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NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar. (MC). U.S.N.

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Circular Letters:

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Further Observations on the Antianemic Properties of 5-Methyl Uracil: Thymine (5-methyl uracil) is a normal constituent of the body cell. (Because the word "thymine" is easily confused with "thiamine," vitamin B-1, the less mistakable and more descriptive designation for thymine, namely, 5-methyl uracil, is preferred.) Since 1940 Spies and his associates have been interested in the relationship of 5-methyl uracil in nutrition and the formation of blood cells. These workers observed that when it is given in greater amounts than 1 gram per day to patients with pernicious anemia in relapse a significant hematopoietic tissue response was observed.

In this study reported by Frommeyer, who works with Spies and others in the University of Cincinnati Studies in Nutrition at the Hillman Hospital, Birmingham, Alabama, synthetic 5-methyl uracil was used as the sole agent in the treatment of 6 patients with Addisonian pernicious anemia in relapse. The patients were hospitalized and given a diet devoid of meat, meat products, fish, poultry, and raw vegetables. After initial baseline studies, synthetic 5-methyl uracil was administered in varying doses by mouth to each patient. From the results obtained, it was concluded that synthetic 5-methyl uracil is a potent antianemic substance when given orally in daily doses of 4.5 Gm. or more to patients with pernicious anemia in relapse.

Not until the fall of 1945, when synthetic folic acid was shown to have antianemic effects in patients with macrocytic hyperchromic anemia, were investigators able to use pure synthetic compounds in their studies. The studies on folic acid have been extended, and the efficacy of this substance in the treatment of pernicious anemia, nutritional macrocytic anemia, and the anemia of sprue has been established. The observation that 5-methyl uracil will produce a hematologic remission in patients with pernicious anemia in relapse necessitates further studies of the functional relationship between folic acid and 5-methyl uracil. The authors state that folic acid may act as an enzyme or as a coenzyme in the synthesis of 5-methyl uracil or of substances which act similarly. These workers point out that studies are indicated likewise as to the efficacy of synthetic 5-methyl uracil in the treatment of nutritional macrocytic anemia and the anemia of sprue and conclude that this compound will probably prove as effective in the treatment of these two types of macrocytic hyperchromic anemia as in the treatment of pernicious anemia in relapse. (J. Lab. and Clin. Med., June '46 - Frommeyer et al.)

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The Effect of Salicylates on Acute Rheumatic Fever: The most important consideration in the management of acute rheumatic fever is the prevention of

organic heart disease. To prevent heart disease, it is essential that the rheumatic inflammatory reaction be suppressed in the minimum of time and that polycyclic attacks of rheumatic fever be averted. If attacks of rheumatic fever were always monocyclic and short lived, severe cardiac damage would rarely occur. For many years salicylates have been used in rheumatic fever in an attempt to attain these objectives. There is general agreement on the rapid antipyretic action of salicylate and on the efficient alleviation of pain and swelling of the joints with salicylate therapy. Whether salicylates prevent polycyclic attacks or reduce the incidence of permanent cardiac damage has been disputed for years.

The authors observed 186 cases of rheumatic fever in young adults between November 1942 and September 1945. These patients were treated under three different therapeutic regimens. Some were treated with small doses of salicylates given only to relieve symptoms. Others were given large doses by mouth until all evidence of rheumatic activity had subsided. A third group received sodium salicylate intravenously for one week and then oral doses. The authors report their experience with these three methods of treatment, considering the effects (1) on the length of the period of rheumatic activity, (2) on polycyclic attacks, (3) on pericarditis, and (4) on the occurrence of permanent cardiac damage.

In the matter of giving large doses of salicylate, there is no danger if the signs of toxicity are known and carefully appraised. Tinnitus and diminished hearing are practically universal with 10 Gm. of sodium salicylate daily and are of no practical significance as far as toxic reactions are concerned. Severe toxic reactions are marked by hyperpnea, tetany with carpopedal spasm, and progression to maniacal delirium and loss of consciousness. These reactions present a serious situation in the advanced state. Pustular acne is not uncommon with the toxic reaction and is frequently troublesome. It promptly subsides on stopping the drug. The serious toxic reactions in the experience of the authors are always preceded by hyperpnea. In this stage, reduction of the amount of salicylate administered or the use of sodium bicarbonate soon relieves the symptoms by reducing the plasma level of the drug. If the drug is continued in the same dosage without sodium bicarbonate, hyperpnea increases and delirium appears. In this stage the use of intravenous saline is necessary to return the body chemistry to normal and relieve the symptoms. The authors state that the chemical changes consist of a respiratory alkalosis with resultant water retention and diminished renal function. It is essential that the premonitory symptoms of severe toxic reactions be well known by those using these large doses of salicylates. In the authors' series from 20 to 25 grains of sodium salicylate every four hours (six times daily) were usually sufficient to maintain plasma levels of from 35 to 50 mg. per 100 cubic centimeters. No sodium bicarbonate was given and toxic reactions were rarely experienced.

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From the results of this study, it was concluded that:

The use of sodium salicylate in amounts of from 10 to 16 Gm. per day will reduce the temperature more quickly than will small doses. Likewise, large doses appear to offer an advantage in the treatment of acute rheumatic pericarditis.

The use of sodium salicylate in doses of from 10 to 16 Gm. per day will not prevent the development of cardiac damage or the progression of pre-existing heart disease. Large doses of salicylate will not serve to shorten the period of rheumatic activity any more than small amounts, nor will they prevent the development of polycyclic attacks of rheumatic fever.

The routine use of sodium salicylate by intravenous infusion to obtain a rapid elevation of the plasma salicylate level, to maintain a high plasma level, or to affect the fever or sedimentation rate is not warranted by the evidence presented.

If large amounts of salicylate are given, either orally or intravenously, the signs of toxicity must be recognized early and the dose must be reduced to prevent progression of the symptoms.

It appears that the use of large amounts of salicylate may offer some advantage in the first weeks of therapy and may bring about a rapid reduction of the fever and alleviation of the symptoms, but the continued administration of large amounts of this drug until the sedimentation rate is normal is of questionable value. (Am. Heart J., Sept. '46 - Warren et al.)

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Criteria for Determining the Stages of Pentothal Anesthesia: For the purpose of establishing criteria for judging the depth of anesthesia when using sodium pentothal, Himwich and Etsten carried out studies on the intravenous administration of this drug to persons who had not had pre-anesthetic medication and who were not scheduled for operation.

These workers summarize the report of their studies and present their conclusions as follows:

Stage 1	Clouded consciousness.
Stage 2	Loss of environmental contact followed by hypersensitivity to painful stimuli.

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Stage 3

Plane a Diminished muscular response to painful stimuli.

Plane b Loss of muscular response to painful stimuli.

Plane c Loss of respiratory and pupillary reactions to pain.

Stage 4 Fall in pulse pressure.

The clinical signs found in the various stages proved to be the results of a descending cerebral depression and therein lies their usefulness as practical criteria. The physiological mechanisms for the clinical changes are two-fold: (1) The march of the symptoms is based upon a metabolic inhibition of the brain starting with the cerebral hemispheres and gradually extending toward the medulla oblongata. (2) The depression of motor phenomena and of respiration is out of proportion to the cerebral metabolic inhibition and is ascribed, in part, to a specific effect on nerve function.

(J. Nerve. and Ment. Dis., Oct. '46)

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An Evaluation of Three Plague Vaccines Against Infection in Guinea Pigs Induced by Natural and Artificial Methods: Bubonic plague is a disease of rodents and its pathogenesis in these animals and in man is so similar when it is acquired by the bites of infected fleas that an attempt to appraise the protective value of vaccines against the infection acquired by guinea pigs through natural as well as through artificial methods should contribute evidence of their probable value in protecting man.

The guinea pig was selected as the test animal because it is very susceptible to infection with plague, and usually dies when infected. Furthermore, fleas which are vectors will feed on it with avidity, and the animal lends itself to easy manipulation under the precautions which are desirable. The rat flea (Xenopsylla cheopis) was used as the experimental vector because of its broad geographical distribution and the general acceptance of its capacity as a natural vector.

The vaccine preparations tested were made of Pasteurella pestis cultures which were killed by treatment with phenol or formalin. The phenolized

suspensions were precipitated with ethyl alcohol or with both alcohol and alum. The choice of these preparations resulted from a number of experiments with both white mice and guinea pigs as test animals. Results obtained in these previous experiences indicated that vaccines prepared from cultures of P. pestis which were incubated at temperatures lower than 37° C. did not afford as good protection as those in which the organism was grown at 37° C. or higher. A temperature of 39° C. was chosen for incubation because of the development of the larger envelope about the organisms grown on blood agar at this temperature, and because of their close resemblance morphologically to the organisms grown in animals at from 39° C. to 40° C. The interval of 21 or more days between the first dose of the vaccine and the infecting dose seemed necessary to obtain protection, and the divided dose of vaccine appeared to produce slightly better results. Alcohol precipitation was selected because of favorable reports on its use in the preparation of typhoid and tularemia antigens.

The two series of tests indicate that plague vaccines prepared by either of the methods adopted will afford much protection to guinea pigs against plague which is acquired through natural or artificial methods, and that the protection induced is specific. Each series shows that a better protection is afforded by a phenolized and alcohol-precipitated suspension of a strain of P. pestis from the North American ground squirrel than by a formalinized suspension of an East Indian strain (commercial). There is no evidence in these tests that the additional precipitate obtained by alcohol and alum increased the protective value of the vaccine.

Impressions gained in the conduct of these and other experiences suggest that an interval of 25 or more days between the final protective injection and the infecting dose may result in an even greater degree of protection. Also, it appears that doses containing a relatively large number of the bacteria are necessary, and that the degree of protection bears some relation to the size of the dose, although it is not proportionate.

The protection developed in guinea pigs against natural infections of plague by the use of specific vaccines suggests that similar preparations may be efficacious in man. (Pub. Health Reps., Oct. 18, '46 - Wayson et al.)

Note: This study was carried out under the direction of the Headquarters, Plague Laboratory, Plague Suppressive Measures, San Francisco, California, and this report was originally scheduled for publication in June 1943, but because of the subject matter was withheld.

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Quinacrine Toxicity on the Central Nervous System and the Use of the Kohs Colored Block Test: The Kohs Colored Block Test is a simple method of detecting and measuring the toxic effects of drugs on cerebration. The procedure consists of comparisons of the functioning of the intellect of subjects while taking a drug and when free of it.

The technic was applied to the study of the toxicity of quinacrine (atabrine) because the most significant toxic effect of this drug, as seen in the treatment of many thousands of patients for malaria, was the occurrence of toxic psychoses. A preliminary experiment was carried out to determine the dosage of quinacrine which is toxic to the central nervous system. Groups of persons received different dosages of quinacrine hydrochloride which resulted in correspondingly different average serum drug levels.

The results indicate that quinacrine given in a conventional dosage of approximately 2.1 Gm. in seven days causes no toxic effect, but when 4.5 Gm. is given in six days, a number of subjects show impairment of mental functioning. Correlation of the results of the mental testing with serum quinacrine levels indicates that serum levels above 18 micrograms (0.018 mg.) per hundred cubic centimeters tend to be toxic, whereas subjects with lower serum levels showed no deviation in intellectual functioning from that of normal controls who had received no quinacrine. The toxic levels are rarely found in patients treated conservatively. The experimental results are in accord with the clinical observations that toxic psychoses rarely occur except when massive quinacrine dosage is employed and that, although some patients receiving massive doses complain of feeling confused or intoxicated, patients under conservative treatment rarely present such complaints.

The results of the study of quinacrine toxicity suggest that the method evolved offers a new means of studying the effect of drugs on mental activity and of defining the optimal dosage when the effect on cerebration is important. (Arch. Neurol. and Psychiat., Sept. '46 - Lidz and Kahn)

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Surface Measurements of Radioactive Phosphorus in Breast Tumors as a Possible Diagnostic Method: It has been shown repeatedly that most experimental tumors take up relatively greater amounts of radiophosphorus (P^{32}) than normal tissues. In 1942 Marinelli and associate showed that after tracer doses of P^{32} in three cases of cancer in humans the beta ray activity was greater over cutaneous lesions than over normal skin.

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In June 1945 preliminary investigations were started in the Division of Radiology in cooperation with the Division of Surgery, of the University of California Medical School, to study the differential uptake by breast tumors of tracer doses of P^{32}. The radioactivity on the surface of the skin over various types of breast tumors, over axillary nodes, and over supraclavicular nodes was measured with a Geiger-Mueller counter a day or two before surgical removal. These measurements revealed that the activity over tumors which later were found to be malignant was 25 per cent or more above that of comparable normal areas. Skin measurements over breast tumors which later were proved to be benign consistently showed less than 25 per cent difference between involved and uninvolved tissue. In March 1946 further studies were undertaken by comparing the activity measured on the skin surface over palpable breast tumors, adjacent areas of the same breast, comparative areas of the other breast, and the lymphatic drainage areas. In all but one of 25 patients the diagnosis based on preoperative surface measurements was confirmed by microscopical examination of the tissues after surgery.

These findings are so suggestive that this brief report is submitted with the hope that other investigators will try the method. A more detailed but still preliminary report on this subject will appear in the November 1946 issue of Radiology. (Ltrs. to the Editor, Science, Oct. 25, '46 - Low-Beer)

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A Mild Exanthematous Disease Seen in the Schouten Islands: During 1944 and 1945 a group of cases characterized by (1) a minimal degree of constitutional symptoms, (2) low grade fever, (3) an extensive maculo-papular rash with peculiar localizations on the ear, elbows and knees, (4) swelling, tenderness and stiffness of various joints, commonly the knees, (5) general lymph node enlargement, and (6) leucopenia, was seen at the Schouten Islands in Geelvink Bay on the northern coast of Dutch New Guinea. Doctors at 3 hospitals independently recognized the condition as distinct and unusual and gave it various names. This report is based on 48 cases seen at two hospitals. At one hospital on Biak Island 31 cases from several different organizations were seen. From 2 to 9 patients per month were admitted during December 1944, April, May, June, and July 1945. At another hospital on Owi Island, 17 cases were seen during March and April 1945. The first of the group of 17 cases was a patient who had been transferred from a hospital on Biak Island (where he had had infectious hepatitis) 2 weeks before he became ill with this disease. His first symptoms began on March 18. Between 20 March and 1 April, 8 members of the hospital staff were admitted with the disease which developed simultaneously in 4 members of a small signal organization adjacent to the hospital. Many of this group had had no intimate contact with patients. During the first half of April, 4 negro members of an engineering organization located further from the hospital than the signal company were afflicted. Because of

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the mild nature of this illness, these 48 known cases probably represent a small percentage of the cases that occurred.

Because of the similarity between these cases and those reported by Halliday and Horan, Megaw's comments to the effect that Halliday's and Horan's cases represented a variety of dengue apply equally well to the disease the authors have described here. It is repeatedly emphasized that dengue is a protean disease, varying in some features from epidemic to epidemic or even among the cases of a single outbreak.

It is pointed out, however, that this disease differed from dengue in these ways. The onset was usually gradual, was rarely initiated by a chill, and the fever was mild. The saddle back type of temperature chart was never seen. The headache, backache, and muscle pains were insignificant and never as severe as in the average case of dengue. Stiffness and swelling of the joints were more marked than in dengue. The initial rash or blush of dengue was not seen, nor did the rash observed resemble the secondary rash of dengue. It was more papular, showed characteristic lesions on the ears, nose, elbows and knees, and began earlier and lasted two or three times as long as a dengue eruption. Lymph node enlargement was more conspicuous than in dengue. (Only 10 typical cases of dengue were observed during the time these cases were being seen.)

No claim is made that the clinical evidence in these cases is sufficient to establish this disease as a new entity rather than a variant of some well known disease. Nevertheless, it was felt that this series warranted a report for the purpose of stimulating its recognition so that further investigation may reveal its true nature. (Am. J. Trop. Med., July '46 - Weber et al.)

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Concussion Deafness: A unique opportunity to study the effect of gun firing on hearing has been offered by the prolonged exposure of instructors while teaching gunnery students. One hundred white male gunnery instructors averaging 25 years of age, assigned to both shotgun and 50 caliber machine gun ranges, were studied with the aid of an audiometer and by means of the whispered and spoken voice. Each instructor was found to have normal hearing on examination prior to assignment to the range, and the history in each revealed no previous signs or symptoms referable to the ears. Each was examined with an otoscope, both before assignment to the range and during the course of this study, and no evidences of present or past otitis externa or media were found. All had intact tympanic membranes; however, occasional calcareous plaques or scars from old healed perforations were seen Usually,

with the latter, the subject could not recall the time any previous damage had occurred. Not a single instructor gave a history of tinnitus of even the most transitory nature prior to assignment to the range.

Firing on the ranges is almost continuous for seven and one-half hours per day five and one-half days a week. Absorbent cotton had been used universally as an ear plug, and during this survey was the only protective device employed. The minimum length of service as instructor was six weeks, the maximum thirty months, and the average ten months.

The noise level on ranges where forty or more .50 caliber machine guns are firing is high and subjectively produces acute distress when first encountered. Men involuntarily duck, clasp their hands over their ears and have an almost uncontrollable impulse to run away when they first go on the range. It is almost as if they were struck a physical blow by a mass of sound. This first sensation of physical onslaught passes in a few minutes, and they soon become adjusted to the noise. On cessation of firing after a single exposure of a few hours, they have a "numb" feeling in the ears, and can almost hear the stillness, although their auditory acuity is not diminished. After a single exposure, however, sometimes they have tinnitus which is invariably of short duration. The authors have failed to find tinnitus persisting even twenty-four hours following a single exposure.

After repeated exposure, on the other hand, tinnitus may become a persistent and annoying symptom. Of this group of 100 previously normal white men, persistent and unrelenting tinnitus was noted in 30, and intermittent tinnitus, severe enough to require medical attention and cessation of duty on the range, was present in an additional 20. The persistent tinnitus was aggravated by exposure to firing and was maximal at the end of the day. Tinnitus tends to diminish in those men who are reassigned, but in some of the men reported upon in this article it has persisted throughout the period of follow-up (six months).

Conclusions: The noise of gunfire produces a definite loss of hearing, beginning in the high tones (2,048 to 11,584 cycles per second), among gunnery instructors. When the noise is severe, all tones are affected. There was wide variation in individual susceptibility in this group.

The average loss of hearing for both ears in the gunnery instructors in this group was 20 decibels although the length of exposure necessary to produce damage varied widely among them. After from ten to twelve months of service on the range, further deterioration in the subjects' hearing occurred slowly if at all.

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Tinnitus of varying degree was a complaint in 50 per cent of the subjects examined and was the most annoying symptom noted.

Since deafness occurs insidiously and since damage to the conversational range is late, few persons appreciate their handicap and fail to request medical attention until it is far advanced. Routine prearranged surveys are necessary.

There has been no significant improvement in hearing six months after cessation of the subjects' exposure to the noise of gunfire, and it is believed that the loss will be permanent.

Cotton plugs in the external auditory canal have not been effective in preventing loss of hearing due to the noise of gunfire. However, the efficacy of various protective devices is being investigated and will form the basis of a subsequent report. (Arch. Otolaryng., Sept. '46 - Stewart and Barrow)

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Pathologic Findings in Cases in Which Influenza Virus was Isolated from the Lungs: Reports in the literature of the isolation of influenza virus from the lungs of persons who died are remarkably few, and still fewer are the descriptions of the pathologic changes in the lungs in such cases. The authors have been able to find only three such reports. The first case was described by Scadding in 1937, the second by Stokes and Wolman in 1940, and the third by Himmelweit in 1943. The strain of influenza virus was not mentioned in the report on Scadding's case. In Stokes and Wolman's case, it was influenza A (PR 8 strain). In Himmelweit's case, an influenza virus closely related to, but not identical with, influenza B (Lee strain) was isolated. All three cases were complicated by Staphylococcus aureus infection.

The pathologic change in Scadding's case consisted of a necrotizing process involving the trachea, bronchi, bronchioles, and alveoli. The alveoli were filled with red blood cells, resembling an infarct. In limited areas there were small abscesses, from 2 to 3 mm. in diameter.

In Stokes and Wolman's case there was marked congestion of the alveolar capillaries. The alveoli were filled with edema fluid, red blood cells, and a few polymorphonuclear leukocytes. The septa were edematous and the lymphatics were filled with a serofibrinous exudate. Many lobules contained colonies of staphylococci with little or no leukocytic reaction about them. The bronchioles had lost their epithelium and their lumina contained mucus and leukocytic debris. The epithelium of the trachea and large bronchi had

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desquamated and had been replaced by a thick exudate of organizing fibrin and purulent material. The submucosa was thick, edematous, and congested, and was infiltrated with phagocytes, chiefly of the mononuclear variety.

In Himmelweit's case the lungs showed bronchopneumonia, necrosis near the bronchioles, much hemorrhage, and many staphylococci. The epithelium of the trachea had been shed and there was a little fibrin on its surface with masses of cocci but only a few leukocytes. The bronchial epithelium had likewise desquamated.

In a fourth case reported by Wollenman and Finland from the 1940-41 epidemic, the influenza virus was not isolated but evidence was given for its presence in the lungs. A ferret inoculated intramuscularly with a suspension of the lungs of that patient developed no signs of infection, but proved refractory to subsequent inoculation with influenza A (PR 8); and the ferret's serum taken prior to the second inoculation protected mice against infection with this strain of virus. This case, too, was complicated by infection with Staphylococcus aureus; the pathologic changes in the patient were very similar to those described by Stokes and Wolman.

In addition to these four reports, Andrewes, Smith, and Stuart-Harris recorded the isolation of influenza virus from the lungs in three cases of fulminating pneumonia which occurred during the 1936-37 epidemic in England and from which pure cultures of Staphylococcus aureus were obtained. One of these three cases is the same one that was reported by Scadding, but the morbid anatomy of the patients' lungs in the other two cases was not described.

In five cases the authors have had an opportunity to study the lungs from which an influenza virus was isolated. Two of the cases were unusual in that no significant pathogenic bacteria could be demonstrated, and of the other three, one was complicated by infection with Staphylococcus aureus, one by Staphylococcus aureus and Streptococcus hemolyticus, and one by Diplococcus pneumoniae, type I.

Correlation of Pathologic Changes and Virus Studies: In each case, material from only one lobe was utilized for the isolation of the virus. In case I, unfortunately no note was made as to which lobes the microscopic sections represented. In case 2, the virus was isolated from the right upper lobe, and histologically the only lesions present were focal lesions involving a few alveoli and consisting of an exudate of polymorphonuclear leukocytes, fibrin, and some large mononuclear cells. In case 3, no record was kept as to which lobe was studied for the presence of a virus. In case 4, likewise, no such record was kept, but the process was uniform throughout all lobes and

it would seem justifiable to assume that the changes described, namely, edema, alveolar hemorrhages, fibrin, and hyaline membrane formation, represent the reaction to the virus. It should be noted that the bronchiolar epithelium was intact in this case as it was in case 2. In case 5, virus was isolated from the right upper lobe and sections from this lobe showed edema of the alveoli with an exudate of a moderate number of large mononuclear cells. As in cases 2 and 4, the bronchiolar epithelium was unaffected.

The fact that a virus was found in a single lobe in each instance is, of course, no indication that it was not present in some, if not all, of the other lobes. However, because of practical difficulties it was impossible to utilize more than one lobe of a lung in each case for virus studies.

It appears of no value to discuss the pathologic changes which have been described in previous pandemics and epidemics of influenza, for nothing is known of the etiologic agent. With a very rare exception, all such cases were complicated by secondary bacterial infections, and the pathologic lesions described were caused for the most part, if not entirely, by such secondary invaders. Goodpasture described two cases which were bacteria free. His first patient died 7 days after the initial symptoms and 2 days after signs of consolidation appeared in the lungs. Microscopic examination of the lungs showed injury and destruction of the alveolar walls with hemorrhage, edema, a little fibrin, and scant cellular exudate. The alveolar ducts were dilated, and some of them showed a hyaline membrane on their walls. His second case was of a subacute type with a terminal exacerbation. Microscopically, the patients' lungs showed alveolar hemorrhages, innumerable foci of polymorphonuclear leukocytes, fibrin, large mononuclear cells, disintegrating hyaline material, and small areas of necrosis of the alveolar walls. In some areas there was a thick layer of hyaline material on the walls of dilated ducts and alveoli. The epithelial lining of the large and small bronchi was intact. In certain respects these two cases resemble histologically case 4 of these authors which was likewise bacteria free.

In this series, two cases were bacteria free and three were complicated by secondary bacterial infections.

Much emphasis has been placed in the past on necrotizing bronchiolitis as a feature of influenza. Such a process also has been found in experimental infections with influenza virus in mice and ferrets. However, in the two cases which were not complicated by bacteria the epithelium of the bronchioles was unaffected. This was also true of Goodpasture's case in which he described the bronchioles. Furthermore, in the cases complicated by secondary bacterial invaders, the patients' bronchioles in the portions of the lung which were not involved by the bacterial infection but which contained the virus were unaffected.

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From the authors' series of cases it would seem difficult to recognize changes produced by the virus in the presence of bacterial infections. It is possible that more definite lesions due to the virus had not been produced because of the short duration of the disease in these cases - from 2 to 3 days. It will be noted from the descriptions of the histologic changes in these cases that the lesions in four of the five cases were minimal. However, it is entirely possible that if it had been practicable to make multiple sections of each lobe, more severe lesions might have been found. A similar situation was true with the virus studies. In each case, tissue from only one lobe was tested for the presence of virus. Another explanation of the lack of severity of the lesions is the short course of the disease in the three cases complicated by secondary bacterial invaders. Death in these cases may well have been due primarily to the bacterial infections. In case 2, in which the pulmonary lesions were minimal, the duration of the disease was probably 7 days and death was due to acute myocarditis. The lesions in this case may represent a minimal infection with virus or possibly a late stage. The fourth patient (case 4) lived 9 days and died of pulmonary involvement due to virus alone. It was concluded that the histologic changes represent the typical picture of a pure influenza virus pneumonia.

It is seen that in the three cases in which there was infection with bacteria there was a marked leulopenia. In these cases the bone marrows showed maturation arrest of the granulocytic series. In the two cases in which there were no bacteria, leukocytosis was present and the bone marrows were normal. The leukopenia may be attributed to the short course of the disease or to a depressant action of the bacteria. However, it appears that the uncomplicated influenza virus infections were accompanied by leukocytosis rather than leukopenia.

From the considerations discussed, it would appear that the viruses isolated did not originate as laboratory contaminants. (Am. J. Pathol., July '46 - Parker et al.)

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Effect of Synthetic Folic Acid on the Gastrointestinal Tract of Patients with Tropical Sprue: Synthetic folic acid in daily oral doses of 10 mg. has a profound effect on the alimentary tract function of patients with tropical sprue. Repeated roentgen studies were made on three patients with tropical sprue. One patient was used as a positive control. The two patients who received folic acid showed striking improvement which was evidenced by return of intestinal motility toward normal and the establishment of a continuous column of barium which was not interrupted by segmentation or fragmentation. The control patient, who did not receive folic acid, showed no improvement within a similar period of time.

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The roentgenographic findings most often observed in this series of patients with tropical sprue were mucosal edema, intestinal segmentation with alternating intestinal spasm and dilatation, and intestinal hypomotility. Although these abnormal roentgen-ray patterns could be the result of nutritional disorder, hypoproteinemia, disease of the liver, disease of the mesentery, or any disease condition which may produce submucosal edema, in these patients the response to synthetic folic acid was dramatic. (Am. J. Roentgenol., Sept. '46 - Hernandez Beguerie and Spies)

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Narco-Analysis in Mental Disorders: The progressive increase of both civilian and war neuroses has placed the psychiatrist in urgent need of an abbreviated form of therapy applicable to patients who are unable to undergo an extensive and expensive psychoanalysis. Of the existing types of accelerated therapies, narco-analysis proves to be the most efficient. With a workable knowledge of the psychodynamics of the neurotic character structure, and some training in the intravenous administration of the barbiturates, a physician may readily apply himself to such a method.

In its role as a therapeutic weapon, narco-analysis (1) shortens and renders beneficial the transference relationship; (2) facilitates the lifting of repression, without having to place undue stress on the individual's weakened emotions, by gradually strengthening the ego to a state where it may tolerate and master the accompanying anxiety usually associated with the recall of traumatic experiences; (3) enables the patient to accept and assimilate interpretations relative to the underlying basic conflicts, which might have proved to be of an unbearable nature in the wakened state; and (4) it aids in the process of synthesis both in the narcotic and wakened states in which the individual is made to be assertive, responsible, confident, independent, and to arrive at some level of normal interpersonal relationships.

In the more severe mental disorders, such as those of the psychotic level, the curative value of narco-analysis is of a limited and controversial nature. Individuals of this sort are usually not suitable subjects for any type of intensive and penetrating therapy. The most that can be attempted in such cases, without further damaging the existing vulnerable and weakened ego, would be the application of the narco-suggestive method. With such an approach, symptoms of an outwardly disturbing and destructive nature may be alleviated, and with a well-directed guidance the individual may be led to establish some adjustable form of interpersonal relationship.

In the last few years, studies made by various authors have demonstrated the prognostic and diagnostic value of the use of barbiturates in mental patients.

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Harris, Horowitz and Milch have shown that the type of response to intravenous administration of sodium amytal was of prognostic value when insulin shock therapy was used. Later, Gottlieb and Hope and, more recently, the writer, at Central Islip State Hospital, have confirmed this fact to be of importance not only in the group of shock-treated patients, but also in those patients treated on a conservative or psychotherapeutic basis. (J. Nerv. and Ment. Dis., Oct. '46 - Barbara)

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The Use of Tetraethylammonium in Peripheral Vascular Disease and Causalgic States - A New Method for Producing Blockade of the Autonomic Ganglia: Therapy in peripheral vascular disease cannot properly be applied without an evaluation of the presence and degree of vasospasm in the involved and collateral vessels. In the majority of cases both a functional element of vasoconstriction and an organic component of vascular obliteration are present. Since the functional component is mostly an expression of the activity of the sympathetic nervous system, it may be altered; on the other hand, the organic component is little if ever modified by therapeutic measures.

The role of vasoconstriction has been evaluated in the past by means of local nerve block, paravertebral sympathetic block, and spinal anesthesia. Recently, a new method of producing a blockade of autonomic ganglia by means of parenteral injection of the tetraethylammonium ion has been introduced.

Acheson and Moe studied the action of tetraethylammonium on the superior cervical and stellate ganglia, on sympathetic vasoconstrictor mechanisms, and on efferent vagal pathways. They concluded that the response of the nictitating membrane, the blood pressure, and the heart rate could all be explained by a blockade of autonomic ganglia, both sympathetic and parasympathetic. The validity of this interpretation was further confirmed by Acheson and Pereira.

Lyons and co-workers demonstrated that the drug could be administered safely to man in doses sufficient to produce an autonomic blockade and described its action on the human subject.

Technic of Administration: In this study tetraethylammonium bromide was administered as a 10 per cent solution (100 mg. per cubic centimeter) in practically all cases. The drug was given either intravenously or intramuscularly. The intravenous dose ranged from a minimum of 100 mg. (1.0 c.c.) to a maximum of 500 mg. (5.0 c.c.). The drug was administered intramuscularly

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on the basis of 20 mg. per kilogram, the maximal dose usually ranging from 1.0 to 1.2 Gm. (10 to 12 c.c.), one-half of the total volume given being injected into each buttock. This procedure was carried out with the patient recumbent, extremities uncovered, in a room temperature of from 70° to 75° F. Variation in room temperature during the test was negligible. Where possible, a basal state was employed. A blood pressure cuff was applied to the arm and one or more determinations of blood pressure and pulse determinations were made. Utilizing the same arm and the cuff for a tourniquet, tetraethylammonium bromide 10 per cent was slowly injected, the rate and volume of injection being governed by changes in pulse volume and the general systemic reaction of the patient. An acceleration of pulse rate was usually noted, but only significant changes in pulse volume were taken as a guide to cease or delay further injection of the drug. Under no circumstance were more than 5 c.c. intravenously administered.

The intramuscular route was employed only in cases under observation in the hospital. The effects of the intramuscular injection of tetraethylammonium bromide usually lasted from six to eight hours.

The intravenous injection produces a metallic taste in the mouth in from 15 to 20 seconds on most occasions. Thereafter, the patient notices a "cool sensation" in the hands and feet which is followed within five minutes by a perceptible increase in skin temperature. There is an incomplete dilation of the pupil with some loss of accommodation. Shortly after the injection (approximately one minute), systolic and diastolic blood pressures tend to fall, particularly in the hypertensive patient. This fall in blood pressure is accompanied by an increase in pulse rate to between 90 and 120 beats per minute. Sweating, if present, ceases and the patient may become aware of a dry mouth. The vasoconstrictor gradient present in the extremities is largely abolished so that toe and thigh temperatures are equalized. The blood pressure gradually increases to the initial level although postural hypotension may exist for from 15 to 60 minutes.

Value of Tetraethylammonium in Producing Sympathetic Block as Demonstrated by Comparative Tests: The comparative effects on peripheral blood flow of lumbar sympathetic block, spinal anesthesia, local nerve block, and sympathectomy versus tetraethylammonium, as measured by skin temperature and clinical response, were determined both in patients with vascular disease and in a control group of relatively healthy individuals. Fifty-five comparative tests were performed. Measurements of skin temperature response were made under identical conditions in practically all cases.

The response to tetraethylammonium bromide was equal to or surpassed the response produced under identical conditions by paravertebral sympathetic

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block or local nerve block. In one instance in ten, it proved inferior to spinal anesthesia, and in two instances in twenty-five, it proved inferior to sympathectomy in producing a maximal temperature response. In fifty-two of fifty-five comparative tests it proved equal or superior to the usually accepted methods of producing sympathetic block. The ease of administration regarding the technical procedure is an additional highly desirable feature of tetraethylammonium, since spinal anesthesia is not always desirable or possible and paravertebral sympathetic block, even in expert hands, is not always successful.

Utilization of Tetraethylammonium Bromide as a Diagnostic and Therapeutic Measure: Approximately 500 patients have received tetraethylammonium bromide or chloride on one or more occasions either as a diagnostic or therapeutic measure, or both. For the most part these patients fall into two general groups, (1) patients with hypertension, and (2) patients with peripheral vascular disease and allied disorders.

Results of Blocking the Autonomic Ganglia with Tetraethylammonium Bromide: 1. Functional Vascular Disorders. Sixteen patients with functional angiospastic disorders were studied. Eight of these patients had Raynaud's phenomena alone or in association with other disorders; four patients had functional disorders such as acrocyanosis and livedo reticularis, and four patients had Raynaud's phenomena in association with scleroderma.

In this group, the functional response to tetraethylammonium was usually quite marked, a substantial rise in skin temperature and alleviation of at least a part of the clinical picture being the usual response.

There was a marked variation in the duration of the response to autonomic ganglia blockade in this group. For the most part, the drug served three useful purposes in these patients: (1) it obviated the necessity of single or multiple paravertebral blocks, particularly for the upper extremity; (2) it was helpful in establishing the presence of a functional vascular component, particularly in the patients with scleroderma; and (3) it was exceedingly helpful in aiding the establishment of a diagnosis.

2. Organic Obstructive Vascular Lesions. The authors studied the effects of tetraethylammonium bromide in eighteen patients with thrombo-angiitis obliterans (Buerger's disease). Eleven have been treated conservatively over periods varying from two weeks to six months; three patients have had sympathectomy performed, one patient had a supracondylar amputation for moist gangrene (patient untreated except for diagnostic test), and three patients received only a single injection for the purpose of producing

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a sympathetic block. These three latter patients will be carried on a conservative regimen. Of the eleven patients treated conservatively including repeated sympathetic blocks by tetraethylammonium, five are symptom free, including the practical absence of previously existing intermittent claudication. Exercise tolerance has improved in all of this group. In the remaining nine patients in the group being treated conservatively, there has been a similar satisfactory decrudescence of clinical signs and symptoms, but this group has had only a relatively brief period of treatment (four to eight weeks).

Fifty-five patients with clinical signs and symptoms of all stages of peripheral arteriosclerosis obliterans have been studied, utilizing tetraethylammonium bromide as a diagnostic, prognostic, and therapeutic measure. The drug has proved useful in two respects in these patients: (1) aiding in the control of nocturnal pain, and (2) as an index of the possible benefits that might be derived from a lumbar sympathectomy.

Early in the course of study of tetraethylammonium bromide, it was noted that in some of these patients who were complaining bitterly of nocturnal pain, relief was experienced following the intravenous or intramuscular injection of tetraethylammonium bromide. This relief occurred whether or not a functional component was demonstrable, that is, the relief occurred despite the absence or presence of vasospasm, and the nocturnal pain returned only if the injections of the drug were discontinued. Several of these patients claimed relief of pain superior to that obtained from morphine.

3. Causalgic Disorders and Reflex Sympathetic Dystrophies. Some seventeen patients with a diagnosis of causalgia, posttraumatic edema, or reflex sympathetic dystrophy have been studied utilizing tetraethylammonium bromide which served three useful purposes: (1) it usually afforded temporary and at times sustained relief of pain; (2) it aided in establishing the diagnosis of reflex dystrophy; (3) it was highly effective as a therapeutic measure in selected cases.

4. Thrombophlebitis. Nine patients with superficial or deep thrombophlebitis have been treated with tetraethylammonium. All nine of these exhibited vasospasm (hyperhidrosis, pain, mild cyanosis, coldness, demonstrable vasoconstriction) in association with the primary disorder. Six of the nine patients had either acute or chronic deep femoral thrombophlebitis. The three remaining patients had migratory phlebitis in association with thromboangiitis obliterans.

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Tetraethylammonium proved useful in two respects in this group of cases, (1) as a measure capable of releasing vasospasm by blocking the autonomic ganglia, and (2) as a therapeutic measure in the acute or active cases wherein daily blocks proved advantageous as a supplementary measure in therapy. The duration of effects was surprisingly variable, some patients reporting a period of several days in which the extremity remained warm and painless, while other patients experienced relief of symptoms for only a few hours.

Utilization as an Outpatient Procedure: The intravenous injection of tetraethylammonium bromide to produce autonomic blockade has been utilized daily as an outpatient procedure for the past eight months. Following treatment, the patient is maintained in a horizontal position for at least from 15 to 30 minutes. At the end of this time he is allowed to sit up and then stand up. If no dizziness or syncope occurs, or if postural hypotension is not marked, he is allowed to walk about the clinic for a few minutes and is instructed to lie down should he experience unpleasant symptoms. No emergency hospitalization following the administration of this drug has been necessitated at any time. The patient is asked to refrain from driving his car for one to two hours because of loss of accommodation. The patient is usually unaware of any visual impairment. Adrenalin is specific in counteracting any untoward symptoms.

Toxic Effects: No significant toxic effects were noted from the doses used in the patients studied. In other cases reported elsewhere, complications from the injection were experienced. Some patients with very high blood pressure experienced a state of peripheral circulatory collapse following the intravenous injection which was quite transient in character and which responded to epinephrine. Other patients had developed a state of dyspnea similar to that observed in hysterical hyperventilation. In a few patients the sensation of weakness, fatigue, and lightheadedness was very pronounced. They appeared to experience difficulty with muscular movement, although when tested they did not show any loss of strength or change in reflexes. The drug has been administered more than 1,000 times to more than 500 patients in the doses indicated with very few alarming reactions. (Surg., Oct. '46 - Berry et al.)

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(Not Restricted)

Abstracts of Reports on Research Projects:

X-647
(Bio. 35)
29 Jul '46

Free-Falls and Parachute Descents in the Standard Atmosphere.

With the advent of high altitude flying, hazards not previously encountered in the event of bail out become of extreme importance. Without oxygen, consciousness is lost very quickly. The extreme cold necessitates the wearing of heavy flying suits which not only encumber the jumper but increase his weight. The duration of the descent subjects the jumper to anoxia and cold. A few questions which naturally arise are:

1. Can a man safely descend from high altitudes, say 40,000 feet, without oxygen equipment?

2. How long will it take to free-fall to an altitude where the air is dense enough for survival without the use of oxygen equipment?

3. Are the times of free-fall from high altitudes to low altitudes short enough to prevent ill effects from anoxia and cold when no special gear is worn?

4. What is the duration of open parachute descents from high altitudes?

5. What are the rates of free-falls and parachute descents?

6. After free-falling fifteen or twenty thousand feet, is the velocity of fall so great as to cause tearing of the parachute or injury to the jumper when the parachute is opened?

7. How does the weight of the jumper, diameter of the parachute, added weight of high altitude suits and equipment, effect the rate of fall at various altitudes, the time between altitudes, and the terminal velocity at sea level?

In order to have a background for answering some of the foregoing questions, in this study, altitude, velocity and time relationships for free-falls and open parachute descents have

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X-647 (Cont.)

been obtained, and values tabulated for the situation where the weight of the jumper equals the drag in the standard atmosphere.

A detailed table of the standard equilibrium velocity and standard equilibrium time for bodies falling in the standard atmosphere is presented. This table gives the velocity at various altitudes, and the time of fall from sea level to -4,000 feet, and from 80,000 feet to sea level.

In addition to this standard table which is based on a value of unity for $(2W/C_DS)^{1/2}$, in the Appendix are given short tables and charts of an open parachute descent and free-falls; the terminal velocity at sea level; variation of $(2W/C_DS)^{1/2}$ for various weight jumpers from 90 to 300 pounds free-falling, and for jumpers from 90 to 300 pounds with parachute canopies from 20 to 30 feet in open parachute descent; and estimations of drag coefficients of silk and nylon parachutes.

The table of standard equilibrium velocities and standard equilibrium times may be used directly for open parachute descents, given the weight of the jumper, the diameter of the parachute, and the drag coefficient. For free-falls starting from horizontal flight, approximately 14 seconds must be added to the equilibrium time given in the table to obtain the total time to sea level.

It is suggested that the symbols V_e and Θ_e be adopted as standard for the standard equilibrium velocity and standard equilibrium time. (Biodynamics Branch, Research Div., BuMed - Webster)

X-630
Rep. No. 7
19 Jun '46

Characteristics of Forward Motion of Personnel in an F4U-1 Cockpit.

The forward motion of personnel in an F4U cockpit was photographed by a time-exposure technic to determine the distance available between them and the rigid structures which they face. These distances were determined for each of three ways of wearing the seat belt and shoulder harness and at eight levels of the seat.

(Not Restricted)

X-630 (Cont.)

Measurements from the photographs reveal that some portion of the head will approach within 11 cm. of the gun sight even when the shoulder straps are snugly secured and locked.

When the shoulder straps were secured but unlocked, the head cleared the gun sight only if the subjects sat at the lowest three or four levels of the F4U-1 seat.

When the shoulder straps were omitted and only the seat belt was used, the subjects struck the gun sight at all levels of the seat.

The protection which may be afforded by a safety harness which controls forward motion is limited by the seat to gun sight distance. This protection may be increased by redesign and relocation of the gun sight in the F4U-1 aircraft to increase the distance available during forward motion.

Should a crash of 20 "g" magnitude occur, an individual wearing a standard harness in an F4U-1 cockpit of standard design would almost certainly receive major head injuries. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. Hellems and Bierman)

(Restricted)

X-533
Rep. No. 5
21 Aug '46

An Evaluation of Activated Carbon as a Means of Odor Control in Meat and Garbage Lockers.

Tests were undertaken to determine the efficiency of activated carbon to control odors in meat and garbage lockers. Activated carbon as used in the Dorex unit (type SQ-14) is a highly effective substance for removing odoriferous substances from the air of these spaces. Its efficiency depends upon the distribution of carbon relative to air flow and the quantity of air passing over the carbon bed in relation to the total volume of the air space. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Consolazio and O'Neal)

(Not Restricted)

X-169
Rep. No. 4
19 Sep '46

Tests for Palatability of Precooked Frozen Meals

Two shipments of precooked, frozen meals were received with the request that they be tested to determine why air

(Not Restricted)

X-169 (Cont.)

passengers refused to eat them. It was stated that complaints had been made of odors of gasoline or oil emanating from the meals as served aloft.

One shipment of 8 meals was received from ComNatsThree, and another of 22 meals from Moffett Field. In the first shipment, the meals were reported as passable in palatability, although mild objections to 3 of the meals were reported by 3 persons. In contrast, however, objections to 21 of the 22 meals received from Moffett Field were registered by from 3 to 15 observers. The predominating report was the presence of an oily or gasoline-like flavor in one or all three components of the meals. It appears, therefore, that these meals were exposed at some time to fumes or vapors that permeated the foods and rendered them unpalatable. It has been stated that such fumes penetrate frozen foods more readily than they do unfrozen material. On the basis of information at hand, it is impossible to reach any conclusions concerning the stage at which the objectionable substances penetrated the frozen meals, nor is the exact composition of these substances known. It is suggested that further investigations be made. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Barnes)

Note: Those interested in seeing copies of the complete reports should address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the authors. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to those reports marked "Not Restricted" in the same way as to published articles noting authors, title, source, date, project number, and report number.

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(Not Restricted)

Progress Report on the Medical Officer Training Program as of October 15, 1947: There are approximately 202 approved residencies in Naval hospitals in the various specialties. To date 101 of these residencies have been filled, including all the surgical residencies and all but two of the obstetrical residencies. There are some vacancies in the various surgical specialties. Requests are desired for training in Anesthesiology, Dermatology, Internal Medicine, Orthopedic Surgery, Otolaryngology, Pathology, Physical Medicine, Psychiatry, Radiology, and Neurology. There is an acute shortage of medical officers trained in the following specialties: Dermatology, Pathology, and Otolaryngology. (Professional Div., BuMed)

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(Not Restricted)

Public Health Foreign Reports:

Disease	Place	Date	No. of Cases
Cholera	China,		
	Fukien Prov.	Aug. 11-20, '46	55 (3 fatal)
	Hopeh Prov.	Aug. 11-Sept. 10, '46	42 (8 fatal)
	Hunan Prov.	Aug. 11-20, '46	250 (148 fatal)
	Kwangtung Prov.	Aug. 1-20, '46	338 (97 fatal)
	Manchuria,		
	Jehol Prov.	Aug. 1-10, '46	91 (73 fatal)
Plague	Ecuador, Loja		
	Prov., Pindal	August '46	4 (2 fatal)
Typhus Fever	Ecuador	August '46	118 (25 fatal)

(Pub. Health Reps., Oct. 18, '46)

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(Not Restricted)

Establishment of U. S. Naval School of Aviation Medicine and Research, Naval Air Station, Pensacola, Florida:

To: All Ships and Stations 15 October 1946

1. The following activity is hereby established under an officer in charge, and designated:

U. S. Naval School of Aviation Medicine and Research
Naval Air Station
Pensacola, Florida 7179-750

This activity is assigned to the Naval Air Training Command as a subordinate unit of the Naval Air Basic Training Command.

2. Bureaus and offices concerned take necessary action.

SecNav. James Forrestal

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(Not Restricted)

Disestablishment of Naval Medical Activity: As published in the Navy Department Semimonthly Bulletin of 15 October 1946, the following Naval Medical Activity was disestablished as of the date shown:

Name	Location	Date of Disestablishment
U. S. Naval Dispensary	Federal Building Long Beach 2, Calif.	23 September 1946

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ALNAV 547 8 October 1946 (Not Restricted)

Subj: Injuries of Civilian Visitors.

Potential personal-injury claims occasioned during visits naval vessels, particularly Navy Day, necessitate attention Alnav 457-45, which was:

"Increasing number claims injury civilian visitors, with potential litigation, particularly Navy Day occurrences, have been reported to JAG. Situation requires that commanding officers, in event physical injury experienced by

(Not Restricted)

civilian on naval vessel, follow as far as possible procedure prescribed article 804, Navy Regulations, and section 726, Naval Courts and Boards, in order to obtain full statements all witnesses to injury. Particularly important to have made as complete physical examination as possible of injured party. Original records and reports should be forwarded to JAG, attention Chief Admiralty Officer."

--SecNav.

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Circular Letter 46-149 (See page 31.)

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Circular Letter 46 150 (See page 31.)

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Circular Letter 46-154 21 October 1946 (Not Restricted)

To: Comdts, NDs, and ComNavMed

Subj: Monthly Reports of Malaria Indoctrination, discontinuance of.

Ref: (a) BuMed ltr BUMED-B-PBC, P2-3/P3-1(012-41) Ser 0876 dtd 25 Apr 1944.
(b) BuMed CirLtr 46-74 dtd 2 May 1946 (Joint Letter 46-1044).

1. Reference (a), which requires monthly letter reports from Commandants on Malaria Indoctrination accomplished in the district, is hereby canceled.

2. Reference (b) requires malaria indoctrination within the continental limits of United States only for U. S. Marine Corps personnel during their initial training of the first enlistment, and in organized units alerted for transfer to a malarious area. Naval personnel will be indoctrinated immediately upon arrival in a malarious area. Malaria indoctrination will accordingly be limited to major Marine Corps Training activities and certain overseas Naval districts where malaria is a problem.

3. Districts and district activities having an excess of Malaria Indoctrination pamphlets NavMed 141, 142, and 143, and posters, are instructed to ship the excess to the nearest Naval Publications Distribution Center, either the East Coast Publications Distribution Center at Cheatham Annex, Williamsburg, Va.,

(Not Restricted)

or the West Coast Publications Distribution Center, at NSD Annex, 34th St., Oakland 4, Calif.

--BuMed. Ross T. McIntire

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Circular Letter 46-155 22 October 1946 (Not Restricted)

To: MedOfsCom, NavHosps (Cont), plus Aiea, T.H., Guantanamo Bay, Cuba, and Coco Solo, C. Z.

Subj: Reporting of Status of Allotments.

Encl: 1. (HW) Suggested form of report.

This letter from the Chief of BuMed directs that on and after 31 October 1946 the addressees forward to the Bureau before the 10th of each month a carbon copy of the report made by the hospital Finance Officer to the addressees. A copy of the suggested form for this report was enclosed. This form does not replace the present NavMed Form B which should be submitted in accordance with existing instructions.

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Circular Letter 46-156 28 October 1946 (Not Restricted)

To: All Ships and Stations

Subj: Non-Listed Medical Supplies and Equipment, procurement of

Ref: (a) BuMed CirLtr No. 46-68 of 15 April 1946; N.D. Bull. of 30 April 1946, Item - 46-894.

1. Paragraph 8 of reference (a) is hereby canceled and the following shall be substituted therefore:

"Non-Listed Items. When medical or dental supplies and equipment are required by an activity and such item (or items) is not specifically listed with a stock number in the Catalog of Navy Material, Bureau of Medicine and Surgery Section, the following procurement methods are specified:

(a) By purchase, using any of the authorized procurement methods provided funds have been made available. When funds are not

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available purchase may be made in accordance with part VI, paragraph 3045, Manual of the Medical Department.

(b) Submission of NavMed Form 4 in the following cases only:

(1) Items covered by specific BuMed Directive.

(2) Items approved in Annual Estimates of Expenditures listed for central procurement through the Materiel Division, BuMed.

(3) Items required by extra Continental Activities and not obtainable locally or through the regular purchase methods.

(4) Professional books of a medical, dental, nursing or other allied science category. (No local purchase of books is authorized except local City Directories).

When NavMed Form 4 is submitted for items falling in category (b) above, the requisition shall be prepared and forwarded to the Materiel Division, Bureau of Medicine and Surgery, Sands and Pearl Streets, Brooklyn 1, N. Y.

The same procedure shall be followed in the preparation of NavMed Form 4 requisitions for non-catalog items as that outlined in paragraph 7 above, except under "Stock No." the appropriate class, preceded by the letters "NL" shall be inserted, such as "NL-5," etc.

When replacement parts or accessories for X-ray, electrically operated, or other equipment are required an adequate description of the part as well as the item for which the part is required, or with which the accessories are to be used, must be stated. This description shall include the model number, serial number, electric current data when indicated, or such other description as may be obtainable. Detailed descriptions for such items are necessary, in order that the central procurement agency may determine accurately the material required. Requisitions for non-listed books shall state the exact title, author, edition and publishers name. Incomplete descriptions of non-listed material necessitates needless correspondence and procurement delays. As a general rule several makes of an item are available in the market, and competitive bidding is required. Therefore, commercial catalog references must be construed as descriptive but not restrictive, unless sufficient justification is furnished for proprietory purchase. Each requisition for non-listed items shall be accompanied

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by a letter explaining why catalog items will not meet the requirements or answer the purpose. Prepare six and forward five copies of NavMed Form 4 for NL items.

When funds have been allotted to an activity for the specific purpose of procuring an item or items and the activity finds that the item or items are not available through the regular purchase methods, a NavMed Form 4 requisition may be submitted for central procurement through the Materiel Division, Bureau of Medicine and Surgery. In such event the activity will return to the Bureau, as a savings, the amount of funds allotted for purchase on the next regular NavMed Form B. A statement to this effect shall be included on the NavMed Form 4 requisition and specifically signed by the officer having primary cognizance of the "Medical Department, Navy" allotment.

When funds have not been allotted for procurement of non-listed items the requiring activity shall submit a letter of justification to accompany the NavMed Form 4 to the Materiel Division, BuMed. These type requisitions require the approval of the item as well as the expenditure of funds."

2. In the event an annual purchase requisition is required to initiate this procedure, activities are referred to the instructions in BuSandA Manual and Part IV, paragraph 3033, Manual of the Medical Department.

--BuMed. Ross T. McIntire

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Circular Letter 46-157 29 October 1946 (Not Restricted)

To: All Ships and Stations

Subj: Monthly Prosthodontia Report NavMed 610 Revised 8-46.

Refs: (a) Paragraph 1340, Manual Medical Department, 1945.

1. The change of stock numbers for precious metals in the Bureau of Medicine and Surgery Section of the Catalog of Navy Material has necessitated a revision of the Monthly Prosthodontia Report, NavMed 610.

2. A supply of the NavMed Forms 610 revised 8-46, has been mailed to all naval dental prosthetic facilities. Additional forms may be procured, when needed, from the nearest District Publications and Printing Office.

(Not Restricted)

3. Activities are directed to discard obsolete NavMed Forms 610 (4-45) upon receipt of the NavMed 610 (Rev. 8-46).

--BuMed. W.J.C. Agnew

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Circular Letter 46-149 7 October 1946 (Not Restricted)

To: Commander, NTC, San Diego, California
Commander, NTC, Bainbridge, Maryland
Commander, NTC, Great Lakes, Illinois
Medical Officers in Command, All U.S. Naval Hospitals (Continental US)

Subj: Authority to take final action on certain Reports of Medical Survey in cases of enlisted personnel.

Refs: (a) BuPers-BuMed Jt Ltr Pers-66-ELH over P3-5, BuMed-RP-OIM dated 12 Jan 1945.
(b) BuPers-BuMed Jt Ltr Pers-66-IG, P-16-3/MM dated 20 Jan 1945.
(c) BuPers-BuMed Jt Ltr Pers-66-WH, P3-5, BuMed-RP-OIM, dated 22 Feb 1945.
(d) Para. 16B33, Manual Medical Department.

This joint letter from the Chiefs of BuPers and BuMed cancels references (a), (b), and (c) and outlines the cases in which the addressees are authorized to take final action and points out those that must be forwarded for approval to BuPers via BuMed.

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Circular Letter 46-150 10 October 1946 (Not Restricted)

To: All Ships and Stations

Subj: Annual Physical Examinations - Calendar Year 1946.

Ref: (a) General Order 191 of 28 May 1943.

1. In view of the conditions existing in the naval service at the current time as a result of demobilization and the transfer of officers of the U. S. Naval Reserve to the U. S. Navy, the following is forwarded for guidance in connection with the annual physical examination required by ref (a):

(Not Restricted)

(a) Physical examinations conducted during the calendar year 1946 in the cases of officers of the Naval Reserve for the purpose of determining physical fitness for transfer to the regular Navy will obviate the necessity of conducting an annual physical examination in those cases.

(b) A physical examination conducted incident to temporary promotion shall be considered as not sufficient to obviate the necessity of an annual physical examination.

(c) In those cases where a chest X-ray study has not been conducted within the past year as required by paragraph 21103.2, Manual of the Medical Department, a chest X-ray study shall be conducted as a part of the annual physical examination.

(d) A blood Kahn test shall be conducted as a part of the annual physical examination in each case. An electrocardiogram shall be conducted in the cases of all officers who are 45 years of age or over. A complete blood count and sedimentation index shall be made in all cases and any other special study that may be indicated.

(e) Attention is further invited to the provisions of paragraph 21104, Manual of the Medical Department, in connection with the conduction of the annual physical examination.

(f) There will be no special boards convened for the purposes of examining senior officers.

2. Attention is invited to existing instructions which require that a NAVMED-Y, or a NAVMED-AV-1 in the case of aviators, be completed and forwarded only in those cases in whom defects are discovered which are regarded as sufficient to impair the examinee's ability to perform his duties. In those cases who are physically qualified in all respects, an entry on NAVMED-H-8 of the Health Record constitutes an appropriate record of the examination.

3. Attention is invited to the provisions of paragraphs 21104 and 2221.4, Manual of the Medical Department, regarding the forwarding of reports of annual physical examinations. The letter of transmittal required in paragraph 5 of ref (a) shall be omitted.

--MarCorps. A. A. Vandegrift --BuPers. L. E. Denfeld

--BuMed. Ross T. McIntire

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