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BUMED NEWS LETTER

a digest of timely information

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Chiggers: Survey and Control: The following is an abstract of a report received by the Bureau from Lt. (jg) G. W. Wharton, H-V(S), USNR, who is in the South Pacific area as a member of one of the advance parties of Naval Medical Research Unit #2:

Chiggers are six-legged larval mites of the sub-family Trombiculinae. They are widely distributed throughout the world. Those that bite man are very annoying inasmuch as after the bite there is severe itching which may last several days. Scratching of chigger bites is frequently followed, especially in the tropics, by rather serious secondary infection. Two species of chiggers

have definitely been shown to carry tsutsugamushi fever: Trombicula akamushi and Trombicula deliensis. All of the hundred or more species in the Austra-Malayan and Oriental region should be considered as possible vectors.

Life history: The life history of chiggers with few exceptions is as follows: Eggs are laid in the soil. The six-legged larva or chigger hatches out and climbs upon low vegetation and ground litter. From this point of vantage any terrestrial vertebrate that passes along may be attacked. Amphibians, reptiles, birds and mammals, including man, all serve as hosts for chiggers. Once attached to a suitable host, the chigger injects saliva which produces a reaction resulting in the formation of a feeding tube in the skin of the host. The larva feeds for a week or more, then drops to the ground where it becomes quiescent. Soon it develops into an eight-legged, free-living nymph which eventually moults and develops into a sexually mature adult. The females then lay their eggs in the soil and the cycle is repeated. It will be noticed that the chigger bites only once during its lifetime. If a larva becomes infected with the rickettsia of tsutsugamushi, it will transmit it through the egg to the next generation, which will then be able to carry the disease to man or some other vertebrate.

Collection: There are three good methods of collecting larvae or chiggers. (1) Animals of all kinds should be examined carefully. Chiggers are most often found in certain areas, for example, the groins, axillae, appendages, ears, and eyelids. Often they will be found in colonies of from ten to fifty or more. Other areas should not be overlooked, however, and the areas hidden by scales, feathers or hair should be searched. (2) Unattached chiggers can be picked off the boots or shoes of the collector with a camel-hair brush or a sharpened stick. Many specimens can be obtained in this way. The usual method is to stand in a locality suspected of having chiggers and collect the number crawling over the shoes in five minutes. Dimethylphthalate should be used liberally to protect the collector. The larvae are small, about 0.3 millimeter. Their presence is easily detected, however, by their rapid movement. (3) Any hard, shiny object can be used in place of the collector's shoe. China bowls and saucers as well as one-foot squares of oilcloth will serve. Any of the above may be placed on the ground to be tested. After from one to five minutes they are picked up and the mites removed in the same manner as they are from the shoes. By these methods it is easy to survey an area for unattached chiggers and to obtain an idea of their abundance. Some chiggers are sensitive to climatic conditions. In order to be sure that an area is free of them, collection of larvae should be made at different times of the day and night and under varying conditions.

Adult and nymphal trombiculinids are more difficult to find. They live in the soil, and methods used for collecting soil insects are satisfactory. Perhaps the most effective and direct method is the macroscopic examination of the soil. The adults are small, one millimeter in length, brilliantly red, and

shaped like an hour glass. They have four pairs of legs and are covered with fine plumose red hairs.

Preservation for identification: The first step in preserving larvae, nymphs and adults is to kill them by placing them in boiling water. Afterwards the mites can be placed in 70 per cent alcohol for preservation. For study, the mites can be mounted in Gater's solution on a glass slide. When shipping specimens for identification, it is best to leave them in the 70 per cent alcohol.

Survey: In making a survey of an area for chiggers, special emphasis should be placed upon recording the type of habitat where each survey station is located. It will soon become apparent that chiggers prefer certain very limited areas, and that these areas will have similar characteristics of soil and moisture.

Control: Personnel can protect themselves very effectively by using dimethylphthalate, as directed on the bottle. If a chigger crosses dimethylphthalate, it is unable to bite and soon dies. In areas where the chigger problem is serious, the clothing impregnation treatment described in the Bumed News Letter, Volume 4, Number 7, of September 29, 1944, should be undertaken.

Men should be warned against sitting on the ground or on rotten logs. In advanced areas where troops have to sleep on the ground, they should have their blankets and hammocks sprayed with dimethylphthalate. One thorough application will be effective for at least a week.

In controlling chiggers several methods may be employed. Cutting and burning all underbrush will immediately clean out most of the chiggers. They will stay out if the ground is kept raked and if no trash is allowed to accumulate.

DDT has been found fairly effective when applied as a one-per-cent dust. In the Admiralty Islands oiling with Diesel oil and clearing of underbrush were successful in controlling the chiggers. Oiling alone was not effective. In camp areas clearing the ground is sufficient to wipe out the chiggers. It will take some time for them to disappear, but personnel who fail to use repellent will soon clear them from the area by acting as collecting hosts. Of course the chiggers that get on men who use insect repellent will die even before they are able to bite. The irritation causes scratching which frequently results in the death of the chiggers, since they stay on the surface of the skin and do not burrow in. The replenishing of the chigger supply can be kept at a minimum by killing off the animals found to harbor the chiggers. Special attention should be given to all ground-dwelling vertebrates, especially domestic animals, rats and ground birds.

In attempting to eliminate chiggers from an area, the survey can be used to good advantage. Chiggers are usually localized. Knowledge of their distribution will save much time and material when control is undertaken. The places of greatest abundance should be treated first. These areas can be reinfested only by chiggers brought in by the various hosts; so it will not be necessary to consider reinfestation by unattached or adult chiggers from adjacent areas that have lighter infestation. Repeated survey will indicate the effectiveness of control and will determine the rate and frequency of application of control measures.

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Penicillin in Active Rheumatic Fever: It is a well established fact that the administration of sulfonamides to patients with uncomplicated active rheumatic fever is without therapeutic benefit and has appeared in certain instances to aggravate the condition.

Two papers in the Journal of the American Medical Association of September 30, 1944, report the results of investigations designed to evaluate the therapeutic efficacy of penicillin in active rheumatic fever. One report is by Watson, Rothbard and Swift, and comes from the U. S. Navy Research Unit at the Hospital of the Rockefeller Institute for Medical Research. The second report is by Foster et al. of the Army Air Force. Both groups of investigators conclude that penicillin, given in adequate doses, fails to alter the course of the disease. The Army Air Force workers expressed the opinion that in some cases penicillin seemed to aggravate the course of the disease.

These observations relate to active rheumatic fever. It is well known that in the rheumatic subject during the quiescent phase recurrent episodes of activity can be avoided by the prophylactic administration of sulfonamides. When a patient suffering from acute rheumatic fever develops a complicating pyogenic infection which is susceptible to the action of sulfonamides or penicillin and which presents a serious threat to his life, one of these drugs should naturally be used, but with caution, and simultaneously with salicylate. In most such cases penicillin will be the drug of choice, as it appears to be less injurious than the sulfonamides to the patient with active rheumatic disease.

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Penicillin Treatment of Rat-Bite Fever: There are at least two distinct types of rat-bite fever. One, due to Spirillum minus, responds well to arsenical therapy; the other, due to Streptobacillus moniliformis, has hitherto been refractory to treatment. Three cases of rat-bite fever due to the latter organism were treated with penicillin. In two of these a prompt, dramatic response to treatment was followed by complete recovery. Only 132,000 units of penicillin were available for the third case. Although prompt improvement

was noted, a relapse occurred with discontinuance of penicillin therapy. The Streptobacillus moniliformis isolated from each of the three cases was sensitive to penicillin in vitro. (Altemeier, Snyder and Howe, University of Cincinnati - OEMcmr-62.) (CMR Bulletin)

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Electrolyte, Water and Nitrogen Metabolism in Acute P. Vivax Malaria: Emerson and Dole have recently made a study of the metabolic disturbances that result from malaria paroxysms with a view to defining more accurately the supportive therapy needed by patients with malaria.

Dietary intakes and urinary excretions of water, chloride, sodium, potassium, nitrogen, phosphorus and calcium were measured at 24-hour intervals during and for six to twelve days following paroxysms in three patients with relapsing P. vivax malaria.

The patients throughout the entire study were placed on measured intakes of food, water and salt, held approximately constant except during febrile periods. Urinary excretion of water, chloride, nitrogen, potassium sodium and phosphorus were determined in 24-hour periods and the intake-urinary output differences calculated. Losses in feces and sweat were not measured. Serum concentrations of potassium, sodium, calcium and phosphorus were determined during and following paroxysms.

One potentially dangerous effect of a malarial paroxysm is the marked depression in blood pressure, which falls to a minimum shortly after the onset of the sweating stage. It was not unusual to find the blood pressure as low as 80 to 90 mm. Hg systolic over 0 to 30 mm. Hg diastolic at this point. None of the patients observed appeared to feel any ill effects therefrom, except weakness, but it would be possible for such a patient to progress into circulatory collapse. This phenomenon presumably results from the combined effects of vasodilatation and loss of extracellular fluid. The lost extracellular fluid could and should be replaced by salt and fluids judiciously administered.

The difference between intake and urinary output of water averaged about 3.5 liters on the days of chills as compared with an average difference of about 1.5 liters in convalescence. Since the patients' weights remained approximately constant, the extra 2.0 liters must have been lost by extrarenal channels, presumably in the sweat and in vomitus. It is of interest that relatively more salt than water appeared to be excreted in the urine either during the period of the paroxysm or immediately following. The probable explanation of this phenomenon is that relatively more water than salt was lost in the sweat, which is hypotonic as compared to body fluids. The resultant tendency toward a hypertonic extracellular fluid is corrected by specific renal excretion

of salt despite the fact that the total amount of salt in the body is less than normal. It would appear, therefore, that water and salt loss from sweating would be most effectively replaced if given in the same proportion as their loss in the sweat, since such replacement would maintain both volume and salt concentration of the extracellular fluid. Fluid of such a concentration is quite palatable and can be taken by mouth unless the paroxysm is complicated by excessive vomiting. In the presence of vomiting saline should be given intravenously both because the oral route is not available and because relatively more salt is probably required.

Thirst presumably is the best guide to estimation of the total amount of fluid needed. In the majority of cases the patient should thus automatically maintain a fairly normal extracellular fluid if allowed to drink, as desired, a solution containing about 3.0 Gm. of salt per liter.

Large amounts of nitrogen and potassium were lost during paroxysms, so that the urinary excretions of each frequently exceeded the intake. In convalescence large retentions of these elements were observed. During the treatment periods the average daily dietary intakes exceeded the urinary excretions by 4.0 Gm. of nitrogen and 2.2 Gm. of potassium. These high retentions show that a large amount of protein must have been catabolized during the paroxysm, and indicate that the patient in convalescence had an unusual need for dietary protein to replace his losses. A diet high in protein and calories should, therefore, accelerate his return to normal weight and vigor.

Serum potassium was found not to be significantly elevated in any of 44 determinations, which included samples taken before, at the onset of, during and after paroxysms. In this series there was a tendency for potassium concentration to be lower than normal during the initial paroxysm. These findings do not support the suggestion that hypoactivity of the adrenal cortex may occur in malaria, although it is possible that it may complicate severe chronic malaria. In any case there did not appear to be an indication for adrenal therapy in the group of patients of this study.

A slight loss of phosphorus occurred with the paroxysms, as would be expected from the nitrogen loss. No specific replacement of this element would be required since sufficient amounts are given in a high protein diet. No characteristic changes in the serum level or urinary excretion of calcium were observed. Serum sodium concentrations showed no significant change. Urine sodium excretion paralleled that of chloride. (From the Naval Medical Research Unit #2 and the Navy Research Unit at the Hospital of The Rockefeller Institute for Medical Research.)

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Bleeding Gums in the Royal Air Force Personnel: Bleeding and sponginess of the gums in persons on low intakes of ascorbic acid are often attributed to vitamin C deficiency even though there is no evidence of clinical scurvy. Two recent papers are of interest in this connection.

The first of these by McMillan and Inglis states that out of 53 cases of frank clinical scurvy only 8 of the patients had bleeding and sponginess of the gums.

The second by Stamm, MacRae and Yudkin reveals that men, at three Royal Air Force stations, on diets containing 16.8 mg. to 25.8 mg. of vitamin C daily did not develop clinical scurvy. However, among 2,962 personnel at these stations, 588 (19.8 per cent) were found to have some degree of bleeding of the gums, a similar incidence being found in the autumn and spring and at each of the stations studied.

"Observation of 600 personnel over a six-weeks' period showed that there was a large normal variation in the degree of bleeding of gums, irrespective of treatment.

"Those having bleeding or 'sponginess' of the gums showed no greater improvement with ascorbic acid treatment than with dummy tablets, although there was less normal variation in their condition.

"Patients' personal opinions as to the efficacy of treatment bore no relation to the objective signs." (Brit. M.J., Aug. '44.)

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The Biosynthesis of Riboflavin in Man: Evidence presented by Najjar and Holt that thiamine could be synthesized by bacteria in the intestine of man was mentioned in the Bumed News Letter of December 10, 1944. Recently these investigators and their associates have presented evidence of similar biosynthesis of riboflavin.

Twelve experimental subjects, placed on an experimental diet of purified vitamin-free foods, in which only supplements of pure vitamins were given, subsisted for a period of twelve weeks on a diet containing between 60 and 90 micrograms of riboflavin per day.

The excretion of riboflavin in the urine, after a preliminary drop, tended to remain constant at a value roughly twice that of riboflavin intake. The fecal excretion remained unaffected at a level of from five to six times the intake, a phenomenon which can be attributed to synthesis of riboflavin by the intestinal bacteria.

The possibility that stool riboflavin might represent excretion of body stores rather than intestinal synthesis was excluded by experiments on normal subjects in whom intravenous injection of 5 to 20 mg. caused no increase in fecal riboflavin.

An attempt to inhibit the biosynthesis of riboflavin by the intestinal bacteria by the administration of succinylsulfathiazole for a period of four weeks met with no success, which suggests that riboflavin may be produced at least in part by organisms which are not susceptible to sulfonamides.

The conclusion is drawn that riboflavin may not be a dietary essential under all conditions. The conditions in which it may be effectively synthesized in the intestine remain to be defined. (J.A.M.A., Oct. 7, '44.)

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The discovery that thiamine and riboflavin, as well as vitamin K and possibly folic acid, are synthesized by bacteria of the intestinal tract of man introduces important new concepts into the field of nutrition. It may be found that other elements essential in nutrition may be similarly produced. Undoubtedly currently accepted estimates with respect to the dietary requirements of some of these substances will have to be revised. The fact that in some instances prolonged administration of a sulfonamide may bring about a diminution in the supply of vitamins as a result of intestinal bacteriostatic action not only indicates ways in which certain of the deleterious effects of continued use of these compounds may be avoided but also points out an important new experimental approach in the study of nutrition.

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Gamma Globulin in Prevention and Modification of Measles: Gamma globulin (2.0 c.c.) was administered to 814 household contacts (age 6 months to 6 years) of cases of measles. None developed regular measles, 78.7 per cent were completely protected, and 21.3 per cent had modified measles. Of this latter group 92 per cent had mild and 8 per cent had moderate measles.

Of 90 similar contacts given placental globulin (5 c.c.) 23.3 per cent had severe and 37.7 per cent had modified measles. In a group of 65 similar contacts receiving no prophylaxis, 83 per cent developed measles.

It is concluded that human serum globulin is the material of choice in the prophylaxis of measles. (Greenberg, Frant and Rutstein, Department of Health, City of New York. To be published.) (CMR Bulletin)

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Effect of Wearing Sandals in Reducing the Incidence and Severity of Foot Infections: The possibility that replacing the usual types of footgear by sandals might reduce disability due to fungus infections of the feet in Army Air Force personnel has recently been investigated at Eglin Field.

Sandals were issued to approximately half of the men in each detachment stationed at the field with instructions that they might wear them at all times when on the station. The remainder of the men were required to wear the service shoe as before. The use of the sandals was optional as was the use of socks.

At the onset of the test both the men wearing sandals and those wearing the regulation shoes were classified with respect to the severity of their infections into five groups as follows:

1. Negative; very mild scaling.
2. Mild or slight scaling; redness; closed, initial or slight fissures.
3. Moderate scaling; redness; mild to moderate fissures; slight sodden patches; plaques; tissue changes.
4. Severe scaling; severe sodden patches; severe fissures; plaques; tissue changes.
5. With eczematoid condition; aggravated condition; very severe sodden patches and fissures; plaques; tissue changes.

No treatment was given to any of the men. The overall changes at the end of the first month were tabulated as follows:

Sandal Group	Non-Sandal Group (Control)
475/766 men or 62 per cent improved	121/537 men or 22 per cent improved
233/766 men or 31 per cent no change	208/537 men or 39 per cent no change
58/766 men or 7 per cent worse	208/537 men or 39 per cent worse

Thus the percentage of men showing improvement in the sandal group is three times greater than that in the control group, with only one-sixth as many becoming worse. A comparison of the incidence of foot infections initially and at the end of the first month follows:

	Initial Exam		First Monthly Re-Exam			
			Sandal Group		Non-Sandal Group	
Severity Class	No. of Men	% of Total	No. of Men	% of Total	No. of Men	% of Total
1	490	20) 51	373	48) 80	109	20) 43
2	746	31)	244	32)	125	23)
3	654	28	124	16	192	35
4	318	13) 21	19	3) 4	80	15) 22
5	195	8)	6	1)	31	7)

The "sodden" and the "vesiculative" types responded equally well.

A comparison of the incidence of foot infections initially and at the end of the second month follows:

	Initial Exam		Second Monthly Re-Exam					
			Sandal Group			Non-Sandal Group		
Severity Class	No. of Men	% of Total	No. of Men	% of Total		No. of Men	% of Total	
1	490	20) 51	373	65) 88.5		120	22) 44	
2	746	31)	134	23.5)		121	22)	
3	654	28	45	8		154	28	
4	318	13) 21	16	3) 3.5		114	21) 28	
5	195	8)	2	0.5)		40	7)	

It is significant that many men in the sandal group who initially had serious foot conditions which improved while wearing sandals, reverted to a serious condition when it became necessary for them to wear shoes again routinely. (A.A.F. Board Project #(M-4) 622.)

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Dimethylphthalate Poisoning: A case of dimethylphthalate poisoning has been reported by Major Paul C. Doehring, M.C., and Captain Andrew S. Albritton, M.C., from a portable surgical hospital in New Guinea. A soldier, aged 27, applied to his aid man for mineral oil and was given an ounce of what appeared to be mineral oil from a bottle which was labeled as such but which by subsequent laboratory analysis proved to be a bottle of insect repellent. The bottle was sent to a unit for analysis of the contents. The commanding officer, Major Thomas A. Hart, Sn.C., reported that the contents of the sample sent was "insect repellent. Trade names vary ('Ever Ready,' 'Skat,' '612,' etc.). The active ingredient of this repellent is dimethylphthalate."

After two hours, the soldier began to stagger, said he felt drunk, and was nauseated. He vomited, fell to the ground, and rapidly passed into a coma. On arrival at the portable surgical hospital about two and one-half hours after ingestion of the repellent, he was in a deep coma and all muscles were flaccid. A strong odor of dimethylphthalate was on his breath. His skin was warm, dry and pink. Pupils were equal and reacted to light. Tendon reflexes were normal. Pulse was 100 and of good quality. Blood pressure was 94 mm. systolic and 70 mm. diastolic. Temperature was 98° F. and respiration 18 per minute and regular. There were first-degree burns of his lips and buccal mucosa.

Within an hour after admission he regained consciousness and began to vomit. His temperature rose to 102.6°. A stomach lavage of sodium bicarbonate was given by tube, and 1,000 c.c. of 5 per cent solution of dextrose in physiological saline was given intravenously, together with 5 grains of caffeine and sodium benzoate subcutaneously. His condition improved rapidly. Later in the day he developed diarrhea. About six hours after admission he was more or less normal, except for a burning sensation of his lips, tongue and mouth, anorexia, mild nausea, abdominal soreness, and a diminishing diarrhea; his temperature was normal. On a bland diet, subsequent recovery was uneventful and the patient returned to duty five days after admission.

This bottle of insect repellent was taken in the battalion aid station from an M.D. Chest No. 2 which had been picked up along the trail, apparently having been dropped a few days earlier by a preceding unit. Inquiry of all concerned failed to reveal how the bottle had become mislabeled. (Bull. U. S. Army M. Dept., Oct. '44.)

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Malaria - Lack of Toxicity from Atabrine Given for Over Two Years: Two dogs which had been fed atabrine semiweekly for over two years were sacrificed. At autopsy pathological changes were lacking except for the presence of some unidentified yellowish pigment which was unassociated with an inflammatory reaction or fibroplasia. The atabrine content of various tissues was no higher than that found after four weeks of atabrine. It is concluded that the chronic administration of atabrine is not detrimental to the animal. (Lushbaugh, Univ. of Chicago - OEMcmr-317. To be published.) (CMR Bulletin)

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The Care of War Wounds: The proper surgical approach to the ever-present subject of war wounds is expressed clearly and concisely in the following extracts from a report of an evacuation hospital in the Southwest Pacific Theater.

The primary surgical treatment of wounds still stands as of foremost importance in war surgery. In 1941, W. D. Gallie wrote that the skill of the surgeon is of prime importance in the surgery of war, and nowhere is it of such great importance as in the first treatment of the wounded.

In 217 battle casualties admitted to this evacuation hospital during one campaign there were 293 wounds requiring major surgery. Four of these patients died, a mortality of less than 1 per cent. Only two patients developed wound infections while under our observation, and these were not of a serious nature. No patient developed gas bacillus infection either before or after evacuation.

In short, the routine treatment of the wound consisted of adequate debridement, gentle handling of tissues, the minimal use of sutures that ensured hemostasis, removal of accessible foreign bodies, refusal to close primarily a wound no matter how tempting, oral sulfonamide administration, loose packing of wounds, and adequate immobilization.

It is better to err on the side of too much debridement rather than too little removal of tissue. Second in technical importance is the gentle handling of tissues, a well-accepted Halstedian maxim that is too often and too easily forgotten in the heat and excitement of caring for a large number of casualties. The use of massive ligatures that burden reparative processes is interdicted. The finest catgut, preferably double or triple O, should be used exclusively for hemostasis except when dealing with major vessels. Accessible foreign bodies should be removed, but undue, enthusiastic exploration and probing may well do more harm than good. This is particularly true in the wound with multiple shell fragments. Occasionally, removal of a sizable single fragment through a counter incision may be preferred to the traversing of a long, little-traumatized tract.

Systemic administration of sulfonamides should be routine, sulfadiazine being the drug of choice. Under no circumstances should sulfathiazole be used locally in intracranial injuries. Pilcher has shown not only that the absorption of sulfathiazole is poor, but also that a high percentage of focal epilepsy follows its application to the meninges. The hazards of too tightly packing a wound, namely, incarceration of secretions and compromise of the blood supply to adjacent tissues, should be obvious and require no particular comment.

The primary closure of wounds in the field is still being practiced on occasion in spite of the many warnings and directives to the contrary. During a recent campaign in another theater, in which there were approximately 600 battle casualties, sixteen patients developed gangrene, several of whom had wounds primarily closed. Other isolated cases of infection due to Welch's bacillus have been seen to follow primary closure. Although in civilian practice many wounds may be safely closed, in field surgery, because of early evacuation of patients and the difficulties of maintaining the strictest aseptic technic, primary closure is not only impracticable but dangerous. Early secondary closure offers possibilities that as yet have not been fully explored in this theater, although in the last world war its successful use was reported and advocated by Heuer.

Immobilization of injuries of both the bones and the soft tissues, as emphasized by Orr and Trueta, has proved its worth. The many advantages may be summarized: it affords maximal rest, thus providing optimal conditions for healing; reduces pain; permits easy elevation of the injured extremity; discourages unnecessary dressings, and facilitates transportation of the wounded. (Bull. U. S. Army M. Dept., Oct. '44.)

Temporary Dental Fillings: The medical officer of a ship not carrying a dental officer reports as follows with respect to his results with temporary fillings for dental caries:

"We have had excellent results with the use of temporary fillings for dental caries. Because of the nature of our operations, we go for long periods without dental facilities. The procedure used is as follows: Clean the cavity as well as possible and dry thoroughly. Then insert, making sure the walls are covered, a stiff paste of zinc oxide, thymol iodide and eugenol. Only a pinch of thymol iodide is needed as a hardening agent. Some of these fillings have been serviceable for as long as six months. We have the patient see a dental officer as soon as possible. The above treatment without exception has stopped the aching associated with bad cavities."

The emergency treatment outlined in the above report has been in use for a number of years by members of the Navy Dental Corps. It seems worth while to call this method of treatment to the attention of medical officers on ships and at stations where there is no dental officer and where such treatment could be employed as a temporary measure in the handling of men with caries.

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Substitute for Alcohol Lamp: Lt. D. A. McKinnon who is serving with the Marines writes that where an alcohol lamp is unobtainable, a satisfactory substitute can be made from a two-ounce bottle by inserting a wick consisting of several strands of white cotton string through a hole bored in the top.

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Symptomatic Neurosyphilis; A Clinical Survey: The following paper was written by Drs. Harry C. Solomon, J. E. Moore, Paul A. O'Leary, John H. Stokes, and Evan Thomas, in response to a request for such an article from the Surgeon General of the Army to the Subcommittee on Venereal Diseases of the National Research Council:

The symptoms of syphilis of the nervous system may simulate all forms and varieties of neuropsychiatric disorder. It therefore becomes a postulate that in disorders suggesting organic involvement of the nervous system, whether the symptoms or signs be physical or mental, neurosyphilis must be ruled out before making any other diagnosis. It is equally true that before making the diagnosis of neurosyphilis, all physical and psychogenic factors which may be of etiologic importance must be carefully evaluated. It should be borne in mind that syphilis gives no immunity to other diseases and that the coincidence of two disorders is always possible.

Neurosyphilis is that condition in which the tissues of the nervous system, the meninges surrounding the nervous elements, and the blood vessels which traverse the nervous system are invaded by the Spirocheta pallida.

To understand the symptoms of neurosyphilis one should bear in mind certain anatomic facts. The central nervous system consists of three types of tissues: the nervous structures, the meninges and the blood vessels. The last two tissues arise from the mesoderm whereas the nervous elements are of ectodermal origin. Although the meninges surround the central neural elements and the blood vessels pervade and cut through nervous structures, they are separated each from the other by a limiting membrane.

The pathologic response of the tissues of mesodermal origin to the invasion of the spirochetes is a chronic inflammatory and proliferative reaction similar to that found in the skin and viscera. On the other hand, the nerve cells respond only by necrobiosis. The neuroglia cells, however, increase in number either as a reaction to the invasion of the spirochetes or as a type of replacement scar tissue when neurons have been destroyed.

The difference in the pathologic response, together with the fact that syphilis of the meninges and blood vessels rarely spreads to the underlying or surrounding nervous structure, permits the division of cases of neurosyphilis into two main categories: (1) meningovascular neurosyphilis and (2) parenchymatous neurosyphilis. The clinical distinction between those two varieties of neurosyphilis is of importance for (a) meningovascular neurosyphilis produces little or no irreparable damage to nerve cells, except secondarily by interruption of blood supply; and (b) meningovascular cases are much more beneficially affected by trivalent arsenicals and bismuth than are cases of parenchymatous neurosyphilis.

The symptoms of neurosyphilis are directly dependent upon the locus of involvement and the extent of the lesion. Theoretically, one should be able with careful evaluation to localize correctly the portion of the nervous system involved. This, however, is not always possible clinically.

In a pure meningeal invasion, involvement may be limited to a small portion of either the spinal or intracranial meninges, or it may be very widespread. The involvement may be primarily spinal, at the base of the brain, in the meninges over the vertex of the cerebrum, or confined to an even more limited area. The meningeal inflammation may be slight or extremely severe, with proliferation in circumscribed areas leading to local pressure.

The symptoms, therefore, of meningeal neurosyphilis will depend upon what nervous structures are secondarily involved because of the close juxtaposition of these tissues to the meningeal inflammation and its extent, as well as to whether vascular thrombosis has occurred. Thus a marked inflammatory

reaction in the meninges surrounding the thoracic spinal cord may strangulate the cord and cause the symptoms of cord transection. Involvement of the meninges at the base of the brain may lead to involvement of the cerebral nerves as they pass through the pia-arachnoid, causing extra-ocular muscle palsies, facial paralysis, or interference with function of other nerves. An inflammatory process which interferes with the outflow of cerebrospinal fluid through the basal foramina will produce increased intracranial pressure with all the symptoms and signs incident thereto. The meninges over the vertex may become so thickened as to produce focal or general pressure signs. If focal pressure occurs over the central area of the brain, convulsive seizures may ensue.

Similarly, involvement of the blood vessels by the syphilitic process may cause damage to any vessel supplying the nervous system; and if thrombosis results, the necessary blood supply will be cut off and nerve cell destruction may result. As practically any vessel may be damaged, leading to thrombosis and perhaps occasionally to rupture, every known syndrome of nervous system disease or disorder may develop.

The invasion of the nervous tissue by the spirochetes (parenchymatous neurosyphilis) may show any type of symptomatology owing to injury or destruction of nerve cells. The symptoms are either psychiatric or neurologic, or both. However, in the majority of cerebral cases the frontal lobes are predominantly involved giving rise to the syndrome of general paresis. In the cord, the posterior roots and posterior columns of the lumbo-thoracic cord are most commonly involved, producing the clinical picture of tabes dorsalis.

The clinical manifestations of neurosyphilis may be classified under the following main headings: (1) meningeal neurosyphilis, (2) meningovascular neurosyphilis, (3) tabetic neurosyphilis, (4) paretic neurosyphilis, (5) vascular neurosyphilis, (6) congenital neurosyphilis, (7) various relatively rare and controversial syndromes, such as chronic anterior poliomyelitis, Parkinsonism, and disseminated sclerosis-like pictures (the last group is not described here).

1. Syphilitic Meningitis: Meningeal neurosyphilis may be either (A) acute or (B) chronic.

(A) Acute meningeal neurosyphilis usually occurs in the first two years of the syphilitic infection. In the early stage of syphilis the meninges frequently show an inflammatory reaction. In most cases, recovery is either spontaneous or a result of routine treatment, but occasionally there occurs the syndrome of acute meningitis of a fulminating type. This is characterized symptomatically by a picture reminiscent of meningococcal meningitis with

fever, headache, stiff neck and Kernig's sign. The spinal fluid may have a pleocytosis up to a thousand or more cells, 40 per cent of which may be polymorphonuclear leukocytes.

In most cases the meningitis is of a much lower grade with less marked symptoms, consisting chiefly of headache, dizziness and malaise. The cell count may be normal or as high as 100 to 200 cells.

In acute meningitis, globulin and total protein of the spinal fluid may or may not be greatly increased. The colloidal tests may be of any variety and the complement-fixation or flocculation tests may be either strongly positive or, more rarely, negative.

Acute syphilitic meningitis is relatively rare, but is probably seen most frequently in individuals who have had a few arsenical injections, and then lapsed from treatment.

The response to modern antisyphilitic treatment is usually prompt and satisfactory.

(B) Chronic syphilitic meningitis may occur at any time in the late period of syphilis but in most instances symptoms arise within five years of the original infection, although it may be encountered after more than twenty years. Apparently trauma is occasionally a precipitating factor in the development of symptoms.

As stated above, the symptoms may be of many types depending upon localization and extent of the lesion. Among the syndromes encountered are the following:

(a) Meningitis of the vertex is characterized by headache, nausea, vomiting and convulsions, and when the meningitis is extremely marked, the signs of increased intracranial pressure may arise.

(b) Meningitis of the base of the brain may lead to involvement of the cranial nerves producing such effects as extra-ocular muscle palsy, facial paralysis, deafness and rarely trigeminal neuralgia.

(c) Involvement of the meninges surrounding the optic nerves produces visual symptoms due to optic neuritis.

(d) Meningitis of the posterior fossa may lead to internal hydrocephalus and the signs and symptoms of increased intracranial pressure.

(e) When the meninges surrounding the spinal cord are involved, the clinical manifestations of spinal cord disease including root pains, paraplegia or even tetraplegia are produced.

(f) A rare variety of late meningeal reaction is in the form of a circumscribed swelling or gumma. This is very rare, probably more frequently encountered in the region of the spinal cord than within the skull.

The spinal fluid picture in chronic meningitis may be variable. The cell count may be normal or elevated to several hundred lymphocytes. Globulin may be absent or present in large amounts. Similarly, total protein may be within normal limits or as high as 200 mgs. per cent. The colloidal tests may be normal or range up to the first zone or paretic type reaction, and likewise the complement-fixation reaction and flocculation tests vary from normal to the most strongly positive. Any combination in the formula of these tests may be found.

The diagnosis depends on an evaluation of the combined clinical and serologic evidence.

The prognosis, unless tissue destruction from pressure or scarring has occurred before treatment is instituted, is good. Many of the cases are satisfactorily managed with the use of standard antisyphilitic treatment. Others require a pentavalent arsenical or fever therapy.

2. Meningovascular Neurosyphilis: In meningovascular neurosyphilis there is involvement of the blood vessels as well as the meninges. Probably one type of involvement does not exist without the other, but when there is clinical evidence of vascular disease, the term meningovascular neurosyphilis is used, implying that the meninges are inflamed. The spirochete invades the blood vessel wall and creates the proper condition for the formation of vascular thrombosis. The resulting symptoms depend on the location and size of the vessel thrombosed. Loss of consciousness, attacks of dizziness and mental confusion occur. The symptoms also include monoplegia, hemiplegia, aphasia, hemianopsia, cerebellar syndromes and all types of psychotic behavior.

Thromboses rarely occur in the first six to twelve months of the infection. They occur more frequently in the succeeding five to ten years, with greatest frequency eight to fifteen years after the infection. Characteristic pupillary signs may or may not be present.

The spinal fluid gives a strong or group III formula in about 50 per cent of the cases, whereas in the remaining 50 per cent weaker formulae of any variety are found.

The prognosis in treated cases is not altogether bad. There is often a marked improvement of the signs of paralysis or psychosis in a few weeks, but repeated thromboses may occur.

3. Tabes Dorsalis: Tabetic neurosyphilis (tabes dorsalis, locomotor ataxia) is a type of neurosyphilis in which the posterior roots and posterior columns of the spinal cord show degeneration, with frequent involvement of the mid-brain and very probably of the sympathetic nervous system.

The major symptoms are (a) ataxia, (b) pain, (c) visceral crises, (d) diplopia, (e) disturbance of bladder and sexual function, (f) loss of visual acuity. These symptoms may occur separately or in combination.

(a) Ataxia, which is due to the diminution of the sense of motion and of position, is usually first perceived as difficulty in walking in the dark, trouble in making sudden changes in direction and in walking a straight line. Associated with ataxia, there is usually a sensation in the soles of the feet described as walking on cotton or on a thick rug.

(b) Pain of an excruciating, lancinating type, often described as if a hot wire were thrust into the flesh or as a pinching of the skin, is very characteristic. Each jab of pain is likely to be instantaneous, and repeated over and over again at short intervals for hours or days at a time. Frequently the pain is localized in a small area as in the toe, the heel, the ankle, the calf or the thigh. The pain may jump from one of these areas to another but often remains in the same spot. At first the pains are mild, with long intervals between attacks. As time goes on they become more severe, longer lasting and more frequently repeated. These pains are often precipitated by cold, wet weather, intercurrent infections or fatigue. There are infinite variations of the pattern. Some patients describe merely attacks of what seem like a feather being drawn across the skin, mild neuralgic pains or sensations like an electric current being applied to the skin. Many patients suffer from hypersensitivity of the skin, especially about the trunk, so that the pressure of clothes becomes very uncomfortable. Getting into a bathtub of warm water may be almost intolerable. Some have a sense of constriction about the waist.

(c) Visceral crises. The most common visceral crises are related to the upper part of the gastrointestinal tract, characterized by attacks of nausea and vomiting with or without severe cramp-like pains or with pain alone. Rectal crises are characterized by pain in the region of the anus and rectum with tenesmus. Sometimes diarrhea, at other times constipation, is associated with them. Other crises such as laryngeal spasms occur. Characteristically, these crises occur in spells separated by days, weeks or months. In a typical gastric crisis vomiting may last for days, leading to marked dehydration. There are many variants of the gastric crisis. Occasionally one encounters a patient who has regular morning vomiting. Others speak of periodic attacks of indigestion. Duodenal ulcers are not infrequent in patients with gastric crises.

(d) Diplopia is a common occurrence in the tabetic, often the first evidence of the disease. Ptosis of the eyelid also is frequent. Paralysis of accommodation (internal ophthalmoplegia) may also occur. Diplopia may result from partial or complete paralysis of the third, fourth or sixth cranial nerves, most frequently the third. The symptom often disappears spontaneously in the first attack, but if untreated there is likely to be a recurrence, and following recurrence often a permanent palsy.

(e) Bladder and sexual disturbances. Loss of bladder sensation leads to distention, loss of tone and overflow, incontinence. Patients often boast of their capacity to hold the urine all day. After voiding there is usually considerable residual urine. Secondary infection and pyelonephritis are not uncommon. Loss of libido and potentia is a frequent and sometimes early symptom.

(f) Loss of visual acuity. Optic atrophy is a characteristic sign of tabetic neurosyphilis leading to loss of eyesight and complete blindness. Generally it begins with night blindness and more or less rapidly proceeds to complete loss of vision. At an early stage it may be quite difficult if not impossible to differentiate optic retrobulbar neuritis due to an inflammatory process from true tabetic optic atrophy. When optic atrophy occurs the other symptoms of tabes are usually minimal. The prognosis of optic atrophy is poor and offers one of the severest challenges to our therapeutic skill.

The objective signs of tabetic neurosyphilis include (a) pupillary changes, (b) extra-ocular palsies, (c) diminution or absence of the knee and ankle jerks, (d) diminution or loss of the sense of vibration and position in the lower extremities, more marked in the distal portion, (e) Romberg sign, (f) ataxia, (g) zones of disturbed sensation about the trunk, (h) hypalgesia to pressure on the gonads and the tendo-Achilles, (i) hypesthesia across the nose and the dorsa of the feet.

The characteristic Argyll-Robertson pupil (small irregular pupils which fail to react to light but which react during accommodation) is found more frequently in tabes than in any other form of neurosyphilis. However, the typical Argyll-Robertson pupil is often a relatively late sign and is preceded by irregularity, inequality and poor reaction to light. Although the tabetic pupil is often small, in some instances wide pupils may be found, and it is not unusual to encounter pupils which respond neither to light nor on accommodation.

Optic atrophy is demonstrated by the pallor of the optic disc, usually associated by loss of visual acuity, frequently by restriction of the visual fields. The recognition of early optic atrophy by ophthalmoscopy is difficult and possible only by an expert ophthalmoscopist.

Tabes dorsalis is evident, as a rule, only after syphilis has existed for five years, but may develop at any time during the next twenty-five years. The onset may be insidious, ushered in by flickering pains or by a disturbance in gait or a mild visceral crisis. On the other hand, it may occur suddenly. One occasionally meets a patient who collapses and after being helped up is markedly ataxic. In like manner, the onset of a severe gastric crisis may be the first recognized symptom. In most cases, however, pupillary changes and absence of the tendon reflexes of the lower extremities precede symptoms by many months or years.

The course of tabes dorsalis is generally progressive, with a progression of symptoms and signs. However, more than a few cases arrest spontaneously, or develop a negative spinal fluid.

The spinal fluid findings in tabes dorsalis vary considerably. In many, during the acute stage of advance, one finds a strong formula such as is characteristic of general paresis. Weaker formulae are found even in the early period of progression, and in about 50 per cent of the cases there are a moderate pleocytosis, a moderate increase in globulin and total protein (50 to 60 mgs. per cent), a moderately strong colloidal gold and a moderately strong complement-fixation reaction. The spinal fluid may become normal spontaneously, but this is not necessarily paralleled by disappearance of symptoms.

A small percentage of cases responds well to standard antisyphilitic treatment. Chemotherapy and fever therapy usually arrest the progress of the inflammatory process and the spinal fluid may revert to normal. Unfortunately, however, in many of the cases in which symptoms have existed for some months before treatment is instituted, these persist despite the return of the spinal fluid to normal. This fact has led to much speculation concerning the mechanism of the symptoms in tabetic neurosyphilis and indicates that they are not due in their entirety to the activity of spirochetes.

A late complication of tabes is joint destruction of the Charcot type. This complication is the result of repeated trauma to a joint which has lost some of its normal protective sensitivity to pain. The Charcot joint often occurs in patients who have normal spinal fluids and evidence of complete arrest of the other tabetic symptoms.

4. General Paresis: General paresis (general paralysis of the insane, dementia paralytica, psychosis with syphilitic meningo-encephalitis) is a psychosis due to spirochetal invasion of the brain. The pathologic changes - nerve cell atrophy, perivascular infiltration, gliosis and chronic meningitis - exist for a long period of time prior to the development of mental changes which are the sine qua non of the disease entity.

The mental symptoms of general paresis duplicate almost all psychiatric symptom complexes, leading to the well established psychiatric dictum that diagnosis of mental disease can properly be established only after general paresis has been proved or ruled out. The onset of general paresis is usually insidious, although mental symptoms may begin with extreme suddenness. It is usual to obtain a history that before symptoms were recognized there was a period of months during which the patient had complained of headache, insomnia, capricious appetite, loss of weight, disturbance of sleep, easy fatigability and difficulty in concentration. This galaxy of symptoms is all too frequently diagnosed as psychoneurosis. In retrospect, it is generally evident that there was a gradual change in the personality and behavior of the individual, with irritability, mild memory loss, poor judgment, lack of care in personal appearance, defect in moral and ethical conduct, and unexplained deviations in character. In other patients the psychosis may be ushered in suddenly by a convulsion or a period of confusion. In many patients one obtains a history that several years before the psychosis was recognized an epileptiform or apoplectiform seizure had occurred, perhaps accompanied by hemiplegia or aphasia of short duration.

General paresis may be divided into several varieties according to the presenting symptoms of the psychosis:

(a) A simple dementing form characterized by loss of memory, loss of calculating ability, defects in judgment in association with increasing speech difficulty and tremors.

(b) The grandiose form in which ideas of grandeur and a sense of euphoria are paramount.

(c) The manic form in which there is marked similarity in symptoms to the manic phase of the manic-depressive psychosis.

(d) The depressed form similar to the depressive form of the manic-depressive psychosis.

(e) The agitated form duplicating the agitated depressions of the involutional psychoses.

(f) A schizophrenic-like syndrome with paranoid, catatonic and schizophrenic features.

(g) Epileptiform manifestations frequently repeated, often characterized as syphilitic epilepsy.

The neurologic signs encountered in general paresis are variable. Pupillary changes occur frequently but are often absent in the early stage of the

disease. Irregularity and inequality of the pupils are the most frequent of these signs found early. Disturbance in the light reaction may occur, with the Argyll-Robertson pupil or complete fixation ultimately developing. Dilated pupils are more frequent than miotic ones. Speech defect or disorder of articulation is probably the most characteristic somatic disturbance of general paresis. A break in the voice, tremulousness, overactivity of the facial muscles, even including the orbiculares oculi, with stumbling over consonants, should raise the question of general paresis. In the early stages, the speech defect is best demonstrated by having the patient repeat difficult test-phrases, such as: "Methodist Episcopal", "Third Riding Artillery Brigade", but it is often recognizable in spontaneous speech.

Tremor is a frequent and early sign and is seen in the facial muscles, the protruded tongue and the extended fingers. Rapid alternating movements of the hands and fingers are poorly performed. The tendon reflexes are often exaggerated. If tabes is co-existent, they are diminished or absent. Persistent signs of focal damage, when they occur, suggest that the case is not one of pure paresis.

The course of untreated paresis is downhill, leading to extremely marked mental and physical deterioration and death. If untreated about one-half die within two and a half years of the onset of mental symptoms, and almost all are dead within five years. During this downhill course epileptiform and apoplectiform seizures are frequent. An interesting characteristic of the paretic apoplectiform seizure is the tendency for a quick recovery from the apparent focal brain damage. Following each convulsive attack, increased mental deterioration may ensue. From 10 to 20 per cent of patients have spontaneous remissions, lasting for from several months to a year, followed by relapse.

The spinal fluid in general paresis is characteristic. The cell count varies from normal to 80 or more per cubic millimeter, globulin is present in large amounts, the total protein varies from 75 to 150 mgs. per cent, the colloidal gold test is of the first zone or paretic variety. The complement-fixation and flocculation tests are strongly positive. Only very little variation from this formula is consistent with the diagnosis of general paresis.

The prognosis of general paresis under treatment is in the majority of cases an arrest, with some residual defect, the extent depending upon the amount of damage which occurred before treatment became effective. Every case in which the physical state of the patient permits it should have fever therapy as well as chemotherapy.

5. Vascular Neurosyphilis: Purely vascular neurosyphilis without concomitant meningeal involvement (see meningovascular neurosyphilis) is a questionable entity.

There has been much discussion concerning the diagnosis of vascular neurosyphilis in syphilitic patients who have cerebral vascular accidents and a normal spinal fluid. It is our opinion that these are usually instances of degenerative arteriosclerosis or hypertension in syphilitic individuals and not primarily neurosyphilis.

6. Congenital Neurosyphilis: Juvenile neurosyphilis is the term given to neurosyphilis occurring in patients with congenital syphilis. The symptoms may be similar to those seen in the adult form of neurosyphilis, and usually appear during childhood or adolescence. The most common is that of juvenile paresis. Juvenile tabes and other forms are great rarities.

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The Common Skin Diseases (VII): Acne:

Etiology: Endocrine, bacteriologic and metabolic factors are probably all involved in the etiology of acne.

Clinical Features: There is no need to discuss the appearance of a typical case. Comedones (blackheads), papules, pustules, deep-seated cystic lesions, and the pitted scars of old lesions are seen in varying proportions. The involved skin is as a rule abnormally oily. The presence of comedones will help in distinguishing true acne from the acne-like eruption due to halogen (bromide and iodide) sensitivity.

The onset of acne usually coincides with adolescence. The areas most frequently involved are the face, anterior part of the chest and back.

So-called "oil acne" is frequently seen in men whose skin is constantly exposed to lubricating or fuel oils. The eruption is distributed over those areas either directly exposed or covered by oil-soaked clothing.

Treatment: No attempt will be made to outline a complicated therapeutic regime. Many measures that are routine in civilian dermatological practice are too time-consuming and impractical to be of value in military practice. It is believed, however, that the following suggestions may be of help in treating the average case. It will be found that many of these patients think that nothing can be done for their skin. They will be grateful for the medical officer's interest and advice.

1. Diet - The following foods should be avoided when possible: chocolate - all forms; nuts - including peanut butter; cheese; greasy and fried foods; large quantities of milk as a beverage.

2. Local Treatment:

a. One should advise against the use of creams and ointments. For shaving a lather cream should be used, not a brushless cream.

b. Frequent soap-and-water bathing is helpful, particularly in cases of "oil acne." If the skin is excessively greasy, it is a good plan to work up a soap lather on the skin and then let it dry before washing it off.

c. For routine use, a sulphur-containing lotion is prescribed as a night application. It should be left on the skin overnight.

Precipitated Sulphur	6.0
Resorcinol (optional)	1.5
Calamine	
Zinc Oxide	aa 10.0
Glycerine	6.0
Lime Water	qs ad 120.0

3. Ultraviolet irradiation, when available, is of value in increasing doses twice weekly. Mild erythema and scaling should be produced.

4. X-ray Therapy: In unusually severe cases, X-ray therapy is of distinct value. The usual dose is 75 r once weekly. This should be prescribed and administered only by a radiologist or dermatologist. If there is a history of any previous X-ray therapy, one should give no further treatment until the exact dosage previously given becomes known. (J.M.S.)

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Public Health Foreign Reports:

Disease	Place	Date	Number of Cases
Plague	China, Nancheng	Aug. 23, '44	Epidemic reported
	Egypt, Port Said	Aug. 12-19, '44	8 (5 fatal)
	Fr. West Africa, Dakar	April-Aug. '44	251 (217 fatal)
	India, Cochin	Aug. 31, '44	Reported
	Morocco - Fr.	Aug. 1-10, '44	3
	Tunisia	Aug. 29, '44	Reported
Smallpox	Fr. Equatorial Africa	June '44	204 (28 fatal)
	Italy, Naples	July 24-Aug. 7, '44	70 (2 fatal)
	Palermo	July 1-31, '44	139
Typhus Fever	Hungary	Aug. 1-12, '44	75
	Morocco - Fr.	July '44	320
	Slovakia	July 1-22, '44	15
Yellow Fever	Belgian Congo	July 22-29, '44	1 (1 fatal)

(Pub. Health Rep., Sept. 15, '44.)

To: All Ships and Stations. BUMED-Ca-GJS
P3-2/P18-1(021)

Subj: Civilian Medical and Hospital Treatment of Enlisted Personnel of the Navy and Marine Corps on Leave or Liberty. 26 Aug 1944

Ref: (a) Ltr of Assistant Comptroller General of the U. S. (B-41121, B-41800, B-41858), 27 Jun 1944.

1. Under a decision of the Assistant Comptroller General of the United States (reference), the Navy Department may now defray expenses of emergency medical and hospital treatment of enlisted personnel of the Navy and Marine Corps, obtained from civilian sources, while on leave or liberty. This authority has been construed as effective from and after 28 April 1942, the date of the appropriation act (56 Stat. 228) for the Medical Department of the Army, in which authority was first granted for similar care of Army personnel while on leave or furlough.

2. The following regulations are hereby prescribed for the information and guidance of all concerned in connection with the medical and hospital treatment of enlisted personnel of the Navy and Marine Corps while on authorized leave or liberty:

a. Expenses for civilian medical and hospital treatment will be allowed only in emergency cases where it is impracticable to obtain treatment from naval or other Government facilities. The expense of elective medical treatment under no circumstances may be allowed.

b. Enlisted personnel who become ill or are injured while on leave of absence or liberty shall apply, if practicable, to the nearest naval station or naval activity, if one is located in the vicinity; if none available, application should be made to the medical department of any other Government agency. When neither is available the individual concerned should contact his commanding officer by telephone or telegraph requesting permission to obtain civilian medical aid. Commanding officers may authorize such necessary emergency treatment as the circumstances seem to warrant, and should give appropriate instructions regarding submission of reports and bills and disposition of the case upon completion of treatment.

c. When the urgency of the situation does not permit obtaining treatment from Government facilities on the prior approval of competent naval authority, necessary emergency treatment may be obtained by or on behalf of the individual concerned, and the reasonable expenses thereof will be allowed as a charge against the Navy; provided that, within a reasonable time, report is made to his commanding officer so as to permit investigation and suitable arrangements for transfer to a Federal institution or other appropriate action.

d. Expenses for the employment of consultants or specialists will not be allowed except when authorized in advance by the Bureau of Medicine and

Surgery or, in extraordinary cases, when subsequently approved by the Bureau of Medicine and Surgery upon receipt of report and satisfactory explanation as to the necessity and urgency for their employment.

e. Civilian medical treatment of enlisted personnel absent without leave is not authorized unless and until the individual comes under military or naval control.

f. Civilian dental treatment, other than emergency measures to relieve pain, is not authorized.

g. NavMed Form U report will be required in each case. Ordinarily this form should be prepared from information available, and submitted by the station or activity to which the man is attached. When the individual reports to and receives treatment at some other station or activity, Form U report should be prepared locally and forwarded direct to the Bureau of Medicine and Surgery and a copy sent to the man's duty station. Reports and bills should be submitted in accordance with instructions in BuMed Manual.

3. The authorization in the decision of the Assistant Comptroller General does not include officers, who, under the prohibition of statute law as incorporated in Navy Regulations (art. 1189 (1)), are not entitled to medical treatment at Government expense unless they are on duty. The accounting officers of the Government in many decisions have held that officers on leave or furlough, granted for a period in excess of 24 hours, are not on duty and therefore are not entitled to medical treatment at Government expense while so absent. These decisions are reaffirmed in reference. However, recommendation has been made by the Bureau of Medicine and Surgery and approved by the Secretary of the Navy for a change in the language of the appropriation "Medical Department" which if enacted into law will place both officer and enlisted personnel of the Navy in equality with the personnel of the Army in this respect.

4. Since the authority contained in reference is retroactive to 28 April 1942, any claims acted on adversely since that date due to leave status may be resubmitted for the Bureau's consideration.

5. Paragraphs 3165 and 3166 of the Manual of the Medical Department are modified by this directive, and suitable marginal reference notations should be made pending revision. The effect of this decision on art. 1189 (5), Navy Regulations, also should be noted. --BuMed. L. Sheldon, Jr.
--Approved: James Forrestal, Secretary of the Navy.

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To: All Ships and Stations. BUMED-B-ELK
A10-3/EW(121)
Subj: Army Publications, Supplemental List of. 21 Sep 1944

Ref: (a) BuMed ltr B-DLS, A10-3/EW(121), of 12 Apr 1944, par. 2; N.D. Bul. of 30 Apr 1944, 44-490.
(b) EXOS ltr AO(Pub) over FMK:mfp, of 25 Feb 1944.

1. In accordance with reference (a), a supplemental list of U. S. Army publications treating medico-military subjects available to date for limited distribution is as follows:

List of Publications for Training

No.		Title	Date
SB	8-8	Item 12565 Liver, Purified Extract, USP 50 Units.	18 May 1944
TB 55-285	-1	Echelon Maintenance Schedule for Hospital and Kitchen Cars.	24 July 1944
TB Med	12	Lecture Outlines for Officers on Personnel Adjustment Problems.	22 Feb 1944
	24	Medical and Sanitary Data on the Kurile Islands.	27 Mar 1944
	26	Medical and Sanitary Data on the Aegean Islands.	30 Mar 1944
	27	Medical and Sanitary Data on Germany.	6 Apr 1944
	29	Medical and Sanitary Data on Norway.	4 Apr 1944
	36	Medical and Sanitary Data on Belgium.	27 Apr 1944
	38	Medical and Sanitary Data on France.	3 May 1944
	39	Medical and Sanitary Data on the Netherlands.	8 May 1944
	40	Medical and Sanitary Data on Albania.	11 May 1944
	41	Medical and Sanitary Data on the Palau Islands.	11 May 1944
	42	Data from the Field on Malaria Control.	13 May 1944
	46	Medical and Sanitary Data on Kamchatka.	28 May 1944
	47	Control of Diseases of Respiratory System and Other Diseases Transmitted by Discharge from Respiratory Tract.	28 May 1944
	48	Management of Neurosyphilis.	31 May 1944
	49	Medical and Sanitary Data on Rumania.	31 May 1944
	50	Medical and Sanitary Data on the Caroline Islands.	31 May 1944
	63	Medical and Sanitary Data on Thailand.	5 July 1944
	67	Medical and Sanitary Data on Celebes.	19 July 1944
	68	Medical and Sanitary Data on Philippine Islands.	18 July 1944

List of Publications for Training (Cont.)

No.		Title	Date
TB Med	69	Notes on Certain Diseases of the Chest.	22 July 1944
	70	Medical and Sanitary Data on the Molukken Islands and Islands in the Eastern Part of the Banda Sea.	21 July 1944
	71	Tuberculous Pleurisy with Effusion.	28 July 1944
	72	Treatment of Clinical Malaria and Malarial Parasitemia.	10 July 1944
	73	Medical and Sanitary Data on Yugoslavia.	31 July 1944
	77	Medical and Sanitary Data on Burma.	2 Aug 1944
	78	Taking of Blood Specimens.	4 Aug 1944
	81	Trench Foot.	4 Aug 1944
	82	Sand-Fly (Pappataci, Phlebotomus) Fever	8 Aug 1944
	87	Data on Malaria Control.	23 Aug 1944
	89	Pilonidal Cyst and Sinus.	2 Sep 1944
TB Sig	76	Improved Psychrometric Measurements with Psychrometers ML-24 and ML-224.	11 Aug 1944

2. Medical Department activities may obtain copies of any of these listed Army publications by letter request directed to BuMed. These letter requests should give the catalog number, title, and date of publication, and number of copies needed for a six-month period as of 1 July and 1 January.

--BuMed. L. Sheldon, Jr.

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To: All Ships and Stations. Pers-3631
P2-5, AS

Subj: Radium Plaque Adaptometer (Night Vision) Test. 21 Sep 1944

Ref: (a) BuPers-BuMed rest. ltr P2-5/P3-1(103-51), of 22 Mar 1944; N.D. Bul. of 31 Mar 1944, 44-404.
(b) BuPers-BuMed ltr P2-5/P3-1(103-51), BuMed T1-FL, of 8 Jun 1944; N.D. Bul. of 15 Jun 1944, 44-703.
(c) BuPers-BuMed ltr BuMed-H3-CRE, P2-5/P3-1(103-51), of 25 July 1944; N.D. Bul. of 15 Aug 1944, 44-942.

1. Each report of physical examination, NMS Form Y, submitted with an application of an enlisted man for appointment as a commissioned officer in the Navy or Naval Reserve (temporary or permanent) in accordance with current directives shall contain a statement that he has been tested with the Radium Plaque Adaptometer (night vision) and that he has passed or failed the test.

2. Full instructions with respect to the testing of naval personnel with the Radium Plaque Adaptometer are contained in references (a), (b) and (c).

3. The results of the Radium Plaque Adaptometer test will be of importance in determining duty assignments, but failure to pass the test will not disqualify an applicant for appointment as a commissioned officer at the present time. When sufficient experience with this test has shown that night blindness can positively be detected, those who fail the test will not be commissioned in any but specialist categories. --BuPers. L. E. Denfeld.

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To: All Ships and Stations. BUMED-Y-LEE
P2-3/P3-1(012-41)

Subj: Publicity Policy on Malaria and Malaria Control. 26 Sep 1944

Ref: (a) Joint Chiefs of Staff Memo JSC/B22, serial 7109, of 29 Jul 1944.

1. By reference (a) the publicity policy on malaria and malaria control, approved by the Joint Chiefs of Staff and concurred in by the Inter Service Security Board, became effective at 1800 Z on 30 July 1944.

2. As set forth in reference (a), information regarding malaria and malaria control will be divided into the following classes:

A. Classified:

1. Full chemical names, formulae, methods of manufacture and propagation of new chemicals and biological agents for the treatment, prophylaxis, or field control of malaria which are developed after the date of approval of this policy or which are now developed and are presumed to be unknown to the enemy.

2. Statistical information concerning the incidence of malaria in the armed forces in any particular combat area and the casualties or the casualty rates resulting therefrom.

3. Information involving designation of theaters of operation by names and locations.

4. Information which reveals the scope and extent of our research in this field or the progress made in any specific phase of such research.

5. Information which reveals the full extent of antimalarial measures which are being taken in any particular combat area.

6. Information concerning deployment of malaria control and survey units.

B. Unclassified: Information about malaria and malaria control which has already been published and is a matter of common knowledge.

1. Clinical description of malaria.

2. Material on the biology of malaria parasites and vectors.

3. Names of existing chemicals or biological agents used for the treatment, prophylaxis, or field control of malaria which are matters of common knowledge.

3. Within the limits of the policy stated above, the Surgeon General will recommend for release, subject to clearance with the Office of Public Relations, Navy Department, suitable material dealing with malaria and malaria control provided it is such as to be considered unclassified.

--BuMed. Ross T McIntire.

To: All Ships and Stations. Pers-3A-EM
P19-1

Subj: Retired Officers, Line and Staff Corps of the Regular Navy and Reserve - Release from Active Duty. 26 Sep 1944

1. Beginning with the declaration of a national emergency in 1939, available retired officers, including those retired for physical disability, were recalled to active duty. Since that time, these officers and many officers retired subsequent to that time have served the Nation and the Navy well. They have performed invaluable service in developing the Navy to its present strength and efficiency. Many have performed this service at a very considerable personal sacrifice.

2. The officer-personnel situation has now improved sufficiently through the training of younger officers, both reserves and regulars, to permit the commending of a progressive release of retired officers from further active duty.

3. The release of retired officers from active duty is not to be construed as other than one of the essential first steps to adjust officer personnel to current and prospective requirements of the naval service.

4. The release of retired officers from active duty must necessarily proceed gradually so as to result in a minimum disturbance to the naval service. For this reason, it is the Bureau's intention to release first those officers whose physical condition or advanced age in-grade renders desirable their early return to inactive duty. As a general guide in the interests of uniformity, the Bureau wishes first consideration for return to inactive duty given to all retired officers of or above the ages indicated below:

Flag officers	64
Captains	60
Commanders	55
Lieutenant commanders	50
Lieutenants	45
Lieutenants (jg)	45
Ensigns	45
CWO and WO	50

5. The above table is not intended to limit release only to those officers over the ages indicated. The desires of individual retired officers of any ages for return to inactive duty are to be given favorable consideration whenever the needs of the service permit.

6. In order to provide the Bureau with full information on which to base an orderly execution of this plan, bureaus, administrative offices, and commanding

officers are directed to forward to the Bureau their recommendations regarding the order of release to inactive duty of retired officers under their commands, indicating the names of those retired officers whose services can be spared without an immediate contact relief. Where necessary, an adequate relief will be provided within a reasonable time. The names of any officers, regardless of age, whom commanding officers consider not physically or otherwise fully qualified to remain on active duty should be indicated.

--BuPers. L. E. Denfeld.

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To: All Ships and Stations. Pers-6303-V
IJ-1, NH

Subj: Officer and Enlisted Personnel - Transfer of Overseas Casualties to Naval Hospitals in Home Localities. 30 Sep 1944

Ref: (a) BuMed ltr Rl-DMH, P16-3/P3-2(082), of 14 Sep 1944.
(b) BuPers Circ. Ltr 196-43; N.D. Bul. Cum. Ed. 1943, p. 867. (Which establishes a convalescent leave status for officers.)
(c) BuPers ltr Pers-630-RFT(9), of 26 Apr 1943, to Continental Naval Hospitals. (Which establishes a convalescent leave status for enlisted men.)

1. As recommended in reference (a), the provisions of this directive apply to officer and enlisted personnel wounded in action, or otherwise disabled while serving overseas, to an extent requiring prolonged hospitalization or convalescence in the United States.

2. Personnel hospitalized at a continental naval hospital in the vicinity of the port of debarkation, or those transferred to another hospital for treatment, who require further hospitalization or convalescence for a period of thirty days or more, may be transferred at Government expense to a naval hospital nearer their homes, for convalescence or hospitalization and further disposition.

3. For medical and psychological reasons, such transfers are not to be considered as for the convenience of the officer or man, but as a means to assist in recovery, adjustment and final disposition. Current instructions which require patients to bear the expense of their own transportation when requesting transfer from one hospital to another, do not apply in the cases of officers and men referred to in paragraph (1) above. Instructions in this regard, as contained in references (b) and (c) are modified accordingly.

4. In order to exercise control over the number of patients on convalescent leave, and to insure adequate bed capacity upon return therefrom, the following

procedure is directed. When patients are no longer in need of active hospitalization, but would benefit by a period of convalescence at home, one of the following options shall be extended:

a. Grant convalescent leave in accordance with current instruction to return to the hospital where leave is granted, at own expense, not subject to reimbursement.

b. Issue orders directing travel and transfer at Government expense to a naval hospital nearer their homes. Upon reporting at hospital nearer to their homes, the medical officer in command is authorized to grant convalescent leave under the same conditions as prescribed in subparagraph (a) above.

5. Patients requiring further hospitalization, who are not ready at the time for convalescent leave, may be transferred at Government expense to a naval hospital nearer their homes, individually or in drafts, as determined by the medical officer in command. Attendants to accompany patients on transfer are authorized when considered necessary.

6. Transfers herein authorized will be effected only upon request of the medical officer in command of the naval hospital where the officer or man is a patient, and subject to prior approval of the Bureau of Medicine and Surgery (by dispatch, if necessary); available bed capacity at the hospital to which transfer is contemplated; and available facilities for treatment of the type of disease or injury for which hospitalized.

7. In the cases of officers, a copy of orders will be forwarded to the Bureau of Naval Personnel. Copy of page 9 of service record will be forwarded to BuPers in the cases of enlisted men.

8. The Bureau of Medicine and Surgery is requested to issue the necessary instructions to medical officers in command of naval and convalescent hospitals as to the medical procedure to be followed in all such cases.

9. Paragraph 3 of reference (c) which authorized the granting of, not to exceed sixty days' convalescent leave for enlisted patients, is modified to provide convalescent leave not to exceed thirty days for enlisted patients, to conform to the maximum convalescent leave period prescribed in reference (b) for officers. --BuPers. L. E. Denfeld.

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