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Circular Letters

Lepra Reaction: Its Treatment With Dihydrostreptomycin

Lepra reaction is manifested by the appearance of multiple acute or subacute, local or systemic phenomena during the chronic course of leprosy. In some cases, lepra reaction may be the first clinical manifestation of the disease. These acute inflammatory changes, which affect different organs and almost invariably the skin, are usually accompanied with fever, on the basis of which this reaction has been designated as "lepra fever."

Typical relapsing lepra reaction is characterized by acute constitutional symptoms, usually severe, although the symptoms may vary more or less in degree in different cases. These symptoms are in no way different from those observed in various infectious diseases, continuing throughout the duration of the process and consisting of a prodromal stage, a period of invasion, then acme, and finally a decline in severity in the stage of regression. The fever is accompanied with chills, malaise and prostration, headache, vomiting, tachycardia, tachypnea and pains in the bones and joints, preceded or accompanied with a more or less generalized eruption. In severe cases, extracutaneous inflammatory manifestations may be observed, consisting of lymphadenitis, hepatosplenomegaly, orchitis, neuritis, iridocyclitis, keratitis and ulceration of the nasal septum.

The eruption of lepra reaction appears as nodules, erythema multiforme and erythema nodosum lesions superimposed upon previous macules, infiltrations and erythema, as well as in normal skin. Muir remarks that all lepromatous areas are simultaneously edematous, turgescent and inflamed; in other cases, they may be initially limited to one or two areas, gradually involving the remaining preexisting lesions.

The infiltrations vary in size, shape and degree and are painful to pressure; their color changes from various shades of red to violaceous, sepia or yellow-brown. One main characteristic is that all the various types of lesions are sharply limited, yet even areas of apparently normal skin present a slight but distinctive erythema. After a variable length of time, the infiltrations diminish, the lesions flattening down to the original skin level, their color fades, and finally some may completely regress. In rare instances, however, the reaction may be so severe that all the skin becomes involved, assuming the appearance of a generalized erythroderma. One feature is prominent, namely, that after the reaction has subsided, the patient presents a decidedly more lepromatous appearance than previously.

The character and evolution of the symptoms in lepra reaction suggest a classification into two forms: (1) the classic type, accompanied with severe relapsing febrile episodes, and (2) atypical lepra reaction, in which febrile attacks are usually lacking or of only slight degree, although local manifestations are always present. The beneficial influence observed in the course of the disease in patients in whom the leprotic reaction is accompanied with relapsing lesions of erythema multiforme and nodosum must be emphasized. In these cases, ocular lesions rarely occur. Conversely, the lesions of erythema nodosum or multiforme are not observed in patients with severe, long-standing, and successively recurring lepra reaction.

Although the status and interrelations of the reactional processes observed in the evolution of leprosy have been firmly established, the exact nature of the process has not been determined, although the differences and delimitation in the clinical evolution of the lepra reaction in the lepromatous, tuberculoid and undifferentiated types are evident.

In the treatment of this reaction, control of only the lepromatous patients is important because of the serious prognosis and the resistance to all therapeutic methods in some cases, in contrast to the benign course with no subjective symptoms and spontaneous cure in patients with the tuberculoid type. Patients presenting the lepromatous lepra reaction suffer not only from severe constitutional disturbances but also from persistent fever and serious, intractable ocular and neurologic lesions. For these reasons, leprologists have used various methods and a large number of drugs in the treatment of such patients, generally because of the following theoretic considerations: (1) counteraction of the possible untoward effects of previously administered drugs, namely, chaulmoogra and the sulfones, as factors in the production of the lepra reaction; (2) alleviation of the allergic status of the patient; (3) improvement of the general condition of the patient; (4) control of possible coexisting infections, specific or nonspecific, and (5) reactivation of the reticuloendothelial system.

Dreisbach, at the Palo Seco Leper Colony, C. Z., Panama, contributed the first report on the use of streptomycin in 5 lepromatous patients manifesting lepra reaction, whose clinical course was not influenced by the sulfones or other methods usually employed. Although favorable results were noted in 2 patients, the author did not draw any definite conclusions.

O. Romero and J. Grau Triana substituted the newer antibiotic, dihydrostreptomycin, for the streptomycin which had proved to be toxic in its effects, administering it to 4 patients with lepra reaction of the lepromatous type after they had failed to respond to the ordinary routine methods of therapy. The dose employed was 1 Gm. per day, divided into 4 injections given 1 every 6 hours over periods of from 8 to 20 days. The results were reported as excellent: the fever subsided; the general symptoms disappeared; the cutaneous lesions rapidly regressed and the erythrosedimentation rate decreased. Saenz reports 9 cases treated with benefit.

Since streptomycin has been found to be useful for patients who appeared to have reached a limit of improvement in skin and mucous-membrane lesions with sulfone therapy, and since it seems to have the ability to effect a reduction of the Mycobacterium leprae in the lesions, the use of this antibiotic would appear to be indicated in the treatment of lepra reaction. Dihydrostreptomycin, however, has replaced streptomycin because of better tolerance and lower toxicity. Dihydrostreptomycin is a valuable drug in the treatment of lepra reaction, provided that dosage and duration of administration are properly determined in order to preclude possible untoward reactions. (A. M. A. Arch. Dermat. & Syph., Jan. 1952, B. Saenz, Habana, Cuba)

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Parenteral Nutrition With a Solution Containing One Thousand Calories per Liter

A solution was prepared using commercial solutions of concentrated invert sugar and amino acids. The invert sugar is an acid hydrolysate of cane sugar, each molecule of which is thereby broken down into 1 molecule of glucose and 1 molecule of fructose. The amino acids were derived from the enzymatic digest of bovine plasma or the acid hydrolysate of casein. Absolute ethyl alcohol was added to bring up the caloric content. The solution whichhas proved to be most satisfactory in the average patient has the proportions given in Table 1.

TABLE 1.—*Contents of Solution for Parenteral Nutrition*

	Total		Caloric Value, %	
	Gm.	Calories	This Solution	Ideal
Invert sugar	120	480	48	45-50
Amino acids	60	240	24	15-25
Ethanol (50 cc.)	40	280	28	30-40
Water, q. s. ad	1,000	...	..	.....
Total		1,000		

One ampule of pan-vitamins was added to 1 liter of this solution in each 24-hour period. Sodium, potassium and other electrolytes were added to the solution as they became indicated. No incompatibilities from these additions were encountered in any instance. The amino acid preparations which were used contained variable amounts of the essential and trace electrolytes which were sufficient to provide an adequate amount in the usual uncomplicated case. Electrolyte balance studies in relation to parenteral nutrition are being pursued at present.

Excellent results have been observed in this preliminary series of patients receiving the solution containing 1,000 calories per liter. This solution has been used by the authors almost routinely in the postoperative period until the patient is able to consume adequate food or whenever a patient is in need of fluid or calories. Parenteral nutrition with the use of the solution, in which there is a physiologically balanced proportion of carbohydrates, amino acids and additional calories from ethanol, offers a simplification of the calculation of the nutritional intake of the patient. If the patient receives 2,500 cc. of the solution he has received 2,500 calories, and since the numerical figures for the caloric and the fluid intake are the same, a glance at the record of parenteral fluid intake will also give the physician information concerning the number of calories received. The authors consider that it is as important to keep a record of the caloric balance as it is to record the fluid balance.

A total of 543 liters of this solution has been administered intravenously to 109 patients without producing any permanent harmful effects. No greater local reaction in the vein was encountered than when 5 % glucose was given intravenously, although a long intravenous polyethylene tube is preferred when continuous fluid administration is needed because of greater comfort for the patient. Extravasation of the solution into the subcutaneous tissues has produced

local redness and soreness but no slough of tissue.

The continuous intravenous administration of this solution has offered a method of providing the full nutritional requirement without overhydration of the patient. The method provides a means whereby a patient can receive nutrition at the same time that he is receiving his fluid requirement. The clinical manifestations of a smooth convalescence in patients receiving this solution have been most encouraging.

The authors' impression is that electrolyte balances are more easily maintained or corrected when adequate nutrition has been provided simultaneously with this solution. Nitrogen balance studies on 19 patients demonstrated that the most favorable results occurred when the solution contained 12 % invert sugar, 6 % amino acids and 5 % ethanol. Water balance studies indicated that the average gain in weight was not due to water retention. There was neither polyuria nor oliguria during the period of infusion.

Blood sugar determinations during the course of the intravenous infusions indicated that the blood sugar level does not, on the average, exceed the renal threshold and it does not rise as high as has been observed when a smaller quantity of glucose was given.

The use of this method of feeding in 2 cases of biliary fistula suggest its advantage in diminishing the secretion of bile and allowing the irritated fistulous tract to heal. The method also offers a substitute for gastrostomy in patients who must undergo resections of the mandible for carcinoma and is also suitable for patients who must, for a short time, be nourished through a gastrostomy.

Adequate parenteral nutrition in the immediate postoperative period, which is continued until the patient is able to eat, appears to aid in the maintenance of a normal electrolyte level of the blood. (A. M. A. Arch. Surg., Jan. 1952, C. O. Rice, J. H. Strickler & P. D. Erwin)

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New Symptomatic Treatment for Acute Intermittent Porphyria

Heretofore there has been no satisfactory treatment for acute intermittent porphyria. Mortality and morbidity have been high. The gastrointestinal disability alone has prevented patients from being self-supporting since the sequelae of one exacerbation persistas the next exacerbation beings. Frequently patients with initial symptoms limited to the gastrointestinal tract later exhibit neurological symptoms. When neurological symptoms appear, the mortality approaches 90 % in a single attack.

Prolonged observation of frequently occurring exacerbations of acute intermittent porphyria in one patient afforded opportunity to test the effectiveness of several new treatments. The patient was able to return to employment from which his illness had kept him for the preceding 2 years.

Sympathetic ganglions of patients with acute intermittent porphyria frequently reveal lesions at necropsy. Mason and associates found spasmodic contraction of the bowel throughout its entire length at operation on a patient with an acute attack of acute intermittent porphyria and attributed this contraction to the lesions of the sympathetic ganglions. The author's patient also showed complete cessation of peristalsis during an attack of pain. Gordin drew attention to the sympatheticotonia manifested by tachycardia, restlessness and dilated pupils in patients with porphyria and suggested therapy with neostigmine (prostigmin) in an effort to counterbalance the sympatheticotonia by increasing vagal stimulation. His patient improved after neostigmine treatment; Wehrmacher has not given it to his patient. Instead, he has used injections of tetraethylammonium chloride, priscoline hydrochloride, tubocurarine hydrochloride or induced splanchnic sympathetic block.

Tetraethylammonium chloride is a ganglionic blocking agent producing interruption of transmission at sympathetic and parasympathetic ganglions. Priscoline hydrochloride blocks sympathetic pathways at their termination in smooth muscle and has an adrenolytic action. The procaine-induced splanchnic block interrupts preganglionic and postganglionic sympathetic fibers but may also influence transmission in ganglions in the field of the injection. The site of action of tubocurarine chloride is less well localized. Gross and Cullen showed that administration of therapeutic amounts of curare caused relaxation of the smooth muscle of the small intestine and that this effect was due, in part, to a direct action on the effector cells. They felt that their experiments also corroborated the growing concept that curare is capable of acting anywhere in the nervous system that acetylcholine is the chemical mediator. Piperoxan hydrochloride is adrenolytic, but its action is of extremely short duration. Its fleeting action can explain its apparent lack of effect.

The reason for failure of tetraethylammonium chloride treatment to relieve one episode of unusually severe pain experienced by the patient is obscure. The largest dose employed (7 mg. per Kg. of body weight) may have blocked ganglionic transmission only incompletely or a higher concentration of porphyrins may have acted peripheral to the ganglions. Porphyrins, particularly the tetrabasic coproporphyrins, in sufficient concentration, cause spastic contraction of isolated intestinal strips of animals. The subsequent relief induced by splanchnic block does not clarify the problem, since the block could have completely inhibited sympathetic transmission or porphyrin concentrations could have fallen in the interval to a level adequate to produce increased sympathetic impulses but inadequate to stimulate the bowel wall directly. Subsequent trial with tetraethylammonium chloride established its continued effectiveness, eliminating the consideration of acquired resistance to its action.

Relief induced by blocking the sympathetic nervous system at diverse sites in this patient supports Mason's hypothesis that pain is related to abnormalities of this system. The infrequency of patients with acute intermittent porphyria prevents more thorough trial immediately of the new treatment. It is hoped that others will test it. (A. M. A. Arch. Int. Med., Jan. 1952, W. H. Wehrmacher)

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Mercurial Diuresis in Edematous Individuals

The effect of mercurial diuretics on the renal excretion of electrolytes has been thoroughly investigated in the dog and in the normal man. The electrolyte losses in the edematous patient, however, have been studied less extensively. There is general agreement that in both the normal individual and in the edematous patient the diuresis is predominantly one of sodium and chloride. There is also agreement that potassium excretion is not increased in normal individuals while in the edematous patient an examination of the reported data reveals potassium loss of varying magnitude. The present study was designed to extend the information concerning the relative losses of sodium, potassium and chloride following administration of a mercurial diuretic in edematous patients and to assess the changes in body fluid compartments resulting from these losses.

The electrolyte and water losses in 75 instances of diureses following mercuhydrin were studied in 17 edematous patients. The loss of potassium was appreciable following the injection of mercuhydrin to patients who almost completely retained their dietary sodium. Occurrence of such clinical symptoms as weakness, nausea and ventricular premature contractions might be attributed to this loss of potassium.

The fluid lost by mercurial diuresis was isotonic with body fluids. The chloride concentration was fairly constant at 151 mEq. per liter. The concentrations of sodium and potassium were more variable, the average concentrations being 97 and 35 mEq. per liter, respectively. Loss of water and electrolyte in these concentrations leaves the patient in relative alkalosis, with a loss of intracellular potassium and a gain in intracellular sodium. (Circulation, Jan. 1952, G. T. Lesser, M. F. Dunning, F. H. Epstein & E. Y. Berger)

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The Application of Electromyography to Dental Research

There is a need for research into the neuromuscular mechanisms controlling mastication and the possibilities of employing electromyography as an instrument in clinical research are numerous. An outline of the method and the armamentarium required for electromyography was presented in this article.

Present research efforts are directed toward mapping the electromyographic patterns of the facial muscles, including the muscles of mastication, in normal and pathologic conditions in man. Toward this purpose, normal individuals at various ages, as well as subjects with malocclusions and a variety of neuromuscular disorders have been studied and the patterns mapped.

The most striking observations thus far concern the electromyographic patterns of mastication noted in a variety of individuals. These differences may provide an insight into some of the factors governing masticatory efficiency.

Studies in patients with brain tumor, Parkinson's disease, bulbar poliomyelitis and myasthenia gravis were, in part, representative of the variety of lesions

that may strike at different levels of neuromuscular control. The observations in these instances revealed that the muscles of mastication are susceptible to the same disorders affecting muscles elsewhere in the body. Moreover, the pathologic findings, as revealed in the electromyogram, are similar to those described for the muscles of the extremities.

The value of electromyography has been demonstrated in prescribing therapeutic exercises to suit the needs of the individual patient. Such exercises may assist in the rehabilitation of patients affected by poliomyelitis or cerebral palsy.

The synergistic behavior of the muscles of mastication in certain functional movements of the mandible has been demonstrated by the author. The patterns of synergistic behavior differed with respect to various disturbances in occlusion. These differences may be correlated with the efficiency, or lack of efficiency, of the masticatory mechanism. (J. Am. Dent. A., Jan. 1952, S. Pruzansky)

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Cancer of the Gingiva

The gingival mucosa is the third most common site of oral cancer, even though considerably outranked numerically by those malignant neoplasms which arise in the lip and tongue. The mandible is more commonly involved than the maxilla by a ratio of approximately 4 to 1. As in most oral cancer this lesion is 5 times more frequent in males than in females. Gingival carcinoma fails to display the vagaries of microscopic structure and growth pattern exhibited by lingual cancer, and is more apt to be of intermediate grade of malignancy. Because of the intimate approximation of the thin gingival mucosa to underlying periosteum of mandible or maxilla, some degree of bony involvement is a usual complication even in early cases. In some instances clinical examination shows only a superficial erosion of the mucosa which may be the deceptive surface of a neoplasm infiltrating deeply into the underlying bone. For this reason, prompt biopsy of any erosive process of the gingival tissues is of extreme importance.

The most common malignant neoplasm of the gingiva is squamous cell carcinoma. The great majority are of grade II or III malignancy. The lesion most often starts in the mucosal epithelium about the tooth socket. The main direction of spread may be inward with early infiltration of bone, or peripheral toward the floor of the mouth or hard palate or buccal sulci. Ulceration of the lesion in its early stage is usual, and there may be an elevated indurated border representing the limits of the lesion. Fixation to the periosteum occurs early, even without actual infiltration. Metastases rarely go beyond the cervical nodes. Roentgenograms will indicate more than minimum bony invasion, and the pattern of primary cortical erosion and thinning differentiate such bone destruction from the expansile lesions arising in the mandible or maxilla proper and of primary osseous origin.

Present trends are toward surgical treatment of gingival carcinoma. The use of adequate doses of irradiation in such close proximity to bone carries a prohibitive hazard of subsequent radiation necrosis and secondary osteomyelitis

of bone. Occasional early lesions of low grade malignancy with little or no involvement of bone and no evident metastases to cervical nodes may properly be treated by wide local resection and preservation of bony continuity. For other than such early processes, ideal treatment consists of a combined radical block dissection of the neck on the side of the lesion to remove actual or possible metastases, with resection of the mandible and adjacent soft tissue.

Present indications are that radical resection as described above may increase considerably the cure rate of this form of oral cancer. At present results in terms of 5-year cures are 40 % for reasonably early cases and 25 % for advanced cases. (J. Oral Surg., Jan. 1952, I. Macdonald)

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Glomus Jugulare Tumor

Glomus jugulare tumors are of sufficient rarity to make the report of a case treated with x-ray and surgery of value. These tumors have also been termed nonchromaffin paragangliomas and carotid body tumors of the middle ear.

Guild, in 1941, described a structure in the middle ear, usually in the region of the jugular bulb, which closely resembled the glomus caroticum, or carotid body; for this reason he termed this structure the glomus jugularis. A tumor of this body was first reported by Rosenwasser in 1945. To date there have been 21 proved cases recorded, and an additional 13 probable cases have been cited. Four of the recorded cases have been malignant.

A review of surgical material at the University of Kansas Medical Center revealed but 1 case of glomus jugulare tumor. A 61-year-old, married white woman was first seen in the Out-Patient Clinic on September 13, 1950. She complained of a growth in the left ear of 10 years duration, and had been treated for fungus infection of this ear for 8 years. At no time did she suffer pain. Hearing loss was first noticed in the left ear 3 years ago.

Examination revealed a red polypoid mass, which completely filled the left ear canal to its bony lip. There was no purulent discharge, but biopsy of the mass was attended by brisk hemorrhage, which was controlled by packing the canal with vaseline gauze; the pathological report was aural polyp with chronic inflammation. Second and third biopsies were done on October 19 and October 24, 1950, which were again complicated by profuse hemorrhage requiring packs. The pathological reports were identical with that which was previously submitted. The remainder of the physical examination brought to light no abnormality, and the mastoid x-rays showed no evidence of sclerosis or trabecular destruction, but only diffuse clouding and thickening of the cell walls. Laboratory findings were essentially within normal limits.

Endaural radical mastoidectomy was performed on November 17, 1950. During the procedure the mastoid antrum and aditus were found to be normal; the middle ear was filled with granulations, and facial twitching occurred whenever this tissue was touched. Considerable granulation tissue was removed but

hemorrhage was so profuse that surgery was discontinued since visualization was impossible. The bleeding was controlled by packing. The pathological report on the material submitted was hemangioendothelioma.

X-ray therapy was then given in the amount of 3,364 r, over a period of 15 days, with the hope that the tumor would be destroyed or at least become less vascular, thereby making surgical eradication feasible. In 2 months time it was noted that the tumor had decreased in size, but had not disappeared. On January 19, 1951, revision of the radical mastoidectomy was carried out with very little bleeding. The tumor tissue was removed from the middle ear and it was discovered that the facial canal was eroded at the genu to the extent of about 3 mm. The nerve was shredded but there was no solution of its continuity. The lesion had invaded the eustachian tube and semi-canal of the tensor tympani, and extended to the wall of the carotid artery. All visible tumor tissue was removed and a split thickness skin graft was applied.

The patient awakened with a complete left facial paralysis which persisted for 6 weeks and slowly resolved until function was complete. Packs and sutures were removed on the 6th postoperative day, and the entire cavity was well epithelized within 3 weeks. There has been no recurrence to date.

Since there is considerable controversy in the literature regarding the radiosensitivity of glomus jugulare tumors, the authors felt that the fact that this lesion diminished both in size and vascularity following irradiation should be reported. Neither surgery nor x-ray therapy alone would have proved effective. The decrease in vascularity incident to irradiation made completion of the operation possible.

It is easy for one to miss the diagnosis of this tumor when it occurs in the middle ear, because biopsy reports frequently are returned as aural polyps, since chronic inflammation on the external surface is apparently a constant feature. The otolaryngologist will rarely do deep biopsy in this area for fear of damaging vital middle ear structures. It is quite possible that the disease remains undiagnosed in many instances for its likeness to chronic granulation tissue of chronic otitis media is most evident. Such granulations are frequently treated with strong cauterizing agents for long periods of time.

The diagnosis of glomus tumor was not made until after all the surgical procedures had been carried out. Careful re-examination of the first two aural polyps resected revealed no evidence of tumor. In the stalk of the third polyp removed, however, a small focus of tumor cells was found, from which a definite diagnosis of glomus jugulare tumor could be made. The material from the last 2 surgical procedures contained abundant tumor tissue. (J. Kansas M. Soc., Dec. 1951, D. M. Gibson & G. O'N. Proud)

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The Tuberculous Mother

A total of 149 tuberculous mothers with 401 full-term pregnancies has been observed in the present study which represents 3 different groups of patients.

The first group is composed of 56 mothers in whom tuberculosis was discovered by routine roentgenographic survey of all patients who attended the Prenatal Clinic of the Boston City Hospital in 1940-1941.

The second group is composed of 25 former Boston City Hospital student nurses in whom tuberculosis was discovered by periodic roentgenographic survey while they were in training. Those who married and became pregnant were studied. Observations on this group began in 1932.

The third group is composed of 68 mothers treated at the Channing Home, a sanatorium for the care of tuberculosis. The study of this group began in 1930.

All persons have been followed for a minimum period of 5 years; the maximum period of study is 20 years.

The initial investigation began in 1940 with the roentgenographic survey of consecutive admissions to the Prenatal Clinic at the Boston City Hospital. The purpose was (1) to estimate the character of tuberculosis in a cross-section of the population of mothers who came to the Prenatal Clinic for supervision of their pregnancies; (2) to note the influence, if any, of gestation, parturition and postpartum periods of pregnancy upon the course of tuberculosis and (3) to determine the best form of management of tuberculosis when it occurs in the pregnant woman.

The evidence obtained from the present study can incriminate neither the childbearing incident nor other specific factors related to pregnancy as potentially dangerous for tuberculosis. The anatomic extent of disease, the pathologic pattern and the native resistance or susceptibility of the individual patient to tuberculosis appear from the study to be the essential factors which determine the course and prognosis of the tuberculous mother.

Pregnancy is an extra burden, physically and physiologically, for any woman, no matter how easily she may carry and deliver her child. It was not possible to demonstrate a statistically significant difference in end results between the pregnant and the non-pregnant group.

It is clear from the present study that the best management of the tuberculous mother is the treatment of her own particular type of tuberculosis with all available resources. The natural course of pregnancy seems little affected but it should be supervised with the usual precautions of a normal pregnancy. In addition, the mother should have whatever treatment is indicated for the best care of the tuberculosis per se, regardless of the pregnancy.

Most important of all, every pregnant woman should have a chest roentgenogram at the beginning of her first pregnancy, whether or not she is known to have, or is suspected of having, tuberculosis. With the discovery of a lesion or the knowledge of an old one, management of the case will then be guided by the nature of the underlying tuberculosis, whether it is active or inactive, whether it is new and undiscovered disease or an old and known infection with an established pattern of behavior.

Mothers with inactive, old fibrotic and fibrocalcific tuberculosis do well and have been shown in this study to have an excellent prognosis through numerous pregnancies. Moreover, mothers have done well with minimal exudative

tuberculosis which has been treated early in its course and arrested a year or more before the onset of pregnancy. This is seen especially in the nurses' group. Patients with far advanced cavernous tuberculosis had the worst prognosis. Since 13 % of the 401 full-term pregnancies were shown to have some relation of activity to pregnancy or the first postpartum year, however, all of those with lesions should have periodic clinical and roentgenographic evaluation every 3 months during pregnancy, immediately post partum, and every 3 months during the first postpartum year. For the subsequent 2 years the lesion should be followed every 6 months; thereafter, every year, indefinitely. This is approximately the regimen recommended for any person with a newly discovered lesion, the status of which is not definitely determined.

Active tuberculosis discovered at any time in pregnancy, or any other time, requires strict bed rest with whatever collapse procedures or chemotherapy are indicated for the type of disease.

The number of children in the family did not appear to be an important factor in activation of the mother's tuberculosis. Activation of tuberculosis, if it occurred in relation to 1 or, rarely, 2 pregnancies, was likely to be followed or preceded by other normal pregnancies.

The natural history of tuberculosis was greatly varied in the 3 groups studied. (Am. Rev. Tuberc., Jan. 1952, J. D. Cohen, E. A. Patton & T. L. Badger)

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Dromoran in General Surgery

Recently the new analgesic, dromoran (2-hydroxy-N-methyl morphinan), has been introduced. Its chemical composition resembles that of morphine; it is completely synthetic and is not an opium derivative as are the other available analgesics resembling morphine.

The analgesic potency and safety margin of dromoran in animal studies were encouraging and have led to an extensive clinical evaluation of the drug during the past 2 years. Particular interest has been focused on the surgical field. Curreri described its usefulness in the relief of pain following thoracic operations. More recently, Stoelting, Theye and Graf at the University of Indiana, and Keutmann and Foldes at the University of Pittsburgh - both groups from the departments of anesthesiology - have attested to the commendable features of dromoran used preoperatively and postoperatively. (See Medical News Letter, Vol. 17, No. 7, 6 April 1951.) These investigators have indicated the superiority of dromoran in the relief of pain as compared to morphine, dilaudid and demerol.

Dromoran, a new synthetic analgesic, was administered to 75 patients. The majority were given the drug postoperatively; the remainder, for the relief of pain due to well-known painful disorders encountered in daily practice. The following features were noted: (1) Excellent and rapid analgesic potency as regards both completeness and duration; (2) absence of postoperative abdominal distention; (3) absence of constipation and urinary retention; (4) absence of undesirable mental effects.

The dose varied from 2 to 5 mg. Both the dose and the frequency of administration were governed by the apparent analgesic needs of the individual patient. In all instances the drug was given subcutaneously.

Despite the fact that the average or standard dose described in the literature is 5 mg., the patients often obtained adequate relief from as little as 2.5 to 3.75 mg. There was reduction in the frequency of administration as compared to previous experience with morphine, demerol or pantopon. The average interval between doses was 9 hours.

Of particular interest in this connection were the cases of inoperable carcinoma with advanced metastases involving the ribs and spine in 1 case and the pelvis and vertebral bodies in another. Pain in both cases was severe. An initial dose of 2.5 mg., increased to 5 mg., p.r.n., resulted in great relief until the time that the 2 patients died. An additional patient with liposarcoma of the thigh obtained complete relief and comfort with dromoran.

It is concluded that dromoran is an effective, well-tolerated analgesic for relief of pain in routine surgical and medical cases. (J. Internat. Coll. Surgeons, Dec. 1951, F. J. Crescente)

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The Portacaval Venous Shunt

In 1945 Whipple and Blakemore established the feasibility of venous shunts for the treatment of patients with portal hypertension. The operation that they devised has been further developed and modified by others, and the procedure now has been done in a sufficient number of cases to prove its value in the treatment of bleeding esophageal varices. That the operation has not gained more widespread popularity is apparently due chiefly to technical difficulties and dangers, and to lack of evidence that the shunt can be expected to remain open. There also seems to be little unanimity of opinion as to the exact type of venous anastomosis which is to be preferred. The present study was undertaken in an attempt to find a solution to some of these problems.

Bleeding esophageal varices constitute an extremely lethal complication of cirrhosis of the liver. The majority of patients with this complication will probably die within 1 year of the first bleeding episode if the portal hypertension remains untreated.

Analysis of this small series of cases indicates that excellent results may be obtained in the prevention of further bleeding by the performance of some type of portacaval venous anastomosis. The risk is small provided only that patients with reasonably good liver function are selected for operation. Analysis of these cases suggests that sufficient hepatic reserve to make the patient a satisfactory operative risk likely is present if the serum albumin is over 3.0 Gm. per 100 cc., the bromsulphalein retention under 15 % in 3/4 hour, and the prothrombin value 60 % of normal or better. These figures in general agree with those suggested by Blakemore. However, the authors have been surprised occasionally to find very extensive liver damage evident histologically, even when the various laboratory tests were well above the "critical" levels.

The results of shunt for hemorrhage have been clear cut and excellent, whereas the results in the treatment of ascites have been only fair. When both hemorrhage and ascites are present, liver damage is likely to be advanced, and the patient's chances of surviving the operation are small. There is little, if any, evidence to suggest that the course or progress of cirrhosis of the liver has in any way been altered by the shunt operation in the entire group of 18 cases, but the follow-up period (maximum of 2 and 1/2 years) is too short to allow one to gain more than an impression on this point.

The technic used for these operations is not difficult. The 18 cases herein reported were operated upon without incident by each of a number of surgeons, including several senior surgical residents. Operating time averaged 4 hours. The anastomosis is performed leisurely and with safety because the vena cava clamp is applied so tightly that it cannot slip off. It is reasonable to believe that the anastomoses in this series of patients have remained patent because (a) similar anastomoses in animals have remained open for as long as 1 and 1/2 years, even in the absence of a pressure differential between the 2 veins; (b) except for 1 case, there has been no recurrence of bleeding from esophageal varices in the 12 patients who have had shunts performed because of bleeding; (c) autopsies were performed upon 3 patients who died in hepatic coma 1 month, 6 months and 1 year after operation. All 3 patients had widely patent anastomoses at postmortem examination; and (d) the 1 patient with radiologic evidence of extensive varices showed almost complete disappearance of the varices on esophagogram 1 year after operation.

The type of anastomosis to be performed must be decided for the individual case. The authors prefer the side-to-side portacaval anastomosis in patients with portal hypertension resulting from cirrhosis of the liver, the largest group of patients seen. Those with extrahepatic portal bed block, such as thrombosis or cavernomatous transformation of the portal vein had best be treated by splenectomy with splenorenal shunt. More difficult cases, such as those who have had previous splenectomy, are harder to manage, but it is likely that some type of venous shunt may be anatomically feasible in the majority of these individuals.

Recently, other methods of treatment of patients with portal hypertension have been reported. These include (a) injection of the varicose vessels in the lower esophagus, stripping the esophageal veins and mediastinal packing, all designed to decrease the blood flow through the submucosal varices; (b) extirpation of the lower esophagus and upper stomach in an effort to completely remove the involved area and (c) subtotal or total gastrectomy or vagotomy, to reduce gastric acidity so as to avoid erosion of the lower esophagus.

Immediate results of these various procedures have been moderately good. It must be remembered, however, that such procedures as splenectomy and omentopexy in the past have given good short term results, but have not been very successful over a long period of time. One wonders whether these more recently suggested procedures will also prove unsatisfactory as time goes on, since the underlying portal hypertension remains unchanged. Ligation of the splenic artery or other vessels may be worth trying in patients whose condition

is too poor to consider a more major procedure, but permanent arrest of hemorrhage is unlikely. Because the creation of large venous shunts between the portal and systemic circulation will reduce the pressure in the portal system permanently if the shunt remains open, it seems to the authors that this method of treatment is to be preferred over any other less physiologic type of approach.

Although a much longer period of follow-up will be necessary, the authors believe that the results obtained so far are encouraging. It is their opinion that these results, when considered with the more extensive experience of Blakemore and others, justify, from the practical point of view, the recommendation of portacaval or splenorenal anastomosis as the operation of choice for the elective treatment of patients with bleeding esophageal varices associated with portal hypertension. (Ann. Surg., Jan. 1952, A. Large, C. G. Johnston & D. E. Preshaw)
Note: See also Medical News Letter, Vol. 18, No. 8, 19 October 1951.

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The Colorimetric Microestimation of Human Blood Cholinesterases and Its Application to Poisoning by Organic Phosphate Insecticides

The widespread employment of organic phosphate insecticides such as tetraethyl pyrophosphate (TEPP) and parathion, without adequate knowledge of their potential hazards, has resulted in a number of cases of human poisoning, some of which have terminated fatally. However, several seasons' experience has demonstrated that these valuable insecticides can be used safely by observing certain precautions such as the use of protective clothing, gloves and respirators, and by the periodic determination of dangerous levels of overexposure by measurements of the cholinesterases of the blood. This paper is concerned with the latter phase of personal protection, and describes some of the results of a 2-year study of blood cholinesterase levels of persons using organic phosphate insecticides, and the development of a satisfactory method for the estimation of plasma and red cell cholinesterases on blood from finger tip puncture.

The physiological actions of the organic phosphate insecticides, both on insects and vertebrates, have been shown to be largely, if not entirely due to specific reactions between these compounds and the cholinesterase enzymes involved in the transmission of nerve impulses. (See Medical News Letter, Vol. 16, Nos. 1 and 2; Vol. 17, No. 5). The cholinesterase combines chemically with the inhibitor and is no longer capable of catalyzing the hydrolysis of the chemical mediator, acetylcholine (or a related choline ester) to acetic acid and choline. Therefore, acetylcholine accumulates at the neural synapses and produces the characteristic nervous disturbances encountered in cases of human poisoning. These include such muscarine-like effects as nausea, vomiting, diarrhea, pinpoint pupils and bronchial edema; nicotine-like effects such as twitching of eyelids and other muscles; and central nervous system disturbances such as giddiness, headache, drowsiness, confusion, difficulty in speech and coma (Medical News Letter, Vol. 16, No. 1; Vol. 17, No. 5).

A colorimetric method for the determination of human plasma and red cell cholinesterases on finger puncture blood has been developed. This method is rapid and highly precise and can be used with as little as 1 microliter of plasma. The conditions for its satisfactory performance are outlined by the author in detail and values are presented for expected normal variations in a single subject and in a group of human males.

This method is being routinely used to detect possible dangerous levels of overexposure to organic phosphate insecticides by a group of experimental workers, and a summary of the various type of these anticholinesterases which may be encountered and their effects on blood cholinesterase is presented. It is suggested that the method may also be of value in clinical determinations of possible overdosages in patients undergoing anticholinesterase therapy for nervous disorders; in experimental pharmacological studies with small laboratory animals and in the possible determination of dangerous overexposures among troops and civilians subjected to the effects of anticholinesterase war gases. (J. Econ. Entomol., Dec. 1951, R. L. Metcalf)

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Hematological Conference Report

At a hematological conference of the Atomic Energy Research Establishment, Harwell, England, the following opinions were generally agreed upon:

1. Blood counts are the best index of the effect of irradiation we have at present.
2. Blood counts should be made on persons exposed to radiation.
   (a) Efforts should be concentrated on those with serious exposure hazard.
   (b) Time and effort must not be frittered away on fringe cases.
3. Monitoring can reduce and, in certain circumstances, eliminate the need for counts.
   (a) Especially true in large, fixed radiation generating machine installations.
   (b) Blood counts are needed in addition to monitors in persons using radioactive isotopes.
4. Costs can be reduced by using the white blood count only as a routine examination to indicate a trend - on the assumption that the trend is the paramount consideration. Agreement was not unanimous on this item.
5. The first sign of overexposure to radiation is the crossover between neutrophils and lymphocytes, and therefore the differential count is too important to be eliminated from routine examinations. Again there was disagreement among the conference members.
6. Repeat counts should be reduced to a minimum based on experience in each situation rather than at time intervals arbitrarily chosen.
7. Blood standards commonly used by conference members in industrial practice:

Total WBC		Poly. neutr.		Lymphs.	Abnormal cells	Interpretation or action taken
4500	or	3000	or	1000	any	Warning. Repeat before hiring new worker. If on the job, keep at work and repeat at short intervals.
3300						Harwell will hire if otherwise O. K.
3000	or	2000 - 2500	or	750	numerous	Do not hire. Remove from work, complete clinical workup.

It was pointed out that no research has been directed toward a "warning level", the figures of which have been arbitarily established.

8. Study should be made of the "physiological low" incidence (about 5 %) found in the general population with special regard to stability. (Technical Report, ONRL-125-51, 12 Dec. 1951)

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Mortality of Various Methods of Prostatectomy

Statistics were compiled on the results of various types of prostatic surgery based on a review of 347 cases during the past 10 years from the records of the private patients admitted to St. Mary's Hospital of the St. Louis University Group of Hospitals. The surgery in every case was done by one of 6 men of the visiting staff whose practice is limited solely to urology.

The pre- and postoperative care of these patients, although attended by the resident staff, was under the immediate supervision of the visiting staff. Generally, these patients can be considered to have been in better medical condition at the time of admission than those on the charity wards of the St. Louis Group of Hospitals. In both groups, however, no effort or expense was spared in the pre- or the postoperative group.

One hundred and forty-seven patients were in acute urinary retention at the time of admission, or had been catheterized for acute retention prior to admission to the hospital. Seven percent of the patients were considered to be in chronic retention. This is of interest when compared with other areas where prostatectomy is said to be done because of symptoms, and not the degree of urinary retention. Here, as elsewhere, a great percentage of the patients showed evidence of cardiovascular disease of varying degrees. Elevation of the systolic blood pressure was a rather consistent finding. In a small percentage of the cases the patients developed urinary retention during hospitalization for other types of surgery. Ten of the patients were admitted with the blood urea nitrogen elevated to uremic

levels. In a significant number of cases the urine was infected at the time of admission.

Duration of symptoms was rather evenly divided between 6 months and 5 years; 74 patients (21.3%) had symptoms for 6 months or less prior to surgery; 119 patients (34.1 %) had symptoms for from 6 months to 2 years and 76 patients (21.5 %) had symptoms ranging from 2 to 5 years. The remaining 78 (23.1 %) had symptoms for a period in excess of 5 years prior to surgery. Nocturia was the most common symptom. Initial symptoms of hematuria were found in 56 cases.

The average age of the entire group was 67.8 years (range 35 years to 89 years).

Hospital stay and postoperative stay averaged 24 days and 14.2 days, respectively, for the transurethral operation; 25 days and 21 days for the one-stage suprapubic operation; 52 days and 34.2 days for the two-stage suprapubic prostatectomy; 31 and 28 days for the perineal prostatectomy. Of the 347 prostatectomies, 202 were treated transurethrally, 62 had a one-stage suprapubic operation, 81 had a two-stage suprapubic operation and 2 were perineal prostatectomies. The total number of deaths were 21; 11 in the transurethral resection group, 4 in the one-stage suprapubic group, and 6 in the two-stage suprapubic group.

Transurethral prostatectomy was the method of choice in the majority of cases, regardless of age of the patient. The mortality rate and hospital stay were less with transurethral resection than with any other method. However, a sufficient number of cases of suprapubic prostatectomy are still being done to indicate that it is the procedure of choice in selected cases.

A comparison of mortality figures reported at this hospital before and after the introduction of antibiotics shows a lowering of the mortality for the one-stage suprapubic operation, but the antibiotics have not influenced the mortality of the two-stage suprapubic.

There has been little or no appreciable change in the hospital stay of patients with suprapubic prostatectomies. (J. Urol., Jan. 1952, J. E. Byrne)

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A Lipo-Protein-Nucleic Acid Complex in the Treatment of Radiation Injury

The pathologic effects of penetrating ionizing radiation are well established and identical, regardless of source of the radiation. The biologic damage is variable and is dependent, in part, upon the dosage and the rate of absorption. The degree of pathologic change diminished to some extent with slower rates of exposure, and the effect is lessened by tissue density and various shielding mechanisms.

In atomic explosions large dosages at fast rates of exposure and absorption with potential severe biologic effect are to be considered. The distribution will closely approach total-body exposure.

In estimating casualties in any given disaster area practical consideration must take first place. Persons within a radius of one-half mile of ground zero may be presumed to have received supralethal doses of radiation. In the zone from one-half to one mile from ground zero many persons who received radiation survive, the percentage ranging from 45 to 75 depending on the advance warning given. It is this group that is the major therapeutic problem. Attempts should be made to lower the 50 % death rate in the group receiving the approximate median lethal or sublethal doses of ionizing radiation, irrespective of the lethal factor concerned. Perhaps the greatest mortality factor in this phase is the susceptibility and development of infection incident to pancytopenia and more particularly to the impaired immune responses consequent to lessened antibody formation resulting from lymphocytopenia. Radiation not only damages the lymphocyte-producing tissue, but also kills or impairs these cells in the circulating blood. The lethal phases of hemorrhage, anemia and the electrolyte, water and acid-base disturbances are more easily controlled.

The favorable results obtained with nonspecific protein therapy by activation or stimulation of the reticulo-endothelial system are not new. The mechanism of stimulating the defensive system of the body is well established and the literature concerning its value in certain types of infection is abundant. Furthermore, certain nucleic acid salts have been widely used in the treatment of agranulocytosis with encouraging results.

The author reports the results of experimental studies following total body radiation and therapy with a lipo-protein nucleic acid complex. This substance, with the trade name "Reticulose," is free from sensitizing properties and on the basis of biologic experimentation and clinical experience over several years has been found to enhance and accelerate the leukocytic response, increase antibody production and stimulate phagocytosis. Berry and Mitchell in 1951, reported that their experimental animals were more resistant to infection after receiving this substance, and they supported all previous claims that this material stimulates leukocyte production.

As a result of this primary experimental study it is believed that in the treatment of the post-radiation syndrome, regardless of the source, Reticulose is of great benefit. This substance inhibited the leukopenia following radiation of 450 r and maintained the percentage of lymphocytes at a safer level, thus lessening the possibility of superimposed infection resulting from lymphopenia or lowered antibody activity. Also, the stimulating effect of this substance on granulopoietic activity was demonstrated in the hematologic phase of this experiment as well as in the histopathologic examination of the bone marrow in the series of rabbits given 450 r and subsequently treated. Furthermore, in the spleen of the treated animals more mature granulocytes were noted in the sections examined, and in the splenic sections of the group given only Reticulose (not irradiated) there was a striking hyperplasia of the reticulo-endothelial cells.

This protein substance is extremely stable at room temperature and is nontoxic. It may be given to human patients by intramuscular injections in dosages of 2 cc. every 3 hours. In the treatment of post-radiation injury the doses can be ascertained and adjusted by following the hematologic picture, and can be given when desired for increased stimulation of the reticulo-endothelial system.

Reticulose has been used with encouraging results in conjunction with the various antibiotics in the presence of infection, which further enhances its value in radiation injury. Two years ago it was used with success by the author in 2 clinical cases of postradiation injury following roentgen treatment for carcinoma, and it was because of the good results obtained in those cases that this experiment was undertaken. (Mil. Surgeon, Jan. 1952, Col. R. M. Thompson, MC, USAF)

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Aero Medical Association Meeting

Medical officers of many foreign air forces are expected to join hundreds of civilian physicians and United States Navy and Air Force flight surgeons at the forthcoming twenty-third annual meeting of the Aero Medical Association at the Statler Hotel in Washington, D. C., 17-19 March, which promises to be the most outstanding event in the history of this organization. RADM B. Groesbeck, Jr. (MC) USN is Vice President of the Association. CAPT J. L. Holland (MC) USN is Chairman, Scientific Program and Exhibits Committee for the meeting and CAPT Leon D. Carson (MC) USN is a member of the Executive Council.

In addition to a full program of scientific papers and exhibits depicting the latest trends and developments in aviation medicine, the social aspects of the meeting are being expanded and several innovations are planned for members and guests. At the "Honors Night" Dinner on 19 March, a speaker of national prominence will address the group and announcement will be made of the 1952 recipients of the Lyster and Longacre Awards which are given annually for distinguished contributions to aviation medicine. Admiral Groesbeck received the Lyster Award at the 1951 meeting of the Association in Denver.

In a recent statement, MAJGEN Harry G. Armstrong, USAF (MC), the Surgeon General of the Air Force, who is President of the Aero Medical Association, stressed the importance of this society in the field of aviation medicine. "Through its annual meetings, the Journal of Aviation Medicine, its awards and fellowships, and sponsorship of an Interim Board of Aviation Medicine," he said, "this Association has much to offer those doctors who are sincerely interested in this special field of medical science. From all indications, the 1952 meeting promises to be the greatest in the long history of the society."

Scientific papers to be presented by Naval medical officers at this meeting include the following:

"Preliminary Report on Physiological Negative G Studies on the 50-foot Centrifuge." LT J. E. Ziegler (MC) USN, 1ST LT R. L. Wechsler (MC) USAR, LT T. D. Duane (MC) USNR, LCDR E. L. Beckman (MC) USN - Aviation Medical Acceleration Laboratory, NADC, Johnsville, Pennsylvania.

"Involuntary Hyperventilation During Pressure Breathing at 43,000 Feet." LT A. L. Hall (MSC) USN - School of Aviation Medicine, NAS, Pensacola, Florida.

"Variability in the Tolerance of Adult Males to Positive Radial Acceleration." LCDR L. R. Stauffer (MC) USN - School of Aviation Medicine, NAS, Pensacola, Florida.

"Preliminary Studies on the Ease With Which Pilots Can Grasp and Pull the Ejection Seat Face Curtain Handles." LT L. B. Cochran (MSC) USN - School of Aviation Medicine, NAS, Pensacola, Florida.

"Exposure Hazards from Cosmic Radiation Beyond the Stratosphere and in Free Space." Dr. H. J. Schaefer - School of Aviation Medicine, NAS, Pensacola, Florida.

"Operational Aviation Medicine". CDR S. I. Brody (MC) USN - Air Development Squadron, NAS, Atlantic City, New Jersey.

"The General Practice of Training". CDR L. S. Beals, Jr. (MC) USN - Special Devices Center, Long Island, New York.

"Pathological Changes in the Central Nervous System After Negative G." Dr. H. Ratcliffe, University of Pennsylvania, and LCDR E. L. Beckman (MC) USN - Aviation Medical Acceleration Laboratory, NADC, Johnsville, Pennsylvania. (Surgeon General's Office, U. S. Air Force)

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Course in Medical Aspects of Special Weapons and Radioactive Isotopes; West Coast

A course in the Medical Aspects of Special Weapons and Radioactive Isotopes is scheduled to convene at the U. S. Naval Station, Treasure Island, San Francisco, California, on Monday, 3 March 1952, and continue to 7 March 1952.

The course will present problems likely to be confronted and technics to be employed by medical and dental officers in the field of radioactivity. The subjects will be presented by speakers of outstanding prominence in their specialties; hence, it is assured the presentation will be interesting and informative to all Medical Department officers. The purpose of this course is to provide volunteer reserve Medical Department officers, on the Pacific Coast who have had no opportunity to participate in previous naval courses, information and technics which are not available to them in their civilian capacity.

Although this course is conducted primarily for the benefit of inactive reserve Medical Department officers, a limited number of officers of the Medical Department on active duty may be given "Authorization Orders" (no expense to the government) in accordance with paragraph 3 of BuPers-BuSandA joint letter of 30 November 1951. Inactive reserve medical, dental, medical service corps, and nurse corps officers residing in the 11th, 12th and 13th Naval Districts who desire to attend this course should submit their request for 6 days training duty to the Commandant's office at the earliest practicable date.

It is desired to invite inactive reserve personnel's attention to the fact that acceptance of orders to attend this course WILL NOT, in any way, increase the possibility of involuntary recall to active duty of personnel concerned. Therefore, inactive reserve Medical Department officers are encouraged to take advantage of the opportunity to attend this course on active training duty orders in a pay status. (Reserve Div., BuMed.)

From the Note Book

1. RADM Lamont Pugh, Surgeon General of the Navy, recently visited Navy Medical Department facilities located within the 6th, 10th and 15th Naval Districts. CAPT Winnie Gibson (NC) USN, Director, Navy Nurse Corps, and LCDR R. T. Brooks (MSC) USN, Executive Assistant to the Surgeon General, accompanied Admiral Pugh. This trip is a part of the Surgeon General's continuing program of visiting Navy Medical Department facilities to meet and discuss with the personnel any problems they may have pertinent to the Medical Department of the Navy. (PIO, BuMed, 28 Jan. 1952)

2. RADM Alfred W. Chandler (DC) USN, Inspector General, Dental, and acting Assistant Chief, Bureau of Medicine and Surgery for Dentistry, attended the meeting of the American Denture Society and the Chicago Mid-Winter Dental meeting held February 2-7, at Chicago, Ill. Following the Chicago meeting, Admiral Chandler is scheduled to inspect the Dental Departments of the Naval Training Center and the Naval Hospital, Great Lakes, Ill. The Admiral, on this inspection has been accompanied by his Executive Assistant, LCDR J. J. Jacobs (MSC) USN. (PIO, BuMed, 16 Jan. 1952)

3. Communicable Diseases in Other Areas. Information has been received that an epidemic of poliomyelitis has been in progress in the Aachen area of Germany since January 5. There have been 20 cases reported with 3 additional suspect cases, with 2 deaths.

It has been reported to the WHO that the incidence of infectious hepatitis has been high in the German Federal Republic, and in recent months the disease has been increasing in frequency in the southern part of the Netherlands.

In Asia, Macau has at present not declared any locality infected with quarantinable diseases. The following measures would be imposed should any locality be declared infected: (1) Plague and typhus fever: no inoculation certificates are required, but arrivals from plague-infected or typhus-infected areas are subject to medical inspection; (2) Cholera and smallpox: all passengers and crew from cholera-infected areas are required to produce valid international certificates of inoculation against cholera, and those from smallpox-infected areas are required to produce valid international certificates of inoculation against smallpox. The certificate in case of either disease should have the number of the passport or identity card of the holder noted thereon (provided that such identity card is issued by or on behalf of the government and incorporates a photograph of the holder), or bear a photograph of the holder embossed or stamped with an official seal, and is signed or countersigned by a medical or health officer occupying an official position in the service of a government or municipal health department. (FSA, PHS, National Office of Vital Statistics, 24 Jan. 1952)

4. Lead glass fabric affords excellent protection against x-radiation. It may be used as a durable, flexible, cleanable garment, or in place of lead foil or lead rubber in superficial treatment. It may be used as a protective curtain and

is very efficient in protecting against beta radiation of atomic fission products. (JAMA, 12 Jan. 1952, V. W. Archer, G. Cooper, Jr., J. G. Kroll & D. A. Cunningham)

5. A review of the late results in the treatment of pulmonary tuberculosis by thoracoplasty in 2 series of patients will be found in the Journal of Thoracic Surgery, January 1952, by G. C. Adie, W. G. Childress, H. J. Brezing & D. Taylor.

6. CAPT P. E. Spangler (MC) USN, in the January 1952 issue of the Armed Forces Medical Journal, reports an interesting and encouraging method of "Local Treatment for Burns."

7. CAPT L. G. Bell (MC) USN and CDR F. V. Berley (MC) USN have recently been certified by the American Board of Surgery. CDR E. A. H. Gargiulo (DC) USN has been admitted to membership in the American Society of Oral Surgeons. (PIO, BuMed, 28 Jan. 1952)

8. A firm of dispensing opticans of London, England, has designed a spectacle for golfers having bifocal lenses with reading segments of miniature dimensions whereby the wearer is able to identify his ball and keep the score counted and at the same time enjoy almost a full field from the distance portion of the lens. (Brit. J. Ophth., Dec. 1951)

9. The American Heart Association announces awards of $185,650 to 37 Research Investigators for research needed for the development of new and improved methods of treatment, care and prevention of heart disease. These awards are the first of this year's allocations from contributions to the 1951 Heart Fund. (News Release, Am. Heart Assoc., 24 Jan. 1952)

10. For the second quarter of 1952, 221 of the most urgent hospital and health facility projects are scheduled for approval with the controlled materials available from Defense Production Administration. Of the total, 23 are new hospitals, 36 represent expansion of bed capacity in existing hospital facilities, and 121 are repairs or renovations needed to keep present hospitals in operation. Forty-one are non-hospital projects including clinics, health centers, incinerators, etc. When the 23 new hospitals and 36 additions are completed, they will add 4,300 beds to the Nation's total. (News Release, PHS, FSA, 15 Jan. 1952)

11. Protection gloves for workers in chemical plants are an improved type made of canvas coated with a durable vinylite resin that has high resistance to acids, solvents and abrasion. They are available in gauntlet and knit-wrist styles. (Science News Letter, 19 Jan. 1952)

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BUMED CIRCULAR LETTER 52-3 14 January 1952

From: Chief, Bureau of Medicine and Surgery
To: Commanding Officers, Naval Hospitals (Continental)

Subj: Cigarettes, donated and tax free; shipments of from tobacco companies

Ref: (a) BUMED Circular Letter No. 48-88

1. Reference (a) is hereby cancelled.

2. Commanding officers may continue to accept tax-free cigarettes donated and shipped by any tobacco company.

3. The tobacco-company donor shall address periodically a statement and schedule of intended donations to the Bureau of Medicine and Surgery (Attention: Public Information Officer). The donor then shall be furnished with an indication of the patient census of hospitals designated by the Chief, Bureau of Medicine and Surgery, to receive donations .

4. Tobacco products may be withdrawn from the factory by the manufacturer "without payment of tax, for delivery to hospitals operated by the Army and Navy for free distribution to patients in such hospitals," pursuant to Section 3331 of the Internal Revenue Code, Regulation 34, Treasury Department. To accomplish a withdrawal the donor shall forward to the commanding officer of the selected hospital, Internal Revenue Form 663 (Requisition for Withdrawal of Articles from Factory, Free of Tax, for Use of the United States), indicating the number of cartons to be shipped and delivered (in even hundreds of packages not to exceed one carton for each patient). The commanding officer shall sign and transmit this Internal Revenue Form 663 in duplicate to the Commissioner of Internal Revenue, Washington, D. C. Upon accomplishment of the described procedure, the donor may ship the donated cigarettes to the selected hospital as at present. A proper officer at the naval hospital receiving the donation shall complete in duplicate Internal Revenue Form 667 (Certificate of Receipt of Articles Withdrawn from Factory, Free of Tax, for Use of the United States). This certificate of receipt shall be executed and forwarded promptly to the manufacturer from whose factory the withdrawal was made.

5. In any case in which donations of cigarettes to patients of naval hospitals may accumulate in unusable and unreasonable quantities a report by the commanding officer to the Bureau is requested.

H. L. Pugh

The above letter will not be published in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-4 18 January 1952

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having a Medical Officer Aboard

Subj: Yellow fever vaccine; procurement of

Ref: (a) BuMed C/L 47-146
(b) BuMed C/L 51-100
(c) Art. 22-25 ManMedDept.
(d) Joint Army-Navy-Air Force Publication: "Prevention and Control of Communicable Diseases of Man-Immunization Procedures," NavMed-P-1340 (SR 40-230-1, AFR 160-102) of 8 October 1951

1. Reference (a) is hereby cancelled.

2. Yellow fever vaccine should be procured when needed from the nearest distribution center listed below:

Naval Medical Supply Depot, Edgewater, N. J.
Naval Medical Supply Depot, Oakland, California
U. S. Naval Hospital, Newport, R. I.
U. S. Naval Hospital, Portsmouth, N. H.
U. S. Naval Hospital, Camp Lejeune, N. C.
U. S. Naval Hospital, Oceanside, Calif.
U. S. Naval Hospital, Guantanamo Bay, Cuba
U. S. Naval Hospital, Guam, M. I.
U. S. Naval Hospital, Yokosuka, Japan
Disp., Boston Naval Shipyard, Boston, Mass.
Disp., Philadelphia Naval Shipyard, Philadelphia, Pa.
Disp., Norfolk Naval Shipyard, Portsmouth, Va.
Disp., Charleston Naval Shipyard, Charleston, S. C.
Disp., Puget Sound Naval Shipyard, Bremerton, Wash.
Disp., Long Beach Naval Shipyard, Long Beach, Calif.
Disp., Pearl Harbor Naval Shipyard, Pearl Harbor, T. H.
Disp., Naval Station, Rodman, C. Z.
Infirmary, Naval Station, Sangley Point, Luzon, P. I.
Infirmary, Naval Station, San Juan, Puerto Rico
Infirmary, Naval Air Facility, Port Lyautey, French Morocco
Infirmary, Naval Air Station, Jacksonville, Florida
Infirmary, Naval Training Center, Great Lakes, Ill.
Infirmary, Naval Training Center, San Diego, Calif.
Infirmary, Naval Station, New Orleans, La.
Infirmary, Headquarters Support Activities, Naples, Italy

Yellow fever vaccine may be procured either by (a) separate NavMed-4 requisition when ordering from Naval Medical Supply Depots, or (b) letter request to other distribution centers.

3. When appropriate and practicable the vaccine shall be procured from the nearest distribution center by having a responsible representative call for it in person with the requisition or letter request.

4. Reference (c) contains instructions for proper storage and shipment of yellow fever vaccine. The use of yellow fever vaccine must conform to the requirements established by the World Health Organization which have been recognized in the immunization directive, reference (d). Only medical officers can authenticate and validate the International Certificate of Inoculation and Vaccination, Form PHS-731 (IHR), and all transcriptions made from military immunization records for international travel. The Manual of the Medical Department is being modified accordingly.

H. L. Pugh

The above letter will not be published in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-5 21 January 1952

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: BUMED circular letters; cancelation of several

1. The following BUMED circular letters are canceled for the reasons indicated:

Cir Ltr	NDB issue & No.	Subject (in brief)	Reason
42-128	- - - - - - - - - -	Narcotic prescriptions - - - -	Covered by arts. 3-31 and 3-32, ManMed Dept.
43-146	- - - - - - - - - -	Donations of money to naval hospitals.	Covered by art. 25-11, ManMedDept.
44-30	- - - - - - - - - -	Medical stores; solicitation and acceptance of.	Do

Cir Ltr	NDB Issue & No.	Subject (in brief)	Reason
46-92	- - - - - - - - - -	Property; supervision, safeguarding, and accountability of.	Covered by arts. 25-6, 25-13(9), and 25-21, ManMedDept.
46-130	- - - - - - - - - -	Red Cross supplies and services; acceptance of.	Covered by art. 25-11, ManMedDept.
47-39	- - - - - - - - - -	Accounting instructions, medical supply depot equipment reclassified as supplies.	Covered by art. 24-27 (5), ManMedDept.
47-92	- - - - - - - - - -	Dental Department financial and property accountability.	Covered by ch. 6, ManMedDept.
48-26	- - - - - - - - - - -	Financial responsibility of Dental Department afloat.	Do.
48-65	- - - - - - - - - - -	Naval Medical Supply Depot, Oakland; mission of.	Covered by art. 25-24(3), ManMedDept.
48-67	- - - - - - - - - - -	Naval Medical Supply Depot, Brooklyn; mission of.	Do.
49-38	- - - - - - - - - - -	Orthopedic and prosthetic appliances.	Covered by art. 24-25 (3), ManMedDept.
49-101	- - - - - - - - - - -	Civil death certificates	Covered by arts. 17-20 and 24-25(4), ManMedDept.
49-149	Jul-Dec 1949, 49-813, p. 126	Special dental treatment at outlying stations.	Covered by arts. 3-15 (4), 15-25(1), 15-25 (10), and 15-25(11), ManMedDept.
50-21	Jan-Jun 1950, 50-127, p. 165.	Availability and requisitioning of first-aid kit, life boat, and first-aid kit, life raft.	Served its purpose.

Cir Ltr	NDB Issue & No.	Subject (in brief)	Reason
50-22	- - - - - - - - - -	Clinical boards; functioning of.	Covered by ch. 18, sec. IV, ManMedDept.
50-47	- - - - - - - - - -	do	Covered by art. 18-23(1)(d), ManMedDept.
50-66	Jan-Jun 1950, 50-481, p. 167.	BUMED circular letters	Served its purpose.
51-14	- - - - - - - - - - - -	Medical board reports	Covered by art. 18-12(1), ManMedDept.
51-27	- - - - - - - - - - -	Tuberculin testing of Navy and Marine Corps personnel.	Covered by arts. 15-91, and 23-158, ManMedDept.
51-33	- - - - - - - - - - - -	Standard Forms 88 and 89; use of.	Served its purpose.
51-51	- - - - - - - - - - - -	Hospitalization of dependents.	Covered by art. 21-11, ManMedDept.
51-83	- - - - - - - - - - - -	Fleet Logistic Air Wing - Medical Air Evacuation, NAVMED-1327	Covered by art. 23-41, ManMedDept.
51-101	- - - - - - - - - - - -	Tuberculin testing and chest x-ray findings.	Covered by arts. 15-91 and 23-158, ManMedDept.
51-130	- - - - - - - - - - - -	Naval cemeteries and naval plots in civilian cemeteries.	Covered by art. 23-159, ManMedDept.
51-137	- - - - - - - - - - - -	Quarterly Report of Medical Officer Personnel, NAVMED-1341.	Covered by art. 23-46, ManMedDept.

2. This letter shall be considered canceled after the above cancelation actions have been noted.

H. L. Pugh

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BUMED CIRCULAR LETTER 52-6 21 January 1952

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals and Hospital Ships

Subj: NAVMED-36, Ration Record

Ref: (a) BUMED Cir Ltr No. 51-116

1. In order to effectively utilize subject report in computing reimbursement estimates, paragraph 4 of reference (a) is modified as follows:

a. Under caption "Detailed Instructions Concerning Sections and Lines," add to lines 1, 2, 39, and 40:

"Report number of days this month in a leave status under Remarks."

2. In promulgating this modification it is assumed that personnel other than those reported on lines 1, 2, 39, and 40, under Column IIIb of the NAVMED-36, Ration Record, are in a leave status.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 52-7 21 January 1952

From: Chief, Bureau of Medicine and Surgery
To: ALL SHIPS AND STATIONS

Subj: Hospital Corps Personnel; comments concerning status of

Ref: (a) BuMed Circular Letter No. 51-53; NDB of 31 Mar 1951, 51-215
(b) BuMed Circular Letter No. 51-41; NDB of 28 Feb 1951, 51-136

1. Reference (a) is superseded and cancelled.

2. The following comments are made for information and guidance:

(a) With the release to inactive duty during 1952 of a large group of Naval Reserve hospital corpsmen, a great shortage of petty officers in pay grades E-6, E-5, and E-4 will develop. In order to assure that properly trained hospital corpsmen qualify for advancement to petty officer status, it is mandatory that all eligible hospital corpsmen complete their required training course at the earliest possible date.

(b) In order to provide the forces afloat with trained hospital corpsmen, it is desired that all graduates of a basic hospital corps school be assigned duty in wards, and rotated on the various services, for a minimum of 6 months. At the expiration of that time they should be given the opportunity for technical training.

(c) During the past year it has been found necessary to drop a large number of hospital corpsmen from technical training due to lack of interest, non-volunteers, failure to assimilate instruction, etc. This practice is a definite waste of time and money. It is directed that all applicants for technical training be interviewed, preferably by a representative in the specialty concerned, as well as by the personnel officer, who will explain the ramifications of such training and insure that the applicant is highly motivated, will have a good chance of completing the course, and be a good technician afterward. Also, each applicant must be a volunteer and it is suggested that an entry be made in his service record, over his signature, to the effect that he fully understands what he is about to undertake and that he does volunteer for such training.

(d) Only Group XI hospital corpsmen are to be assigned to dental activities. The provisions of reference (b) are still effective and requests for change of rate from Group X to Group XI should be screened to insure they meet the requirements. Requests that do not fully meet the requirements of reference (b) are neither desired nor indicated and should not be forwarded.

(e) It is noted that activities are still assigning technicians, who are in short supply and high demand, to non-technical billets. This practice is a waste of manpower and must stop. All medical department officers responsible for detailing hospital corpsmen shall review all assignments of technicians and insure their detail to their technical field. If there is a surplus over the technical requirement, the Commandant should be advised of this fact and then their utilization within the district will be at his direction. The same principle applies afloat, with the type command and service force commander performing the assignment function within their sphere of authority.

(f) With the limited number of female hospital corpsmen available, it is desired that they be assigned duty in dependents' services; then, if there is an excess of these personnel for that primary function, they should be assigned other general duties of a hospital corpsman. Assigning female hospital corpsmen to care

for female patients should minimize possible criticism of the Navy and the command in particular.

(g) Inasmuch as the Medical Clerical and Medical Property and Accounting classes have been discontinued indefinitely, it is necessary for all medical activities to institute an on-the-job training program to insure their billets in these fields are manned by competent personnel.

(h) Every effort should be exerted to assist Naval Reserve hospital corpsmen on active duty to qualify by examinations for transfer to the Regular Navy in their petty officer rate. This is a very logical field from which to fill vacancies in all petty officer ratings and must not be overlooked. Navy-wide examinations are held for all ratings, below that of CPO, twice a year and for CPO once a year.

(i) Due to the buildup of the Navy and the Marine Corps, it is now necessary to assign hospital corpsmen to duty afloat and in the field with the Marines with less time ashore than the normal 3 years. Some districts are affected more than others. The shore establishment exists solely to support the forces afloat and the shore duty for all hospital corpsmen will be reduced in the same proportion as the needs of the fleets increase. This is one fact that must be faced by all hands and considered when requesting retention of personnel for one reason or another.

(j) Whenever possible, within the existing personnel allowance, a training officer for Hospital Corps personnel should be appointed in order to insure maximum effort in the training of all hospital corpsmen attached. The proper guidance from this level will insure that instructors assigned will not consider this teaching problem as extra duty and will be motivated in their work, with a resulting advantage to the student as well as to the naval service. Medical Department Inspectors are requested to observe this teaching program and comment in their inspection reports as to the progress being made along these lines by activities within their jurisdiction. This is a responsibility of all hands and the Medical Department, as a whole, will benefit as a result of this effort.

(k) Technical training continues on a high plane and wide distribution of all information regarding such training is required to insure meeting large quotas assigned periodically. Only the best personnel should be selected for technical training. This policy will provide medical and dental officers with the best trained technical assistants and this, in turn, will be reflected in the care and treatment of the sick and injured.

H. L. Pugh

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BUMED CIRCULAR LETTER 52-8 21 January 1952

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: Hospitalization rates for fiscal year 1952; increase in

Ref: (a) BuMed Cir Ltr 51-92

1. The Bureau of the Budget has directed an increase in the interdepartmental rate for hospitalization to $13.25, effective 1 July 1951.

2. Accordingly, paragraph 2a of reference (a) is modified by the substitution of $13.25 in lieu of $12.25.

3. Supernumerary pay-patients currently being furnished in-patient medical care are subject to the revised rate, effective 1 February 1952.

H. L. Pugh

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