important so that no leak develops. Some initial discomfort may be noted with a good seal. If they loosen they must be reseated from time to time during the work day. Personnel must be impressed with the importance of ear protection because hearing damage becomes worse every day of exposure.

Listed below are the most commonly used sizes of ear plugs which are available through medical supply channels:

Plug, EAR, Noise Protection, 24s
FSN 6515 - 299 - 8290 Small
FSN 6515 - 299 - 8289 Medium
FSN 6515 - 299 - 8288 Large

If there is known exposure to loud noises one can expect the patient to complain of tinnitus and diminished hearing. This should alert the medical officer to the need of an audiogram to determine the level of hearing loss. Such persons should not be returned to duty without ear plugs.

Audiograms should be done at least two days after known exposure. If there is a traumatic perforation the patient should be evacuated for ENT Consultation and treatment.

If hearing loss is present as determined by audiometric examination the patient should be immediately relieved of all duties that may require further exposure to injurious noise levels and should return in seven days for re-evaluation, and again in 30 days if the deficit persists. At the end of 30 days he is permanently profiled against duty in the noise environment that produced the hearing deficit, or else is sent back to duty with ear plugs, depending on the results of the final testing.

If an individual is engaged in a fire fight and there is tinnitus and loss of hearing without a ruptured tympanic membrane, the best treatment that he can get is reassurance. Re-evaluate him in one week and at this time determine whether or not further evaluation is needed. The hearing should gradually improve but the tinnitus may linger on indefinitely.

Diagnosis of the month: Gynecomastia, R. Wrist.

PHOSPHORUS BURNS

LTC Alphonse C. Gomez, MC*

Casualties with phosphorus burns generated by combat activity and accidental injury constitute a significant percentage of the burns hospitalized each month in USARV Medical Installations.

In the course of the Surgical Consultant's monthly rounds the question of treatment to be employed in this type of burn has arisen fairly often, therefore it appears timely to restate previously outlined concepts on its management:

Locally, phosphorus produces second and third degree burns, whereas systemically, it is hepatotoxic, nephrotoxic and a hematopoietic suppressant. The fatal dose is approximately 50 mgm, with systemic absorption being directly proportional to the amount imbedded and the length of time it remains within the tissue. The most important therapeutic measure is the early removal of phosphorus particles from the skin and deeper tissue.

Aid station and clearing platoon personnel should limit their treatment to cleansing the involved areas and removing all visible particles without searching within the depths of wounds. Dressings soaked with saline or sodium percarbonate solution are applied and kept moist. Supportive treatment is initiated (hydration, analgesics, antibiotics, tetanus toxoid booster, etc.) and the patient evacuated promptly to the nearest hospital.

In the major treatment facility these injuries are treated in accordance with established principles of war surgery. Adequate debridement will excise much of the fragmented phosphorus; however, a diligent search within the depths of the wound is essential and this will require good anesthesia, surgical exposure, and sufficient assistants for a thorough procedure in a minimum of operating time. Application of a 5% copper sulfate solution to the contaminated area will produce an air proof coating over the phosphorus particles making their detection easier, reducing its smoldering action on adjacent tissue, and will diminish the rate of systemic absorption. After this solution is used, thorough irrigation with saline must follow to wash out the excess, since copper sulfate is equally noxious systemically.

Studies performed at Brooke Army Medical Center indicate that sodium percarbonate will also inactivate elemental phosphorus. After the wounds have been debrided and thoroughly irrigated with saline, sodium percarbonate may be instilled and the dressings moistened with the same solution. Sodium percarbonate can be prepared by warming hydrogen peroxide to 115 degrees F. and then adding sodium bicarbonate powder (approximately 75 gm to 100 cc of 3% H₂O₂). Warming

*Surgical Consultant, Office of the Surgeon, USARV.

is not essential but facilitates the reaction.

Since it is difficult to remove all phosphorus particles at the first surgical procedure, it is necessary to consider re-examination of the wounds within 24-48 hours, providing the condition of the patient permits.

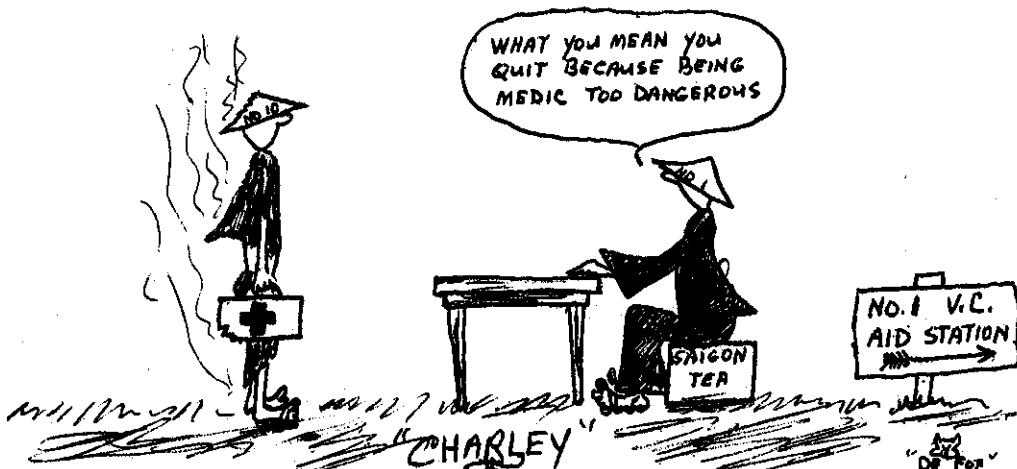
Complications which may follow within 24 to 72 hours due to the toxic action of phosphorus must be watched for and treated.

Hepatic insufficiency may become manifest by petechiae, echymoses, and submucosal hemorrhage due to hypoprothrombinemia; icterus may be in evidence.

Hematuria and albuminuria are signs of renal damage while a rapid drop in hematocrit is good index of marrow suppression.

Cardiovascular collapse may occur as the result of phosphorus toxicity upon the myocardium. Hypocalcemic tetany, Cheyne-Stokes respirations, convulsions, coma, and death may follow in a severe case of poisoning.

The systemic effects of phosphorus must be monitored and prompt therapeutic measures initiated. If available, serum bilirubin, alkaline phosphatase, S.G.O.T., and BUN should be obtained initially and as indicated thereafter on all patients. Urine output should be kept at a minimum of 100 cc per hour in these patients. Mannitol may be of value in maintaining an adequate output. Appropriate urinalyses should be done. Hematocrits should be obtained daily and blood given as indicated. In the presence of oliguria packed cells should be considered to avoid overloading the circulatory system. Hypertonic glucose may be required for hypoglycemia secondary to liver damage, and Synkavite or another vitamin K analogue may be used to correct severe hypoprothrombinemia. Calcium chloride or gluconate may be needed for hypocalcemic tetany. The most effective treatment of systemic phosphorus poisoning is still the prompt inactivation and removal of elemental phosphorus in the tissues.



CORPS EPIDEMIOLOGICAL REFERENCE OFFICE

Captain Walton M. Wheeler, III, MC*

In accord with recommendations of the Joint Preventive Medicine Subcommittee of the US Mission Council, MACV and USAID in September of 1966 issued a joint directive establishing one Corps Epidemiological Reference Office (CERO) in each corps/region of the Republic of Vietnam.

The purpose of the CERO is to monitor and coordinate civilian and military efforts directed toward the control of epidemic disease within RVN. Past experience has shown that frequently epidemics occur without the timely knowledge of responsible health authorities. Prompt exchange of information concerning epidemics between US military, RVN military, USAID, RVN civilian health authorities, and Free World forces and agencies permits appropriate investigation and the establishment of a control program within a reasonable time frame.

There are four CEROs, located in Da Nang, Nha Trang, Bien Hoa, and Can Tho. The office of record is the USAID Regional Health Office in each of these cities. The official US members comprise the following:

Regional USAID Health Representative - Chairman
MACV Corps Senior Medical Advisor
US Forces Preventive Medicine Representative

There are monthly meetings open to anyone interested in matters of public health. It is not unusual to have 25-30 physicians in attendance, thus providing a chance to meet at regular intervals with a great number of doctors from throughout the corps area.

CERO members inform one another about epidemic diseases occurring within the area of their responsibility. Close liaison with health authorities of GVN and Free World civilian and military organizations not represented by a CERO member is an absolute necessity. After monitoring preliminary information, reports are made to the appropriate higher headquarters by the most expeditious means.

The CERO is authorized to request assistance from military or civilian components at the Corps level, or from Saigon if necessary. The CERO is designed not to usurp the normal operating responsibilities of established preventive medicine activities, but rather to coordinate these activities and thereby enhance them.

As a result of the CERO meetings and the gathering of information about disease, valuable epidemiological information has been obtained. This data will be most useful in improving the epidemiological map of RVN.

*Captain Wheeler is Assistant Preventive Medicine Officer, Office of the Surgeon, MACV.

Plague has occupied the center stage for the CEROs at Da Nang and Nha Trang. In Da Nang the disease seems to smolder along in spite of extensive control efforts by military and civilian agencies.

In the IV Corps there was an outbreak of diphtheria in mid-February. There were about 15 cases, a few of which were confirmed bacteriologically, and 6-7 deaths. Close cooperation of ARVN, USAID, MILPHAP teams, the Ministry of Health, and the Korean preventive medicine team resulted in prompt control of the epidemic and administration of 26,000 doses of diphtheria/tetanus toxoid with follow-up doses planned in 4-6 weeks.

The CEROs, though still in their infancy, have already proved to be useful arms of the medical service in RVN. It is important that US medical officers be aware of the existence of the CERO, its scope, functions, and limitations.

For further information about the CEROs and their meetings the positions of representatives and their phone numbers are listed below:

I Corps:

USAID Chief Health Officer	Da Nang Motley-183/184
Commander, US Navy Preventive Medicine Unit	Da Nang, Flamingo 170
MACV Senior Medical Advisor	Da Nang 6368

II Corps:

USAID Chief Health Officer	Nha Trang 3376/Goldfinch 813
MACV Senior Medical Advisor	Pleiku 4104
Chief of Medicine, 8th Field Hospital	Nha Trang 3263

III Corps:

USAID Chief Health Officer	Bien Hoa 297/298
MACV Senior Medical Advisor	Bien Hoa L.D. 234/216
CO, 20th Preventive Medicine Unit	Bien Hoa Army 490

IV Corps:

USAID Chief Health Officer	Can Tho 151, ring 2
MACV Senior Medical Advisor	Can Tho 14/34
CO, 541 Medical Detachment	Can Tho 85

ACUTE CHLOROQUINE-PRIMAQUINE AND DAPSONE TOXICITY*

Personnel returning from Southeast Asia and Korea are routinely issued antimalarial tablets containing 300 mg. of chloroquine base and 45 mg. of primaquine base. These drugs are a potential source of accidental poisoning, and several such cases involving children have recently been reported. In addition, many individuals leaving Vietnam receive a thirty day supply of 25 mg. dapsone tablets, and the same possibility of poisoning exists for this drug. The following is published as a reminder of the potential danger of these drugs and to provide general information on the toxicity of these agents.

The toxic dose of chloroquine base for children is approximately 20 mg/kg and the lethal dose is approximately 100 mg/kg. Although the toxic and lethal doses are not known for adults, it is felt that children are more sensitive.

The exact mechanism of chloroquine toxicity is unknown, but because of its chemical similarity to quinine and quinidine, it is considered likely that the toxicity of these drugs is basically the same. The manifestations of acute chloroquine poisoning include myocardial depression, central nervous system stimulation with convulsions, and eventual paralysis of the vital brain centers.

The impressive feature is the rapid appearance and often fatal outcome of chloroquine toxicity, frequently occurring within two hours of ingestion. Because of the early and severe consequences of chloroquine toxicity, it is imperative that therapy be initiated rapidly. Since gastrointestinal absorption of chloroquine is rapid, vomiting should be induced as early as possible if the affected individual is conscious and danger of aspiration minimal. Gastric lavage should be performed as soon as possible in the comatose patient; prior intubation with a cuffed endotracheal tube is recommended to prevent aspiration. Equipment should be available for support of respiration. Convulsions, if they occur, will have to be controlled. Vasopressors, such as norepinephrine, are indicated for hypotension. The use of intravenous sodium bicarbonate, or molar sodium lactate, has been recommended because of its synergistic effect with sympathomimetic agents in treating hypotension and because of its beneficial effect in treating the cardiac manifestations of quinidine toxicity. Renal excretion of chloroquine is increased with acidification of the urine (A minor objection to the use of alkali, as mentioned above). Because of the slow elimination of chloroquine from the body, prolonged observation of the patient is indicated.

Primaquine reaches its maximum plasma concentration in about six hours and is rapidly metabolized. Methemoglobinemia is a manifestation of toxicity of quinoline compounds and can be treated with intravenous administration of aqueous methylene blue. In individuals with glucose-6-phosphate dehydrogenase deficiency, an acute hemolytic anemia may develop.

*The information in this article was taken from a recent DA message.

Dapsone may also produce methemoglobinemia. In addition, since sulfones act as electron donors, some increased erythrocyte hemolysis may occur in individuals with normal levels of glucose-6-phosphate dehydrogenase. Central nervous system stimulation has also been observed following acute intoxication with dapsone.

It is essential that individuals receiving chloroquine-primaquine or dapsone be adequately informed of the potential toxicity of these drugs, especially with regard to children. In addition, chloroquine-primaquine tablets should be dispensed in durable containers, plastic or glass if available, and labelled with the identifying name of the drug and the precautionary warning "Danger - may cause death in children."

Preventive Medicine Notes

Four newly-arrived sanitary engineer officers, on duty with the 20th Preventive Medicine Unit and its attached units, have greatly increased that unit's capability to provide preventive medicine services in environmental engineering. Unit and organization Surgeons who require such services should contact CO, 20th PMU (telephone Bien Hoa Army 490). Surgeons in base camps should be especially alert to the construction of new water supplies and are urged to promptly request surveys by a sanitary engineer of the 20th PMU.

On the third Sunday of each month at 1000, the Joint Subcommittee on Preventive Medicine meets in USAID #2 in Saigon. These meetings are attended by many of the individuals, both military and civilian, who are interested in public health matters in RVN. Organization Surgeons and Preventive Medicine Officers are invited to attend whenever their duties permit. Information on a specific month's meeting can be obtained by calling the USARV Preventive Medicine Officer at A693.

Policy Regarding Residency Training

Early release to accept residency training or fellowship positions leading to specialty board eligibility is not within the purview of Sections XX or XXIV, AR 135-173. Although at one time early releases of up to 90 days were authorized for this purpose, the world-wide commitments of the AMEDS made it necessary to discontinue this policy in 1961.

Officers should not seek residency positions with reporting dates prior to completion of their obligated tours. These positions are normally available after release from military service. If unable to secure a residency appointment upon expiration of term of service, and to insure employment until acceptance into a program, MC officers serving on initial tours may extend their period of active duty for any period of time as outlined in para 5b(3), AR 135-215.

To eliminate the administrative workload involved, applications for early release for this purpose will be returned by the intermediate commander without action and will not be forwarded to DA.

The following excerpts from a letter written to the Surgeon, USARV, by LTC Bedford Berrey, Chief, Medical Corps Branch, Office of The Surgeon General, are of administrative importance and interest to all Army Medical Corps Officers in Vietnam. LTC Berrey visited Vietnam from 23 November to 22 December 1966, and interviewed approximately 90% of the Army physicians in the command with regard to future assignments:

"This short communication is a result of my recent extensive tour of Vietnam. While it represents a follow-up to that visit, it is also a way to convey my sincere thanks to everyone who assisted me in the accomplishment of my mission.

"First, the individual preference statement (DA Form 483) will be used in combination with the interview notes at the time reassessments are made. If no interview was conducted, then a letter to my office can be used, if desired, to supplement the preference statement. I must emphasize here, however, that I will not be able to reply to these letters.

"Second, my staff and I normally begin planning assignments for returnees four or five months before the DROS date. Reassignment instructions are forwarded to The Adjutant General about 90 days before the DROS. The Adjutant General then transmits these instructions to Headquarters, USARV, and orders are actually written in country. If one doesn't have his orders about thirty days before the DROS date, a local inquiry might be in order. Writing to me personally at this time serves no worthwhile purpose, and could actually result in needless delays.

"Third, assignments in CONUS are considered on a geographic area basis rather than on a local installation basis. As a general rule, I advised reserve officers on two year active duty tours that assignments to General Hospitals (teaching institutions) are very limited in view of their short time remaining in service. Certain specialists might be so assigned depending on the specialty and our needs at the time of rotation. As with all assignments, requirements must govern every assignment. We do not make available lists of openings. To do so would create an unreal picture because of the rapidity with which changes take place. Therefore, for officers to write concerning openings that may exist delays my staff and we will not be able to respond to such queries.

"Fourth, as was frequently pointed out during interviews, the West Coast and Colorado were requested by almost 80% of all to whom I spoke. Requirements simply do not exist in these areas to accommodate everyone. Hence, in many instances we must use second, third or fourth preferences. At times assignments of necessity will be made outside the areas of stated preference. This is why I often asked an officer which he considered more important - the type of duty assignment or the geographical location. To date, we have given and will continue to give every possible consideration to medical officers returning from Vietnam.

"Fifth, officers interested in residency training are encouraged to contact me or Chief, Professional Education Branch directly if they are unable to obtain answers to their questions from your office. Opportunities exist in some specialties for September 1967 and applications are welcome and will be carefully considered by the Professional Education Branch, Personnel and Training Directorate, Office of The Surgeon General.

"Sixth, officers who have not attended the Armed Forces Entrance and Examining Station Course at Fort Sam Houston, Texas, have limited utilization at these stations. They are not acquainted with induction procedures and regulations. Therefore, it is not the policy of this office to assign Vietnam returnees to these duties."

ROTATION POLICY ON MEDICAL CORPS OFFICERS

From time to time there has been misunderstanding regarding the policy pertaining to the rotation of Medical Corps Officers from field units to hospitals and dispensaries. The following is a restatement of that policy for the guidance of all Medical Officers in USARV Units:

"Medical Corps officers assigned to combat field units may submit applications for transfer to hospitals or dispensaries between their fifth and sixth month in-country with the unit. Applications will be retained on file and when a replacement is available the application for transfer will be approved. Where a number of physicians from a division or separate brigade apply for transfer the recommendation of the division or brigade surgeon as to the priority of reassignment will be followed."

Presently, a shortage of Medical Corps Officers in MOS 3100 and D3150 exists throughout USARV. Replacements in these MOS's are few. This shortage was caused by the small number of physicians in this category being drafted. The shortage is Army-wide.

Each application for transfer is considered separately on its merits by the personnel and consultant staff, Office of the Surgeon, USARV. Transfer is not automatically insured by submission of a transfer application but will depend on the insurance of smoothly functioning units with experienced personnel, the availability of replacements, the matching of MOS spaces, and the quality of professional and administrative performance by the individual medical officer as observed and described by the division surgeon, brigade surgeon, or other supervisors.

Nurses Notes

LTC Jennie L. Caylor, ANC, arrived in Vietnam 28 February 1967 to assume the duties of Chief Nurse, USARV. Her previous assignment was as Chief Nurse, Womack Army Hospital, Ft Bragg, N.C.

LTC Caylor replaced LTC Marion Tierney, ANC, who recently completed a year as Chief Nurse for USARV. Prior to departure, LTC Tierney was awarded the Legion of Merit and The Army Commendation Medal for her distinguished service to Army Medicine in Vietnam.

WELCOME TO NEW COMMANDERS

Recent arrivals and position changes have provided several new commanders in 44th Medical Brigade Units. LTC Paul Siebert assumed command of the 36th Evac Hospital as LTC James Dubois moved to the 93rd Evac Hospital replacing LTC Harman who returned to CONUS. LTC Richard Hamilton became the commander of the 74th Medical Battalion when LTC Dwight Morss moved to the 3rd Field Hospital upon LTC Joe Molloy's departure for CONUS. LTC Donald Tilson is now in command of the 17th Field Hospital replacing MAJ John Withers who has also rotated to CONUS. LTC Henry Cosand is the most recent arrival, as replacement for LTC Holzworth at the 67th Evac Hospital.

OTHER NEWCOMERS

The Headquarters of the 44th Medical Brigade, having completed its first year in RVN, is saying farewell to its charter members and welcoming new friends. COL Thomas Caito, XO, has been replaced by COL Larry Coker who was formerly XO for the USARV Surgeon. LTC John Hammett, S-3, was replaced by LTC Ralph Parkinson from the 43rd Medical Group. LTC John Wrigley's replacement as Chief, Plans and Operations is LTC William Knowles, former CO, 498th Med Co (AA). The new S-4, replacing LTC Lester Boyd, is LTC Bernard Kerwin, formerly CO, 32nd Medical Depot. MAJ Frank DiMuccio and CPT Walter Johnson arrived from CONUS to replace MAJ Leonard Olson and MAJ Charles Washington respectively.

The Brigade added a new staff member, LTC Rose Straley, ANC, a recent arrival from OTSG, who will occupy the position of Chief Nurse for the Brigade.

HOSPITAL OPENINGS

On 15 March the 91st Evacuation Hospital opened its doors in Tuy Hoa to receive patients. In a ceremony attended by a number of distinguished guests including Colonel David G. Eisner, Surgeon, MACV, and Colonel Edmund R. Kielman, Deputy Surgeon, USARV, Colonel Enrico D. Carrasco, Commander of the 43rd Medical Group, cut the ribbon to mark the official opening. Following this LTC John G. Maier conducted the guests on a tour of the hospital. This fine hospital is a monument to the medics who built it.

The 7th Surgical Hospital is planning to reopen soon in its new facility near Xuan Loc, where it will be in support of the 11th Armored Cavalry Regiment.



The 36th Evacuation Hospital, Vung Tau

This hospital is part of the 68th Medical Group of the 44th Medical Brigade. The 68th controls the Army medical facilities, other than those belonging to tactical units, in the III and IV Corps areas.

NEW ARRIVALS

<u>NAME</u>	<u>GRADE</u>	<u>BRANCH</u>	<u>ARRIVED</u>	<u>ASSIGNED</u>
Anistranski, Charles	LTC	MS	16Jan67	68th Med Gp
Miller, Robert E.	LTC	MC	15Jan67	44th Med Bde
Stocks, Harold W.	MAJ	MS	22Jan67	68th Med Gp
Tilson, Donald H.	LTC	MC	23Jan67	17th Fld Hosp
Raffety, John E.	MAJ	MC	29Jan67	24th Evac Hosp
Mendenhall, John	MAJ	MS	1Feb67	498th Med Co
Ciseell, Donald	MAJ	MS	1Feb67	67th Evac Hosp
Young, Mary G.	MAJ	ANC	4Feb67	24th Evac Hosp
Gerber, Robert M.	LTC	MS	4Feb67	II FFV
Wiley, Hugh S.	LTC	MC	6Feb67	25th Inf Div (-)
Lauck, Earl W.	MAJ	MS	6Feb67	55th Med Gp
Duvall, Wallace L.	LTC	MS	6Feb67	36th Evac Hosp
Nacheff, Nathaniel	MAJ	MC	10Feb67	93rd Evac Hosp
Baker, George I.	LTC	MC	12Feb67	II FFV
Faubion, Marie	MAJ	ANC	13Feb67	8th Fld Hosp
Dowless, John	MAJ	MS	13Feb67	17th Fld Hosp
DiMuccio, Frank	MAJ	MS	13Feb67	44th Med Bde
Burton, Thomas H.	MAJ	MC	16Feb67	36th Evac Hosp
Taft, Foster H. Jr.	LTC	MC	17Feb67	9th Med Bn
McKeone, William J.	MAJ	ANC	22Feb67	45th MASH
Sequra, Maria	MAJ	ANC	24Feb67	67th Evac Hosp
Long, Johnnie E.	LTC	ANC	24Feb67	67th Evac Hosp
Clark, Allyn L.	MAJ	MS	28Feb67	9th Inf Div
Dirks, Kenneth R.	LTC	MC	28Feb67	406th Med Lab
Westhoven, Mary F.	MAJ	AMSC	26Feb67	17th Fld Hosp
Cates, Mildred M.	MAJ	ANC	26Feb67	71st Evac Hosp
Pippin, Alton J.	MAJ	ANC	26Feb67	17th Fld Hosp
Caylor, Jennie L.	LTC	ANC	28Feb67	HQ USARV
Thompson, Willard E.	COL	MS	1Mar67	HQ USARV
Douglas, Maxine	MAJ	ANC	2Mar67	91st Evac Hosp
Vance, Vivian J.	MAJ	ANC	2Mar67	91st Evac Hosp
Gorman, Eily P.	MAJ	ANC	2Mar67	91st Evac Hosp
Kuehn, Dorothy M.	MAJ	ANC	2Mar67	91st Evac Hosp
Jablunovsky, Anne C.	MAJ	ANC	2Mar67	91st Evac Hosp
Canfield, Margaret E.	MAJ	ANC	2Mar67	91st Evac Hosp
Berry, Christine H.	MAJ	ANC	2Mar67	91st Evac Hosp
Flagg, Alice M.	MAJ	ANC	2Mar67	91st Evac Hosp
Wagoner, Dale E.	MAJ	MSC	2Mar67	43d Med Gp
Zak, Henry L.	LTC	DC	2Mar67	93rd Evac Hosp
Anderson, Kirby V.	MAJ	MC	3Mar67	563rd Med Co
Gold, William F.	MAJ	MSC	4Mar67	61st Med Bn
Coleman, Patricia	MAJ	ANC	6Mar67	3rd Fld Hosp
Cosand, Henry C.	LTC	MC	9Mar67	67th Evac Hosp
Boyd, Charles M.	MAJ	MC	11Mar67	8th Fld Hosp
Strevey, Tracy E. Jr.	LTC	MC	12Mar67	85th Evac Hosp
Straley, Rose V.	LTC	ANC	9Mar67	44th Med Bde

THE VIEW FROM THE REAR

Captain Noel A. Miller, MSC

The following is a hypothetical situation depicting a possible state of events an unspecified number of years henceforth. Following the time honored tradition of those for whom literary effort is an additional duty, it is emphasized that the situation described is entirely fictitious, and that any resemblance to actual persons, places or events is entirely (well, almost) coincidental.

An unidentified officer enters an unidentified staff office of a similarly unidentified Army headquarters. A harried-looking PFC glances up from a faintly smouldering typewriter, from which a half-finished itinerary protrudes. "I'd like to see Colonel Blank, please."

The PFC furtively consults his desk calendar. "I'm sorry, sir. The Colonel is up-country, escorting three Watusi medicine men through our facilities there."

"Oh. Well then, Colonel Faultless please."

"I'm afraid he's not in sir. He's escorting General Hatrack through the sanitary fill today."

"How about Major Disturbance?"

"No, sir. Two V.I.P.s arrived unregulated last night, and the Major is Staff Escort Duty Officer this week. He's spent all morning trying to locate available hotel suites with southern exposures."

"Don't suppose Captain Reprimand is here?"

Desk calendar pages turn with desperation. "He's escorting Mr. Clean from the Hoboken Department of Sanitation through the Market-place.

"My God, man! Then who's running the office?"

Stark terror shows on the PFC's face as the realization sinks in. "I guess I am, sir." Then his countenance clears. "Just a minute, sir. I think Lieutenant Shambles is still in." And he quickly leads the way through a tortuous corridor until he pauses before the final door and opens it softly.

The room is small, dark and smoke-filled. Cigarette butts fill the ash trays, and a gold bar on the collar of the haggard looking man seated there reflects dully from a desk lamp through the haze. Three telephones are arrayed on the desk amid a jungle of papers and spent coffee cups. Two of the receivers are off their hooks, and the Lieutenant, unaware of the intrusion, is mumbling incoherently into the third. The PFC whispers reverently:

"General Exposure arrives in-country tomorrow and the Lieutenant's been trying for three days to coordinate his itinerary with Pleiku."

COMBAT MEDICAL BADGE

In response to an inquiry, the following message was received from DA, 19 January 1967:

"1. Army Medical Service personnel assigned to engineer, artillery, aviation, armor or cavalry units or organizations are not repeat not eligible for award of Combat Medical Badge.

"2. Army Medical Service personnel assigned to Army Medical Unit not organic to an infantry organization are not repeat not eligible for award of the Combat Medical Badge even though the medical unit to which assigned may be attached to an infantry organization.

"3. Therefore eligibility for the CMB is limited to medical personnel (Colonels and below) assigned or attached to a medical unit of an infantry unit of brigade, regimental or smaller size, or as a member of the medical platoon of an infantry or airborne brigade headquarters company during any period the infantry unit was engaged in active ground combat."

USARV MEDICAL BULLETIN

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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.

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1. PURPOSE: The USARV Pam 40-2, The USARV Medical Bulletin, Vol II, No 2, is published in the interest of army medicine and for the information and assistance of the medical services of the US Armed Forces in RVN.

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

(AVHSU)

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