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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be nor susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Coxsackie Viruses in Clinical Practice

In 1948 in Coxsackie, New York, 2 patients paralyzed with anterior poliomyelitis were being studied by Dalldorf and Sickles, who were then attempting to adapt the poliomyelitis virus to a more suitable laboratory animal than the monkey. A filterable agent found to be pathogenic for suckling mice was isolated from the stools of these patients. Investigation of this agent showed that it caused skeletal muscle paralysis and necrosis in the mice within 2 to 10 days; and that the patient's sera, as well as pooled human serum or gamma globulin contained antibodies capable of neutralizing this agent. Subsequent virologic testing led these workers to conclude that they were dealing with an agent other than the already identified poliomyelitis virus, and it was later named the Coxsackie virus.

Further research made it evident that many viruses could be classed with the original one, and there emerged a classification of these agents into groups A and B on the basis of the type of lesion produced in suckling mice.

The group A viruses characteristically produced in the suckling mouse extensive lesions of skeletal muscle only, consisting of hyaline degeneration followed by necrosis and calcification; while the group B viruses caused skeletal muscle necrosis plus central nervous system lesions and visceral inflammations. These 2 groups at present include at least 15 immunologically distinct types, and others will undoubtedly be identified.

The existing classification of these types is cumbersome and complex, with each type individualized by a number, letter and number, or named in honor of the person or place associated with its isolation while the various types within one group have been related to only one clinical syndrome. It seems advantageous to avoid confusion and discuss this large number of viruses primarily in relation to their group classification of A and B.

Testing by both complement fixation and neutralizing antibodies has been employed to serologically identify and type these viruses, showing that the complement fixation tests are often heterotypic and of little value, while neutralizing antibodies are specific. The latter test, however, is awkward and suitable only for research purposes at present.

In an effort to determine the prevalence of infection with the Coxsackie viruses a number of serologic surveys were conducted, one of which revealed that 40 to 80% of those persons examined possessed neutralizing antibodies for any one of 5 types of the group A viruses. A similar survey of 150 people for one type of the group B viruses revealed an incidence of 77%. Thus it is obvious that these are extremely common viruses.

Coxsackie viruses have shown complete resistance to ether, penicillin, streptomycin, chloromycetin, and aureomycin but are inactivated by heating to 51 to 60° C. for 30 minutes. Re-infection with a specific type virus has never been demonstrated, but simultaneous infection with two different types has been carried out. These viruses appear to have a world-wide distribution, and have been isolated wherever a valid attempt has been made. From the present data there does not appear to be any sex or race differences in incidence; and they have been isolated from every age group, predominantly in childhood. Also, although they have been isolated throughout the year, most are found in the late summer. Spread seems to be by direct contact, with all susceptibles becoming infected, but only 30 to 50% exhibiting clinical symptoms.

At present there are only 2 diseases which have been related to Coxsackie viruses; namely, herpangina and epidemic pleurodynia.

In view of the fact that these viruses had been first isolated from poliomyelitis patients and were not uncommonly found in association with poliomyelitis, there was a great deal of speculation that they might play some etiologic role in anterior poliomyelitis, or in some way affect the severity of the paralysis in this disease. It seems clear from more recent work that the occurrence of Coxsackie viruses in poliomyelitis patients can be explained on the basis of chance, and that they do not alter the course of the disease.

Herpangina. --In 1920 Zahorsky first described a specific febrile disease of childhood; in 1924 he published an excellent clinical description suggesting the name herpangina for the syndrome. Until recently this work was lost sight of, and several papers described outbreaks of this summer illness without recognizing it. So accurate and complete was Zahorsky's original description that recent authors have been able to add little more.

The onset of this disease is abrupt, with fever often becoming quite high, sometimes accompanied by a convulsion. Malaise and anorexia are common and vomiting may occur. In many patients, headache is a prominent feature and this may be accompanied by abdominal and other pain. A mild sore throat which can be severe enough to lead to dysphagia is often present. The fever usually subsides within 48 hours and the patient is

typically asymptomatic a few days after onset. No abnormalities have been reported in the peripheral blood, urine, or roentgen studies; except for oral abnormalities described, the physical examination is usually normal.

Following the isolation of the Coxsackie viruses in 1948 there appeared many reports of outbreaks of herpangina with a high incidence of isolation of the group A viruses with type-specific neutralizing antibodies in the patients' sera. Although it could be said that these patients were infected with the group A virus and had herpangina, it was realized that these viruses were widespread and prevalent so that without an epidemiological study involving comparable segments of the population either in good health or with other disease, group A Coxsackie virus could not be established as the etiologic agent of herpangina.

Surveys established the group A Coxsackie viruses as the etiologic agents of herpangina; and, coupled with the previously discussed serologic surveys, indicated that herpangina is one of the most common minor febrile illnesses of children.

Pleurodynia. --Group B of the Coxsackie viruses also was found to produce a clinical entity, namely epidemic pleurodynia. This disease was first described by Daae and Homann in Norway in 1872 and appears to be occurring with increasing frequency in both the endemic and epidemic form. Although it has a wide distribution the greatest number of cases has been reported from the lowlands of Europe. Three hundred and fifty-eight cases were reported in North Amsterdam alone in the summer of 1951 with a group B Coxsackie virus isolated at the University of Amsterdam. One of the earlier epidemics occurred on the Island of Bornholm and the disease is frequently referred to as Bornholm disease. Other terms which have been applied to the condition are epidemic myalgia and devil's grippe.

Many mild cases of this disease occur and are characterized by a sudden onset, with fever, chest and abdominal pain, headache, and fatigability. The most prominent feature is usually the chest and abdominal pain which is related to respiration and often severe enough to lead to a pronounced sensation of difficulty in breathing. These symptoms may last for from 1 to 20 days and recurrences are fairly frequent causing a prolonged convalescence. Even with severe symptoms the disease is apparently benign and self-limited, no deaths having been reported. These symptoms are paralleled by many serious conditions such as biliary colic, pleurisy, appendicitis, myocardial infarction, et cetera, so that in an isolated case the diagnosis is difficult.

The present data relating the group B viruses to epidemic pleurodynia are not as complete as with herpangina. There have been a few outbreaks reported in the literature in which a group B virus was isolated and some serologic studies were performed. One of these consisted of a laboratory infection at Yale, with group B viruses, and resulted in symptoms of epidemic pleurodynia with complement fixation titer tests rising in all.

At present it can be said that the Coxsackie viruses are extremely widespread and that practically no one escapes infection with them even though only 30 to 70% of persons so involved exhibit clinical symptoms. (Ohio State M. J., Jan. 1954, J. L. Thinnes, Jr., M. D., The Christ Hospital, Cincinnati, Ohio)

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Diagnosis of Sprue

Sprue is a chronic, wasting disease which, in the light of modern medical science, is classified among the deficiency states and is amenable to replacement therapy with liver extract, folic acid, folinic acid, and vitamin B₁₂, in addition to a high-protein, high-vitamin, low-fat diet. Improvement includes reversibility of altered gastrointestinal function, of a megaloblastic marrow, and of altered metabolism; in other words, improvement in constitutional, gastrointestinal, and hematologic symptoms and signs, as well as in laboratory data.

The term sprue is intended to comprise the tropical and nontropical variety (idiopathic steatorrhea). These syndromes are believed to be manifestations or phases of one disease entity. The anatomic and physiologic alterations, the clinical course, and response to therapy are believed to be fundamentally similar. It is the author's impression, however, that what physicians living in temperate climates sometimes diagnose as nontropical sprue or idiopathic steatorrhea is actually a syndrome secondary to primary gastrointestinal disease, such as abdominal Hodgkin's disease, lymphosarcoma of the mesentery, amyloid disease, intestinal lipodystrophy, and tuberculosis. These conditions may give rise clinically to manifestations of water- and fat-soluble vitamin deficiencies. But the disease entity which is discussed in this article is a syndrome the etiology and modus operandi of which are still unknown.

The diagnosis of sprue was comparatively simple in the group studied. In the majority of cases a correct diagnosis was arrived at from the chief complaints alone. The author realized, however, that in private practice diagnosis may be difficult, as anemia may be present without marked lingual or intestinal symptoms, or vice versa. Likewise, gastrointestinal disturbances including diarrhea may be mild.

The author believes the diagnosis of the sprue syndrome is based upon the following criteria:

1. Insidious onset, chronicity of symptoms, and paucity of spontaneous remission.
2. Presence of stomatoglossitis, with or without atrophy of the lingual papillae.

3. Gastrointestinal disturbances ("dyspepsia," diarrhea, and steatorrhea).
 4. History of recent weight loss, accompanied by increasing weakness and prostration.
 5. The presence of free hydrochloric acid in the stomach in a high percentage (over 90%) of cases.
 6. The presence of a macrocytic, hyperchromic anemia, associated with a megaloblastic marrow.
 7. A flat glucose tolerance curve (oral).
 8. Absence of neurologic manifestations in the majority of cases.
 9. Hyperpigmentation of the skin, particularly the face, arms, and legs.
 10. "Inflammation" and atrophy of the gastric and rectosigmoid mucosa.
- Difference in degree of intensity and in frequency of these symptoms and signs may be quite variable in different individuals, but, in the author's experience during the past 20 years, a general uniformity about the clinical picture has been the rule; this was particularly true in the present group of patients. (Ann. Int. Med.; Jan. 1954, 4200 Pine St., Philadelphia 4, Pa., R. Rodriguez-Molina)

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Physical Properties of the Ballistocardiograph

The function of the ballistocardiograph is to detect and record the impulses produced by the changes in motion of the blood in the heart and vascular tree. Because the original impulses are transmitted through the body and recorded as movements of a ballistic system, it is likely that distortion may be present in the record. That such distortion occurs has been reported by Nickerson and Mathers who showed that the form of the ballistocardiogram depends on the ballistocardiograph with which the record is made. The results of an investigation of the physical properties of the body and of the ballistic bed to determine the quality of the various ballistocardiographs in present use are reported.

A sinusoidal force component of frequency n arising at the heart is transmitted outward through the body. This component may undergo in transmission an amplitude distortion (T_a) and a phase shift (T_θ). On arriving at the ballistic bed this altered component of the original impulse may again suffer distortion in amplitude (R_a) and a shift of phase (R_θ). If the recording system records the movements of the ballistic bed in a precise manner then the total amplitude distortion is given by the product $T_a \times R_a$ and the complete phase shift by the sum $T_\theta + R_\theta$. Furthermore, if the body and bed are simple oscillators the formulas for these distortions may be obtained from purely mechanical considerations.

Seven subjects whose ages ranged from 18 to 79 years were studied. One of these individuals had coarctation of the aorta. The other 6 subjects were classified as healthy on the basis of history, physical examination, electrocardiogram, and two-meter roentgenograms of the chest.

Displacement ballistocardiograms of each of these subjects in the resting state were recorded with 4 different ballistic systems. These systems were respectively: (1) the low-frequency, critically damped system; (2) a middle-frequency, partly damped system; (3) a high-frequency, partly damped system; and (4) a direct ballistocardiograph where the body alone is the oscillating system. The exact values of frequency and damping for each ballistocardiograph and the characteristics for each subject are presented.

The research presented in this article developed the view suggested by one of the authors (JLN) in an earlier paper that the ballistocardiograph should be considered as a system of coupled oscillators rather than as a single oscillating system. (Am. Heart J., Jan. 1954, J. L. Nickerson, Ph. D. and J. A. L. Mathers, M. D.; College of Physicians and Surgeons, Columbia University, New York, N. Y.)

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Bronchogenic Carcinoma

The incidence of bronchogenic carcinoma is increasing more than that of any other cancer in the body, a phenomenon that cannot be accounted for by the greater longevity which is responsible for the increase in the general incidence of cancer.

Cancer of the lung is primarily a disease of older people. In a series of 1,122 cases of proved bronchogenic carcinoma which the authors have seen, the largest number (38%) were in the sixth decade. Thirty percent were between 60 and 69, 19% between 40 and 49, 7% between 70 and 79, and 5% between 30 and 39. Bronchogenic carcinoma, therefore, becomes an extremely important factor in older persons. It is primarily a disease of males. In the authors' series, 89% of the patients were men. The white race is affected somewhat more frequently than the Negro race. In the Charity Hospital in New Orleans, to which white and Negro patients are admitted with about equal frequency, bronchogenic carcinoma represented 172 per 100,000 admissions in the white race as compared with 124 per 100,000 admissions in the Negro.

Bronchogenic carcinoma can be divided into 3 histologic types: epidermoid, undifferentiated, and adenocarcinoma. Epidermoid carcinomas represent the largest group. In the authors' series of 372 pulmonary resections for bronchogenic carcinoma, epidermoid carcinoma was found in 52.6%, an undifferentiated lesion in 23%, and an adenocarcinoma in only 19%. Adenocarcinomas occur relatively more frequently in women than in

men. Of the 326 men with bronchogenic carcinoma, 57% had epidermoid carcinomas, 28% undifferentiated, and only 15% adenocarcinoma. Of the 46 women with this condition, only 22% had epidermoid, 28% undifferentiated, and 50% adenocarcinoma.

Most bronchogenic carcinomas are located in the upper lobe bronchi. In the series of 372 resected cases, the upper lobe bronchi were involved in 56%, the left upper lobe in 29%, and the right upper lobe in 27%. The fact that the upper lobe bronchi are more frequently involved is important diagnostically because tumors in this location are difficult to visualize bronchoscopically and may sometimes be responsible for late diagnosis.

Diagnosis of bronchogenic carcinoma is not difficult if consideration is given to its possible presence and steps taken to prove or disprove its existence. Roentgenography is the most valuable diagnostic method because of the ease with which it is done and because of the high incidence of positive findings. A tumor large enough to produce a shadow in the lung field can be seen on roentgenograms and should always arouse suspicion. Although roentgenographic diagnosis is only presumptive, it calls attention to a lesion of the lung and suggests the need for additional investigation.

Positive diagnosis of bronchogenic carcinoma can be made only by demonstrating carcinoma cells in material obtained from the bronchus. Bronchoscopy, therefore, is indicated in all cases in which carcinoma is suspected. Unfortunately, over half the bronchogenic carcinomas occur in the upper lobe and occasionally in the periphery, so that the lesion is often beyond bronchoscopic vision. In the authors' series, diagnosis was made by bronchoscopic examination in only 36% of cases.

Careful cytologic examination of the sputum is extremely important in diagnosis. It makes little difference if the material is obtained by aspiration during bronchoscopy or by expectoration, as the finding of tumor cells makes a positive diagnosis of bronchogenic carcinoma. In the authors' experience, examination of sputum is more valuable than examination of material aspirated during bronchoscopy, for sputum is easy to obtain and examinations can be made much more frequently. In 68% of the authors' cases, a positive diagnosis of bronchogenic carcinoma was made on cytologic examination of the material obtained from the bronchi.

Thoracoscopic examination is of value as a prognostic, but not as a diagnostic, procedure. In any person in whom there is a possibility of spread beyond the lung to the pleura, such extension can usually be demonstrated by a thoracoscopic examination. It is used for diagnosis only in those cases in which there is a possible pleural extension. Aspiration biopsy is an excellent diagnostic method for peripheral lesions, but the authors are opposed to it because of the danger of implantation of tumor cells along the course of the aspirating needle. Because the authors believe that curability is definitely less when aspiration biopsy is used, they use it only in those cases which are obviously inoperable, but in which they wish to obtain a positive diagnosis.

Unfortunately, positive diagnosis can be made in only 80% of cases preoperatively. In approximately 20% it is necessary to use thoracic exploration, which the authors believe is a perfectly justifiable procedure when the diagnosis cannot be excluded by other means. At the time of exploration, a biopsy of the lesion, segmental resection, or lobectomy can be done, the section can be frozen immediately and the presence or absence of malignant disease determined as a guide to subsequent therapy.

The only curative treatment of bronchogenic carcinoma is the removal of the entire involved lung together with an en bloc dissection of all the mediastinal lymph nodes. Before such a procedure is done and particularly in older patients in whom pulmonary function may be diminished, careful pulmonary function studies must be made in order to determine whether the patient can tolerate a pneumonectomy. Only in those patients who could not tolerate such radical surgery is any operation short of a pneumonectomy permissible. (Geriatrics, Jan. 1954, A. Ochsner, M. D., P. T. DeCamp, M. D., and C. J. Ray, M. D.; Ochsner Clinic and Foundation Hospital, New Orleans, La.)

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Adenocarcinoma of the Urinary Bladder

Case reports of primary adenocarcinoma of the urinary bladder are few in number and reports of the long-term results of treatment by various methods are nonexistent in the English literature. It is, therefore, impossible to determine on the basis of past experience what constitutes proper therapy for this neoplasm. This article adds 7 cases of adenocarcinoma involving the urinary bladder to the literature and presents the criteria that the authors found useful in the classification of these neoplasms.

Adenocarcinoma involving the urinary bladder may be conveniently classified as follows:

1. Primary
 - (1) In a normally placed bladder
 - (2) In an exstrophied bladder
2. Urachal in origin
3. Metastatic or invasive from other organs

The average age of occurrence of primary adenocarcinoma in a normally placed bladder according to the literature is 59.8 years. The youngest patient was 24 and the oldest patient was 76 years of age. There is no apparent difference in sex incidence. Of the 14 cases of primary adenocarcinoma in the literature, 4 do not provide information as to the results of treatment. Of the 10 remaining cases, 7 are dead as a direct result of the disease (the longest survival was 1 year). Two of the authors' 4 cases in this classification are dead, 1 as a direct result of the disease with dis-

tant metastases and 1 as a result of postoperative infarction of the small intestine. Five cases from a total of 18 survived for from 10 days to 6 months without evidence of disease. Obviously this follow-up period is insufficient on which to base any conclusions as to the ultimate mortality rate or to furnish any objective evidence as to the proper therapy in this disease. However, it would appear that cystotomy with fulguration or transurethral fulguration is inadequate and that segmental resection is a minimal therapeutic procedure. Total cystectomy probably offers the greatest chance of cure.

Primary adenocarcinoma is usually located in the base or lateral walls of the bladder. The microscopic demonstration of a transition from non-neoplastic bladder epithelium to adenocarcinoma and the coexistence of cystitis cystica and cystitis glandularis confirm the presence of a primary neoplasm.

Adenocarcinoma of urachal origin involves the dome of the bladder. The muscularis is almost invariably involved to a greater extent than the submucosa. The mucosa may be intact or ulcerated. Cystitis cystica and cystitis glandularis are usually absent and, if present, are incidental lesions. Urachal adenocarcinomas often present a palpable suprapubic mass. (Cancer, Jan. 1954, 444 E. 68th St., New York 21, N. Y., J. D. Wheeler, M. D., and W. T. Hill, M. D.)

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Rupture of the Inferior Epigastric Vessels

Rupture of the inferior epigastric vessels is not considered a common lesion. Many of the standard texts on surgery entirely omit a description of this clinical entity, which is important chiefly because of the abdominal lesions with which it may be confused. This article states some of the diagnostic pitfalls and outlines several of the clinical clues which aid earlier diagnosis. Early diagnosis results in early treatment, and this will obviate many of the time- and effort-consuming laboratory procedures commonly undertaken when the patient presents himself to the surgeon. Therapy is relatively easy and so far as the literature attests, cure is permanent.

The average patient presents himself with the complaints of pain in either the right or left lower abdominal quadrant. Nausea and vomiting, anorexia, and constipation may be present. The onset may be sudden or gradual, depending upon the amount of bleeding.

Pertinent signs are confined to the abdomen. A tense, tender mass is most generally palpable either to the right or left of the midline in the lower abdomen. The mass is fixed, and there may be an associated spasm and rigidity of the muscles. Slight to moderate intestinal distention is not unusual. Peristaltic sounds may be hypoactive or not affected. Ecchymosis of the abdominal wall has been described, but was not observed in the authors' cases.

If a mass is palpable and remains so when the patient sits up, and cannot be moved from side to side, the diagnosis becomes more certain. This sign was first described by Fothergill.

Prostration and shock may be present, but are rare. Slight elevation in the temperature, pulse, and white blood cell count is the rule.

The lesion is said to occur primarily in the middle-aged patient. Signs of arterial and venous disease are often found. Laboratory and radiological examinations are not contributory, except in a negative way, to rule out other conditions.

Among the myriad intra-abdominal conditions confused with rupture of the inferior epigastric vessels are carcinoma of the colon with perforation, pelvic inflammatory disease, chronic appendicitis, cyst of the ovary, tumors of the abdominal muscles, mesenteric thrombosis, volvulus, intussusception, gallbladder disease, tubal pregnancy, degenerating fibroids of the uterus, abscess of the abdominal wall, muscle rupture, and in one of the authors' cases, incarcerated hernia. Bassett reports a case associated with intercurrent appendicitis.

Conservative treatment, consisting primarily of pressure with a tight abdominal binder, has been advocated by some, including Lichtenstein. The majority opinion, however, believes that direct surgical attack upon the bleeding point is the safest and surest therapy. A blood clot left in the tissues may cause chronic pain, abscess formation, and calcification. Operative interference, also, clearly obviates the occasional case of mistaken diagnosis, which in certain instances may be catastrophic. (Ann. Surg., Jan. 1954, S. D. Murray, M. D., and R. E. Burger, M. D.; Grace Hospital, Welch, W. Va.)

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Management of Recurrent Varicose Veins

It is an admitted fact that there is no guaranteed long-term cure for varicose veins. However, the trends of treatment are gradually producing an increasing incidence of good results. The general acceptance of the basic principle that, as a primary requisite, the great and/or small saphenous vein should be ligated and divided flush with the deep vein has produced many cures, or considerable improvement. Ten years ago, the operation of high ligation, with or without multiple lower ligations and the use of sclerosing injections, was thought to be the answer to the problem. In the interval, however, the large number of recurrences which have followed this procedure have greatly shaken this opinion. Surgical opinion has now turned to other more radical measures in an attempt to produce better results. At the present time it is the consensus of the majority of vascular surgeons that the operation of flush saphenous ligation (including the small saphenous vein where indicated) with stripping of each vein to the dorsum

of the foot is the procedure of choice. Again, no promise of permanent freedom from recurrence can be offered.

This article discusses a relatively large group of patients who have already undergone vein ligation but whose varicose veins have recurred. On examination they were separated into two main categories. The first group contained those in whom the initial surgery obviously did not conform to the basic principles mentioned previously. Examples are still encountered of relatively recent surgery performed by those with little understanding of the problem, where the ligation was performed well below the groin or where the surgeon contented himself with a local excision of a mass of varices. Such cases present no problem in management. It is the second category where, apparently, a proper proximal ligation was carried out but nevertheless recurrence has taken place, which presents the more difficult problem. The operations in this group had been performed by competent surgeons during the past 12 years. As a rule, subsequent to the return of these veins, multiple local injections were given, and the existing vein pattern became definitely bizarre.

As the result of a study of 32 cases belonging to the second category where reoperation was carried out, certain reasons for recurrence are cited. It is difficult to be specific in all cases as to the exact cause of the recurrences, and therefore the subsequent list contains only those in which the causative factor was relatively definite.

1. Despite an adequately high position of the groin incision, it was obvious in 4 cases that the saphenous ligation was made 1 inch or more distal to the saphenofemoral junction. The tributary veins remaining attached to the saphenous stump showed marked dilatation, and presumably allowed reconnection with this stump and the distal saphenous vein.

2. On re-exploration of the saphenofemoral area, it became obvious that the initial surgeon had ligated only one limb of a high division of the saphenous vein into the relatively common inverted-Y anomaly. The other limb of the Y remained patent.

3. Failure of the surgeon to identify and ligate an accessory saphenous vein was another cause. This abnormal branch, present in only 2 to 3% of individuals and seen in this series on 3 occasions, usually joins the great saphenous vein at its concavity just before its entrance into the common femoral vein.

4. Two cases were encountered in which the area of scarring about the saphenofemoral junction and the lack of the usual tributaries indicated that the surgeon had performed a proper ligation. A segment of vein had not been resected, and patency of the saphenous vein had again appeared. Catgut sutures had been used, and it is likely that this reopening was the result of absorption of the catgut ligature.

5. An incompetent small saphenous vein is too frequently missed in the initial assessment of the patient. It should be remembered that in 15 to 20% of patients with primary varicose veins, this vein is involved either solely or in conjunction with great saphenous incompetence.

6. The great majority of recurrences, 20 in this series, were the result of the missing, or the subsequent opening, of incompetent communicating veins between the saphenous systems and the deep venous circulation. The incompetent communicating veins result in recanalization of the original thrombosis, or dilatation and the production of varicosities in hitherto small superficial collateral channels.

In this catalogue of the causes of recurrent varicose veins, it was taken for granted that the varices associated with a previous deep phlebitis, congenital or acquired arteriovenous fistula, and cirrhosis of the liver had been ruled out. The author did not find the type described as arterial varices except in conjunction with a localized or generalized congenital arteriovenous fistula.

Further attention to the recurrent varicose veins is demanded by the patient for several reasons. The appearance of these deforming veins may be a primary factor, there may have been recurrence of eczema or ulceration, or the return of the symptoms originally experienced may bring the patient for further therapy.

The decision as to whether this further treatment should be conservative or radical depends, as originally, on whether a positive Trendelenburg test can be demonstrated. When this test is negative or doubtful for reverse flow on standing, then local injections of sclerosing fluid are all that is indicated. When it is obvious that the original valvular incompetence has recurred or persisted, local injections are merely temporarily beneficial, and further surgery is indicated.

This secondary surgery should consist of a re-exploration of the saphenofemoral junction to correct the possible faults in this area and a stripping of the existing principal superficial veins. Prior to operation, the small saphenous vein should be carefully inspected in the popliteal area. When dilated, this vein can be palpated when the patient is erect. When doubt exists as to its state of incompetency, exploration of this area is indicated. Re-exploration of the saphenofemoral junction can be a most difficult procedure. Scar obliterates the landmarks and especially the areolar tissue which sheaths the veins, making the dissection next to impossible. The recurrent veins in the scar are thin-walled, friable, and tortuous. Resulting bleeding harasses the surgeon. A technique is offered to facilitate this religation and to ensure a proper high ligation of the saphenous vein. (Surgery, Jan. 1954, J.C. Luke, M.D., Royal Victoria Hospital, Montreal, Quebec, Canada)

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 23, 1952.

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Aortic Arch Surgery

A new life-saving surgical technique has been developed and successfully used by surgeons of the Albany Hospital and Medical College, Albany, N. Y., and by staff surgeons of the Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md.

The new technique termed "blood shunt" was developed after several months of experimentation and was used in a recent 10-hour operation at the Albany Hospital. Three surgical teams, working in shifts, removed and replaced the aortic arch of a 24-year-old male patient who had a traumatic aneurysm. The damaged section was replaced by a freeze-dried graft of human aorta from the Tissue Bank of the Naval Medical School.

The patient, injured in an automobile accident, had a partially ruptured aorta. This partial rupture involved a 6-inch section of the great artery leading from the heart, which was ballooned out, forming a sac about the size of a large grapefruit.

In this operation the vital flow of blood was continued without interruption by the insertion of a two-branch plastic artificial aorta fastened into the walls of the patient's aorta by means of small preserved grafts of calf artery. After the graft was sewn into place, the plastic artificial aorta was removed and the patient's chest closed. He has since been discharged from the hospital, following an uneventful recovery.

This successful technique now makes available to surgeons a method by which further life-saving surgery can be performed on the aorta, without interrupting the flow of blood from the heart. (TIO, BuMed)

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Arterenol in the Treatment of Surgical Shock

Of all the objective criteria of the status of a patient in shock, the level of the arterial blood pressure is by far the most commonly used in estimating the clinical state and prognosis. This is reasonable, because the level of arterial tension is one of the major factors in the delivery of nutrient blood to the various organ systems. Hypotension of sufficient severity and duration is fatal. Thus all measures which will restore the blood pressure to normal have potential therapeutic usefulness. In most instances of surgical shock the restoration of fluid volume by use of electrolytes, plasma, blood, or colloids is adequate for the correction of the shock state. However, there is a significant group of patients in whom the response to infusion is slow in appearing or does not appear at all. Additional methods of treatment are necessary in this group and the most logical of these is the use of pressor drugs.

Most of the standard texts dismiss the use of pressor agents in the treatment of shock or generally deprecate their use as unphysiologic. There is little validity to this contention, because studies of drug action on normal animals and humans cannot be transferred to shock patients. For example, a drug such as l-arterenol which, in the normal human at normal intra-arterial pressures, diminishes cerebral blood flow cannot be said to do the same in a patient with markedly subnormal intra-arterial tension. Actually, the patient's improved mental status suggests that there is an improvement in the circulation. This improvement is a phenomenon observed with regularity. Similarly, although the total renal blood flow may be diminished in the normal human when given l-arterenol, the constant increase in urine flow indicates that in the shocked human the increase in blood pressure resulting from l-arterenol administration results in improved perfusion of the kidney. Similar reasoning applies to the coronary circulation where perfusion is so dependent on the aortic diastolic pressure.

When the clinical response of these patients as a group is viewed, several generalizations can be made. It can be readily observed that with the return of the blood pressure to normal the patient emerges from the symptom complex which characterizes clinical shock. The skin becomes drier and warmer, alertness returns, the pulse tends to slow, heart sounds become stronger, and the oliguria which is a constant concomitant feature of shock is replaced by an adequate urine flow.

The dramatic response of these patients is dependent upon the continuation of the infusion. Stopping it causes the reappearance of the hypotension and its satellite phenomena.

It is apparent, then, that the clinical manifestations of the shock state are directly dependent upon the level of intra-arterial tension. When this falls below normal, proper perfusion of tissues cannot occur, and the longer the resultant tissue anoxia lasts, the less likely is recovery. Thus it is the authors' opinion that the use of l-arterenol to maintain a normal intra-arterial tension has an important place in the treatment of shock. It is worth while to note that not one of the authors' patients remained oliguric while undergoing treatment. This form of treatment, if properly applied, may possibly prevent the development of "lower nephron nephrosis."

The dangers of the use of l-arterenol are inherent in the potent effect upon the peripheral resistance regardless of the cause of the shock. One is likely to be lulled into a false sense of security by the promptness of the clinical response. Thus, it is essential that the cause of the shock state be known and definitive therapy undertaken as quickly as feasible. It is of special importance to rule out hemorrhage as the cause of shock. Lost blood must be replaced, and continued bleeding must be stopped. Otherwise the patient will exsanguinate while appearing to recover.

Another possibility of danger to be considered is the use of l-arterenol during cyclopropane anesthesia. Animal experiments have shown that l-arterenol may produce ventricular fibrillation during anesthesia with cyclo-

propane as readily as epinephrine. The clinical aspects of this problem are dealt with at length in a separate report. Suffice it to state here that many of the authors' patients had cyclopropane anesthesia without any untoward effects. (Arch. Surg., Jan. 1954, R. E. Fremont, M. D., N. M. Luger, M. D., S. N. Surks, M. D., and A. Kleinman, M. D.; Halloran and Brooklyn Veterans Administration Hospitals, New York, N. Y.)

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Cystourethrocele Repair

Inefficient or incompetent urinary bladder function is an ever-prominent problem in gynecology. Since the early contributions of Kelly and Baldy many investigators both in this country and abroad have described different operative repair or reconstruction techniques in attempts to deal successfully with bladder, urethra, and/or terminal rectum herniation. Despite these widespread efforts, there has been too little emphasis on the frequently recurring problem of the patient who presents simultaneously two basic gynecological complaints: (1) a pelvic distress syndrome associated with a cystourethrocele and/or rectocele, and (2) concomitant pelvic pathologic changes which individually warrant surgical intervention.

Such patients have, on occasion, been subjected to one of three procedures. First, separate operations were performed at different times necessitating two different anesthetics. Second, both the abdominal and vaginal operations were carried out under the same anesthetic, the vaginal repair work initiated immediately following the termination of the necessary abdominal procedures. Certainly the combined procedure was a lengthy and exhausting one, not only for the patient, but also for the operating team. Third, the technique of vaginal hysterectomy was of major moment in solving the problems of combined pathologic changes when the abdominal component involved an operable uterus.

The technique emphasized in this article is suggested for those patients whose herniation symptoms exist to an embarrassing degree, yet in whom vaginal hysterectomy is not the operative procedure of choice due to the particular abdominal pathologic changes present. Examples of this type of situation would include those patients with excessively large uterine myomas, widespread previous pelvic infection, or endometriosis with resultant adhesions, and various types of ovarian tumors, such as a pseudomucinous cyst or a dermoid. No claim is made for originality of basic technique. Marek, Weinstein, Schaufler, and Macleod have discussed the basic technique in recent publications. These men, however, limited the abdominal approach to cystocele repair alone. It is perfectly possible to continue the surgery to include repair of a urethrocele at the time of the cystocele repair. Although this method of repair has certain restrictive limitations, the technique is a useful supplement to the routine gynecological armamentarium.

The operative technique involved in repairing a cystocele and urethrocele from above, and an evaluation of the results obtained with the technique are presented in detail. It is important to emphasize the fact that the surgical procedure is essentially uncomplicated, and that a clinically satisfactory result is entirely dependent upon successful surgical exposure of the operative site. The urethrocele repair is the simple continuation of a similar surgical technique to include the posterior leaf of the urogenital diaphragm.

The technique is of real value in operative cases in which a hysterectomy is indicated, but a vaginal hysterectomy is not considered the treatment of choice. The technique has been described primarily to fit this clinical picture. In addition, frequently abdominal exploration is indicated without the ultimate necessity of carrying out hysterectomy procedures as, for instance, in a case of widespread endometriosis or of a large ovarian cyst. If these patients have, in addition, the symptoms and pelvic findings associated with a cystocele and/or urethrocele, these hernias may be repaired from above, and a significant amount of operative time saved or even the possibility of two separate operative procedures avoided.

It is imperative that the anterior vaginal wall be examined subsequent to the completion of the abdominal procedures, before the anesthetic agent is discontinued. If the interrupted sutures used to repair the urethrocele have not been placed to within approximately 1 cm. of the urethral meatus, terminal sutures to complete the urethrocele repair may be necessary and can be placed immediately with a minimum of effort. Additional suturing will be necessary only when patients are excessively obese or when a lateral tear from the midline cannot be successfully exposed from above.

If the patient is in the premenopausal age group with satisfactory estrogen production, pelvic relaxation may not have become a problem, and physical findings associated with a cystocele may have remained of minimal import. If the potential herniation site is not repaired, many of the patients must return for further surgery subsequent to estrogen withdrawal, or gradually become pelvic cripples for lack of the contemplated surgery. Many a 5-year poor result has developed subsequent to satisfactory hysterectomy technique because the operator did not take the 5 minutes necessary to repair the potential herniation site, when surgical exposure at the time of the hysterectomy made the operative field easily available. This oversight usually occurs because the operator was not aware of the potential danger of the situation. (Am. J. Obst. & Gynec., Jan. 1954, W.H. Masters, M. D.; Washington University School of Medicine, St. Louis, Mo.)

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Effect of Oral Diamox on Intraocular Pressure

The recent availability of extremely potent carbonic anhydrase inhibitors suggested an exploration of the effects of such agents on the intraocular pressure and dynamics.

Diamox (2-acetyl-amino-1, 3, 4-thiadiazole-5-sulfonamide) has proved to be an effective inhibitor of carbonic anhydrase which can be administered with safety to human subjects. Because it inhibits renal tubular reabsorption of sodium bicarbonate, Diamox has received considerable attention as a diuretic for patients with congestive heart failure. In experimental animals it also inhibits gastric and pancreatic secretion.

Diamox was administered orally in single doses of 500 to 1,000 mg. to 19 patients. No side reactions or toxicity were noted following single doses, but 2 patients complained of paresthesias of fingers and toes after repeated administration. Tonometric measurements were made on all patients and in most instances tonographic tracings were obtained. There were included in this series 25 eyes of 15 patients with various types of glaucoma uncontrolled by conventional treatment. Ten eyes of 6 patients were considered completely normal.

It is evident that there was a pronounced decrease in intraocular pressure in every instance. Following a single administration of Diamox, the pressure began to fall in from 60 to 90 minutes, reached a minimum in from 3 to 5 hours, and returned to initial levels in from 8 to 12 hours. The intraocular pressure could be lowered just as promptly by a second dose. In general, the higher the intraocular pressure, and the lower the facility of outflow, the longer the time required for the pressure to fall to normal limits.

It is apparent that Diamox is an effective agent in lowering intraocular pressure. It should prove very useful preoperatively in glaucomatous eyes which fail to respond to miotics and other measures. It may also be of great help in tiding patients over acute inflammatory crises or traumatic episodes with secondary glaucoma. For example, one patient was so treated for traumatic hyphema and secondary glaucoma, and had no further elevations of intraocular pressure following cessation of Diamox administration.

Work is in progress to evaluate the feasibility of continued administration of Diamox in patients with chronic glaucoma.

It is important to note that the ocular toxicity of this drug has not yet been determined. It has been given daily to cardiac patients for periods as long as 14 months without reported untoward effects. A careful study of such patients for ocular complications would be most helpful. If it is to be used preoperatively in patients with glaucoma, the question of the possible increased risk of general anesthesia in Diamox-treated patients must be considered.

Most important will be the experimental investigation of the mode of action of this agent, whether it directly inhibits the secretory mechanism of the eye, or whether the fall in intraocular pressure is secondary to the induced systemic electrolyte alterations.

It is hoped that this preliminary report will stimulate the cautious use of Diamox so as to accumulate more rapidly a large clinical experience with this drug. (Am. J. Ophth., Jan. 1954, B. Becker, M.D., 640 S. Kingshighway, St. Louis 10, Mo.)

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Absence of Tonsils in Relation to the Incidence of Bulbar Poliomyelitis

The relationship of tonsillectomy to an increased incidence of bulbar poliomyelitis has been the subject of considerable controversy since it was first suggested by Ayer and Aycock and Luther. Anderson, Cuning, Krill and Toomey, Wesselhoeft, Toomey and Krill, Aycock, and Wilson are among those who agree that there is a predisposition to bulbar damage in persons who have had their tonsils and adenoids removed within 2 months of developing poliomyelitis.

While it appears that recent tonsillectomy, either in man or the experimental animal, predisposes to a high incidence of bulbar poliomyelitis, the suggestion has also been made that mere absence of the tonsils and adenoids, regardless of the time of their removal, leads to a greater risk of the development of the bulbar type of disease. Fischer and associates and Top and Vaughan were the first to investigate this aspect of the problem and came to the conclusion that the higher centers were more frequently involved in patients in whom the tonsils and adenoids were absent. In a study of 432 cases of acute anterior poliomyelitis, Lucchesi and LaBocchetta found that of those who had no tonsils at the time of this infection, 61% developed the bulbospinal and 76% the pure bulbar type. This was a much higher incidence of bulbar involvement than was present in patients who still possessed their tonsils and adenoids. This difference was apparent in all age groups. Seventy-eight percent of those who died of "infantile paralysis" had no tonsils or adenoids when they became ill.

In 1952, Top restudied this question in 1,947 patients with poliomyelitis who were admitted over a 10-year period to the Herman Kiefer Hospital in Detroit. In this group, 51.9% had no tonsils or adenoids when they contracted the disease. Of those who had bulbar disease, 85.1% had had tonsillectomy while of those who developed bulbospinal manifestations, 68.7% had been subjected to this operation. Only 45.6% of the nonparalytic and 43.1% of the spinal paralytic cases had no tonsils or adenoids. The fatality rate of 93.5% in tonsillectomized bulbar cases was very striking

and in marked contrast to the 56.9% of the patients with the bulbospinal type who died. The time elapsing between tonsillectomy and an attack of poliomyelitis was studied; the proportion of patients with a history of removal of the tonsillar tissue within 1 month of an attack was only 2.1% and for the period under 1 year, 8.3%.

The authors repeated the investigations of Lucchesi and LaBocchetta and of Top in order to determine whether the relation of absence of the tonsils and adenoids to increased susceptibility to bulbar poliomyelitis noted by these workers also applied to the patients observed by the authors.

The records of 800 cases of poliomyelitis were studied. All of them had (1) a clinical history consistent with the diagnosis of poliomyelitis, (2) physical findings indicative of infection of the central nervous system, with or without paralysis of varying degree and distribution, and (3) sterile spinal fluid which contained more than 10 white blood cells per cubic millimeter, an increased quantity of protein, and a normal sugar content. The type of disease was classified, according to the diagnosis recorded at the time of discharge from the hospital, into the following categories: (a) nonparalytic, (b) spinal paralytic, (c) bulbar--involvement of any of the cranial nerves or of the medulla or both, and (d) bulbospinal. Careful attention was paid to statements in the records regarding the presence or absence of the tonsils, their appearance, if still present, and to a history of tonsillo-adenoidectomy. All of the cases were also analyzed on the basis of age and sex distribution.

Patients who have had their tonsils and adenoids removed appear to be more susceptible, when they contract poliomyelitis, to the development of the bulbar and bulbospinal forms of the disease than those who still possess these lymphoid structures. This decreased resistance to the more serious types of infection is not related to the time at which tonsilloadenoidectomy was carried out and is not influenced, to any significant degree, by age or sex. The observations made in the present study confirm those of Lucchesi and LaBocchetta and Top. Because the total number of patients in these 3 investigations is large (3,179) and the results approximate each other so closely, especially for the pure bulbar form of poliomyelitis, the data have statistical significance. (J. Pediat., Jan. 1954, L. Weinstein, M. D., M. L. Vogel, M. D., and N. Weinstein, M. D. Massachusetts Memorial Hospital, Boston, Mass.)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Maryland, giving full name, rank, corps, and old and new addresses.

Tic of the Respiratory Muscles

Tic of the respiratory muscles without singultus is rare. The spastic movements may involve all or part of the diaphragm. When the contractions are sufficiently rapid, the disturbance is often referred to as diaphragmatic flutter. One case which has been repeatedly reported in the American literature has attained national fame.

Another group of respiratory disturbances is represented by tic of the intercostal muscles. It is even rarer than tic of the diaphragm. It produces a striking clinical picture which has been described in the German literature as "see-saw movement of the thoracic wall of noncardiac origin" or as "pseudopulsations."

Three cases of tic of the respiratory muscles are presented. Two of the cases were diaphragmatic flutter-fibrillations and 1 was a tic of the intercostal muscles. A discussion of these interesting disturbances based on the authors' cases and others reviewed from the literature is presented. Singultus was not included in this study.

In addition to the 3 cases reported, 17 cases of tic of the respiratory muscles recorded in the literature were reviewed. These 20 cases are comprised of 17 instances of diaphragmatic spasm and 3 cases of tic of the intercostal muscles.

The ages ranged from 9 months to 84 years. The incidence of respiratory tic was equal for males and females.

Some manifestations of respiratory tic such as "pulsations" of chest and abdomen, bruits heard over the chest in rapid and irregular sequence, and complaints of severe chest pain often cause such erroneous diagnoses as adhesive pericardial disease and aneurysm of the aorta, dissecting aneurysm, auricular fibrillation, and coronary occlusion. Such errors can be corrected on the basis of normal cardiovascular findings and discrepancies between the rhythm of the heart beat and that of the "pulsations" and sounds heard over the chest.

Once the movements of the chest and abdominal walls, and the auscultatory findings have been recognized as independent of the heart beat, tic of respiratory muscles is the most likely diagnosis. When the vibrations are most marked in the upper abdominal region and the sounds are best heard over the lower parts of the chest, diaphragmatic spasm is probably present. The diagnosis can be confirmed by fluoroscopic observation of rapid oscillations of the diaphragm. Fluoroscopy may at times reveal weak oscillations of the diaphragm, even when no vibrations are noticeable in the epigastric region.

Tic of the intercostal muscles is characterized by the peculiar see-saw movement of the anterior thoracic wall. This movement has a much greater tendency than diaphragmatic spasm to maintain the same rhythm as the heart beat for long periods of time. Eventually, however, an incon-

gruity between the "pulsations" of the chest and the heart action becomes manifest. This finding and the absence of other cardiovascular abnormalities point to the presence of tic of the intercostal muscles.

In a few instances it is possible to treat the cause of tic. Treatment of tetany, removal of a cervical rib or of a fractured xiphoid process are reported to have brought permanent relief from diaphragmatic spasm. On the other hand, administration of such drugs as dilaudid or luminal or inhalation of 10% carbon dioxide or avertin anesthesia at best caused only transient improvement. In one case of myogenic tic of the diaphragm, which persisted even after block of the phrenic nerve, quinidine seemed to have a favorable effect but did not give permanent relief. Faradic stimulation of the phrenic nerve was occasionally beneficial.

Prompt relief of diaphragmatic tic usually resulted from block of the phrenic nerves by procaine or freezing. However, the effect of block was usually short, although in 1 patient diaphragmatic tic did not recur for 7 months after freezing of the phrenic nerve. Section or crushing of the phrenic nerves usually produced only transient relief. Regeneration of the severed nerve fibers, as a rule, occurred within a period of 9 months. Spasm of the diaphragm can be relieved permanently only by total avulsion of the phrenic nerves. The inactivity of the diaphragm thus produced is usually well tolerated. Little is known about effective treatment of tic of the intercostal muscles. (Am. J. Med., Jan. 1954, W. Dressler, M.D. and M. Kleinfeld, M.D., Maimonides Hospital, Brooklyn, N. Y.)

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Physiological Responses to Parathion Exposure

Parathion is unique among the organic phosphate insecticides in that its absorption by man and animals leads to the urinary excretion of paranitrophenol, a specific metabolite readily detected in the laboratory. It also has a physiological effect, common to other phosphates, characterized by reduction of a vital tissue enzyme, cholinesterase, which may also be measured by appropriate laboratory methods. Measurements of the extent to which those effects of parathion absorption occur can be used successfully in the control of occupational hazards associated with the use of this extremely dangerous chemical.

Toxic effects from the absorption of parathion do not occur until the inhibition of cholinesterase activity has led to the accumulation in the body tissues of acetylcholine which normally is destroyed by that enzyme. This, coupled with the fact that the normal range of cholinesterase activity in unexposed persons is fairly broad and may be influenced by ingestion of other substances, invalidates a single blood cholinesterase activity test as a measure to detect parathion absorption. The test for urinary paranitro-

phenol, however, is not subject to this limitation and hence may be used with certainty to prove that parathion absorption has taken place. Nevertheless, when absorption of toxic quantities has occurred, the cholinesterase activity test, together with clinical signs and symptoms, will measure the extent and progress of the poisoning. Thus, it is apparent that both tests have important but somewhat different applications in this field.

In previous studies the authors have demonstrated the reliability of the urinary paranitrophenol test as an indication of exposure to parathion. At that time, the authors did not have the opportunity to compare paranitrophenol excretion with changes in cholinesterase activity of exposed persons. Hence, the studies reported herein were planned to show whether any correlation exists between reduced cholinesterase activity in blood and excretion of paranitrophenol in exposed monkeys; no adequate opportunity to correlate these data in man has yet been encountered.

The measurement of cholinesterase activity can be accomplished in several ways: (1) titration of CO_2 set free from bicarbonate buffer by the acetic acid resulting from hydrolysis of acetylcholine by the enzyme present in the sample; (2) determination of the amount of standard alkali necessary to maintain pH 7.4 throughout a given time unit in a reaction mixture of substrate and sample held at constant temperature; (3) electrometric determination of pH change per hour of the reaction mixture in a standard buffer (the widely used method of Michel); and (4) colorimetric measurement of the rate (micromoles per hour) of breakdown of acetylcholine bromide in a buffered reaction mixture. Because the last of these 4 methods has proved more reliable than the others in the authors' experience, all determinations of cholinesterase activity reported herein were made by the method of Hueriga, Yesinick, and Popper.

The method used in this investigation for determination of paranitrophenol in urine was that reported by Waldman and Krause.

Within limits imposed by individual variation among the animals used and by the size of dose administered, paranitrophenol excretion and reduction of cholinesterase activity following exposure to parathion were found to be reasonably well correlated but with one important exception, the lack of cholinesterase response during the first 24 hours after exposure. The response was of comparable character whether parathion was injected subcutaneously or applied to the shaved skin. Full restoration of cholinesterase activity after administration of a single dose was observed to occur either shortly before or coincident with cessation of paranitrophenol excretion.

Based upon their experience and the studies reported herein, the authors advance the following recommendations for the laboratory tests to be used in conjunction with clinical observations, environmental studies, and engineering measures in programs designed to control occupational exposures to parathion.

1. Whenever feasible, initial serum cholinesterase activity of each employee likely to be exposed should be determined prior to any exposure.
2. A parantrophol determination should be made on the first morning voiding of urine following any possible exposure. When the potentiality of exposure extends over any considerable time interval, frequent (daily when feasible) tests of this nature should be made.
3. Whenever excretion of parantrophol suggests absorption of appreciable amounts of parathion, serum cholinesterase activity should be determined every 24 or 48 hours to determine its trend.

Application of the foregoing recommendations should yield information of value in determining quickly the efficacy of measures to protect workers and provide for early recognition and prompt treatment of toxic exposures. (Arch. Indust. Med., Jan. 1954, R. K. Waldman, Dr. Chem., J. Lieben, M.D., and L. Krause, M.S.; Connecticut State Department of Health, Hartford, Conn.)

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Course of Instruction in Submarine Medicine

A course of instruction in submarine and diving medicine, available to regular and Reserve medical officers of the rank of LCDR and below, convenes twice annually on the first Monday in April and October. Applications to fill the quota for the 5 April class are currently desired, although medical officers completing their internship in June may submit their applications at this time for the 4 October class.

The course consists of 2 separate periods of instruction: (a) 2-1/2 months' diving training at the Naval School, Deep Sea Diving, followed by related medical instruction at the Experimental Diving Unit. Both of these activities are located at the Naval Gun Factory, Washington, D. C. (b) 6 months' instruction at the Submarine School for line officers (July-December 1954 class) supplemented with interfused medical instruction in submarine medicine at the Medical Research Laboratory. Both of these activities are located at the U. S. Naval Submarine Base, New London, Conn. Comfortable BOQ and family quarters are available to students and their families for this period.

Applicants must be physically qualified in accordance with Arts. 15-29 and 15-30, Manual of the Medical Department, and completed Standard Form 88 should accompany the application. The service agreement for this course has recently been reduced by BuMed Instruction 1520.3A, dated 22 July 1953.

On completion of training, graduates are generally assigned a 1-1/2- to 2-year tour of sea duty as staff medical officers to the various submarine squadrons located at Pearl Harbor, San Diego, New London, Norfolk, or Key West or to certain amphibious organizations in Coronado, Calif. and Little Creek, Va. Qualification to wear the submarine medical insignia can be acquired 1 year following graduation upon fulfillment of the requirements of Art. C-7309, BuPers Manual. Subsequent shore duty assignment may or may not include duty at submarine, diving, and medical research activities, or clinical assignments depending upon the desires of the individual and the needs of the Service. Two of the Navy's current submarine medical officers have received in the past a 1-year course of specialized instruction in atomic medicine, in preparation for duty with future nuclear submarines. Most of the submarine medical officer assignments, both afloat and ashore, entitle the incumbent to extra compensation in accordance with Arts. A-4302 and 4303, BuPers Manual.

Radical changes in future submarine design, advancing operational developments, and improvements in the techniques of submarine escape, deep sea diving, and underwater demolition activities offer challenging physiological, psychological, and human engineering problems. Toxicological and disease control studies peculiar to the submarine service offer excellent background training for future assignments to industrial medicine, preventive medicine, physiology, and medical research. The duties of a

submarine medical officer are by no means confined to these highly specialized problems. The clinical care of submarine personnel and their dependents in well-equipped submarine tenders and bases offer ample general and specialized medical and surgical practice.

Application for this course should be made by official correspondence to the Chief of the Bureau of Medicine and Surgery enclosing Standard Form 88 and the following service agreement: "I agree to remain on active duty for 9 months following the period of service for which I am currently obligated, or for 18 months following completion of this course, whichever is longer." (SubMedDiv, BuMed)

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From the Note Book

1. The Surgeon General has approved distribution of the Medical News Letter to personnel of the Foreign Operations Administration at various foreign missions. F. O. A. requested receipt of the publication as a medium of professional information for its personnel. The Surgeon General desires to extend his sincere welcome to F. O. A. with the hope that the News Letter will be informative and helpful to the recipients.

2. The Surgeon General of the Navy, Rear Admiral Lamont Pugh (MC) USN, has completed a 20-day informal visit to Navy Medical Department activities located in the Pacific Northwest, Aleutians, Korea, Japan, Guam, Kwajalein, Midway, and Hawaii. The purpose of this trip was to meet with Medical Department personnel in the field, to hear and to discuss their problems, to explain current Medical Department policy, and to obtain from the actual operating forces, information upon which to base future policy to guide the Navy Medical Department to a more effective and efficient unit within the Naval Establishment. (TIO, BuMed)

3. Captain Charles F. Gell (MC) USN, Director of the Aviation Medical Acceleration Laboratory, Naval Air Development Center, Johnsville, Pa., and Assistant Professor of Physiology at the University of Pennsylvania School of Medicine, has been selected as the recipient of the John Jeffries Award for 1953 "for outstanding contributions to the advancement of aeronautics through medical research." The award was presented to Captain Gell at the Honors Night Dinner of the Institute of the Aeronautical Sciences at the Hotel Astor in New York on 25 Jan 1954. (PIO, USNADC, Johnsville, Pa.)

4. Rear Admiral D. W. Ryan (DC) USN, Assistant for Dentistry and Chief of the Dental Division of the Bureau of Medicine and Surgery, has announced

the establishment of a basic indoctrination course for dental officers at the Naval Station, Naval Base, Norfolk, Va. This course, designed to acquaint newly reporting dental officers with the naval aspects of their duties and with the customs and traditions of the Navy, will be especially helpful to the increasing numbers of dental officers with no previous active duty experience who are called into the Navy under the Dentists and Physicians Draft Act. Similar courses of instruction have been conducted for some time at the Naval Training Centers, Great Lakes, Ill.; Bainbridge, Md.; San Diego, Calif.; and at the Marine Corps Recruit Depot, Parris Island, S.C. (TIO, BuMed)

5. A selection board to recommend USN and active duty USNR dental officers for promotion to Lieutenant is scheduled to convene in the Navy Department on 16 Mar 1954. Eligible officers will include Naval Reserve dental officers who reported for active duty prior to 1 Jan 1954, and whose dates of rank as Lieutenant, Junior Grade, are 3 June 1951, or earlier; and USN dental officers in the grade of Lieutenant, Junior Grade, whose line running mates have dates of rank of 3 June 1951, or earlier. (TIO, BuMed)

6. Three new publications in the field of environmental health are being issued by the Public Health Service of the U. S. Department of Health, Education, and Welfare. The publications are: Handbook on Sanitation of Airlines; Refuse Collection and Disposal for the Small Community; and Trailer Court Sanitation. (P. H. S., Dept. H. E. W.)

7. The "Report of the Thirty-Eighth National Conference on Weights and Measures, 1953," covers such topics as prepackaged foods, flour weights, automatic packaging machinery, livestock weighing supervision, electronic scales, technicalities in weights and measures court cases, the proposed international conference on legal metrology, the performance of inspectors and gasoline pumps, actions of the conference with regard to recommended methods of sale of anhydrous ammonia and other liquid chemical fertilizers with pressure characteristics, preheated fuel oils, peat moss in package form, rope, seeds (agricultural, horticultural, and floricultural), and pickles and pickle products in package form. (N. B. S.)

8. A review of primary malignant lesions of the thyroid which were observed, treated, and followed at the University of Minnesota Hospital over a 28-year period appears in Surgery, Jan. 1954, M. Cohen, M. D. and G. E. Moore, M. D.; Minneapolis, Minn.

9. In a series of 40 cases of fungous disease of bone, there were 23 cases of blastomycosis, 16 of actinomycosis and 1 of cryptococcosis. (Radiology, Jan. 1954, R. J. Reeves, M. D. and R. Pedersen, M. D.; Duke University, Durham, N. C.)

10. In 6 patients the cardiac work was determined in the resting recumbent position and again with the patient in an arm chair. In each patient the calculated cardiac work was less in the arm chair position. (Ann. Int. Med., Jan. 1954, W.S. Coe, M.D.; Louisville General Hospital, Louisville, Ky.)

11. As far as can be determined the third case of bleeding peptic ulcer with perforation in a newborn with recovery is reported in the Annals of Surgery for January 1954, by Lt. Col. W.H. Moncrief, MC, USA, of the Fitzsimons Army Hospital, Denver, Colo.

12. The clinical and epidemiological features of an outbreak of food poisoning resulting from the use of powdered-egg products in infant feeding is described in the American Journal of Diseases of Children for January 1954 by H. Abramson, M.D., M. Greenberg, M.D., C. Plotkin, B.S., and C. Oldenbusch, M.A. of the New York Department of Health, New York, N.Y.

13. The causes of failures of cataract operations have been studied from a standpoint of prevention when the cause can be recognized. The percentage of total failure in which the vision is less than 20/200 (6/60) is about 5% of all types of cataract occurring in both eyes, including all of the complicated cases. (Am. J. Ophth., Jan. 1954, D.B. Kirby, M.D.; New York, N.Y.)

14. A study of 39 prostates from autopsied males 80 or more years of age revealed an incidence of prostatic carcinoma of 48% in the 80 to 89 age group and 80% in the 90 to 99 age group. (Cancer, Jan. 1954, A.E. Hirst, Jr., M.D. and R.T. Bergman, M.D.; Los Angeles General Hospital, Los Angeles, Calif.)

15. An anatomically sound repair of hiatus hernia of the diaphragm with closure of the opening by sutures placed posterior to the esophagus is described in the Journal of Thoracic Surgery for January 1954 by C.R. Lam, M.D. and L.J. Kenney, M.D. of the Henry Ford Hospital, Detroit, Mich.

16. Despite a relatively severe influenza outbreak in January and February, the United States death rate for 1953 remained at the low level of 9.6 per 1,000 population, according to a preliminary estimate. This low rate has been achieved in only 2 previous years, 1950 and 1952, though the rate has been less than 10 deaths per 1,000 population since 1948. (P. H. S., Dept. H. E. W.)

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Recent Research Reports

Naval Medical Research Institute, NNMC, Bethesda, Md.

1. Nature of the Acetyl Cholinesterase Surface: I. Some Potent Competitive Inhibitors of the Enzyme. NM 000 018.06.28, 20 Oct 1953.
2. Provocation of the Shwartzman Phenomenon by Local Injection of Bacterial Filtrate. NM 000 018.05.04, 25 Nov 1953.
3. Inhibition of Agglutinin Formation. Memo Report 53-19 related to NM 007 081.12, 20 Oct 1953.
4. A Simple Cross-Transfusion and Perfusion Pump for Small Animals. Memo Report 53-21, NM 000 018.07, 3 Dec 1953.
5. Adsorption on Proteins and Interactions Between Protein Molecules in Solution. Memo Report 53-20 related to NM 000 018.06, 20 Oct 1953.
6. Reversible Association Processes of Globular Proteins. VI. The Combination of Trypsin With Soybean Inhibitor. NM 000 018.06.29, 20 Oct 1953.

Naval Medical Research Unit No. 3, Cairo, Egypt

1. Salmonellosis in Dogs: I. A Review of the Literature. NM 005 083.06.05 I; II. A Survey of Salmonella Infections in Dogs in Egypt. NM 005 083.06.05 II, 1953.
2. Isolation of Shigella Organisms From Dogs in Egypt. NM 005 083.06.06, 1953.
3. Preliminary Report on Trypanosomes From Southern Sudan Vertebrates. NM 005 050.39.11, 1953.
4. Summary of the Research Program of the U.S. Naval Medical Research Unit No. 3, Cairo, Egypt (Jan 1946-Dec 1953).

Naval Medical Research Unit No. 4, NTC, Great Lakes, Ill.

1. Miscellaneous Tests and Minor Investigations. NM 005 051.14, 1953.
2. Upper Respiratory Infections in Dental Personnel and Their Patients. NM 005 051.14.03, 25 Feb 1953.

Naval School of Aviation Medicine, NAS, Pensacola, Fla.

1. Construction and Validation of a Multiple-Choice Sentence Completion Test: An Interim Report. NM 001 077.01.02, 30 July 1953.
2. Applications of Multiple-Choice Speech Intelligibility Tests in the Evaluation and Use of Voice Communication Equipment. NM 001 064.01.19, 15 Nov 1953.
3. A Further Consideration of Peer Nominations on Leadership in the Naval Air Training Program: Prediction of Completion or Failure. NM 001 058.16.02, 12 Oct 1953.
4. Multiple-Choice Intelligibility Tests. NM 001 064.01.17, 1 Nov 1953.
5. Readability of NavCad Selection Tests. NM 001 057.16.05, 30 Sep 1953.
6. Vocational Interests of Naval Aviation Cadets: Preliminary Findings. NM 001 077.01.03, 31 July 1953.

Medical Research Laboratory, Submarine Base, New London, Conn.

1. A Preliminary Field Evaluation of the Relative Detectability of Colors for Air-Sea Rescue. NM 002 014.09.01, 23 Nov 1953.
2. A Helmet-Held Bone Conduction Vibrator. NM 003 041.21.10, Oct 1953.
3. Factors in Night Vision Sensitivity: III. The Interrelation of Size, Brightness, and Location. NM 003 041.09.05, 14 Sep 1953.
4. The Locus of Short Duration Auditory Fatigue or "Adaptation." NM 003 041.56.01, 22 Jan 1954.
5. A Photometric Survey of the Red Lighting Installation of the USS T-1, (SST-1). NM 002 014.08, 6 Jan 1954.

Naval Medical Field Research Laboratory, Camp Lejeune, N. C.

1. An Evaluation of the "Ace" Automatic Injector for the Parenteral Self Administration of Atropine Solutions. NM 005 052.08, Jan 1954.
2. Research Progress Reports, 1 Jan to 31 Dec 1953.

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BUMED INSTRUCTION 6222.5

12 Jan 1954

From: Chief, Bureau of Medicine and Surgery
To: Ships and Stations Having Medical Personnel Regularly Assigned
Subj: Treponemal Immobilization Test for Syphilis

This instruction describes the Treponemal Immobilization Test (TPI test) and sets forth the criteria and procedures for its use. Effective immediately BuMed C/L 51-59 and 52-29 are cancelled.

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BUMED INSTRUCTION 7000.2

15 Jan 1954

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals
Subj: Grave plots in civilian cemeteries, accounting for
Ref: (a) NavCompt Manual, Vol. 3, Chap. 6
(b) ManMedDept, Art. 11-19(m)

This instruction disseminates instructions for establishing a uniform procedure in accounting for grave plots in civilian cemeteries.

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BUMED INSTRUCTION 6120.8

19 Jan 1954

From: Chief, Bureau of Medicine and Surgery
To: All Continental Stations Having Medical Corps Personnel Regularly Assigned

Subj: Reports of Periodic Physical Examination; preparation and submission of

Ref: (a) Section 0942, Naval Supplement to the Manual for Courts-Martial, 1951

This instruction provides information relative to the submission of subject reports.

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AVIATION MEDICINE DIVISION



The Naval Flight Surgeon and Naval Aviation Safety

The impact of the high performance aircraft of the present and future on the practice of aviation medicine is being felt by flight surgeons throughout the military services. The fantastic cost of accidents in current models of service aircraft has added an economic factor such as injury, death, operational effect, public relations, and many others which make up the complex problems of aircraft accidents. Naval aviation is taking a long, hard look at the aviation safety program, and naval aviation medicine also should not neglect this opportunity to study closely the aero-medical aspects of this problem.

The recognition of the fact that aviation medicine is a full-time specialty has recently been accomplished by the provision for certifying specialists in aviation medicine by the American Board of Preventive Medicine. This recognition should encourage career flight surgeons to study the many aspects of their specialty and in doing so, they should consider carefully the problem of aviation safety. It is hoped that flight surgeons will throw their

full effort into aviation medicine in general, and aviation safety in particular. The feeling prevalent in the past that a flight surgeon should take leave from this field, sometimes temporarily, but usually permanently, to devote his time to another specialty should be reduced. This recognition should also lead to an increase in the number of highly qualified flight surgeons in close touch with the current aspects of their specialty. Certainly to meet the challenge of the future, aviation must have greater participation by the medical profession.

It is not necessary to review the history of aviation medicine to impress upon the flight surgeon his importance and responsibility in aviation safety. However, in recent years the requirement for information by the designers of aircraft and airborne equipment has increased at a tremendous pace. Interest in aviation safety from the standpoint of accident prevention by clinical aviation medicine is not enough. The flight surgeon-aviator relationship is to be encouraged, but in addition, it must be clearly understood that active participation in safety, training, survival, and accident investigation is necessary. It may not be clearly understood by many flight surgeons in the field that the primary source of information available for the evaluation of many types of airborne equipment, such as exposure suits, ejection seats, et cetera, is the Medical Officer's Report of Aircraft Accident. Both negative and positive information is needed in these reports, and what may seem like a routine unimportant accident report may provide the required information necessary for the evaluation of a valuable piece of equipment. When a flight surgeon wonders why a particular piece of equipment has not been developed or modified, he should ask himself, "How many reports have I submitted describing what is needed and why?" Any program of crash injury research, flight equipment research, and research in the area of physiological or psychological causes for pilot error is necessarily limited by the quality and quantity of information submitted.

An example of the lack of, and the need for, information is forcefully presented by the following illustration. Airborne equipment designers are constantly endeavoring to improve flight clothing. One important aspect has always been the protection that clothing gives from fire. Therefore, information has been requested concerning the effectiveness of present type clothing in accidents involving fire. This important question cannot be adequately answered, for very few reports have been made which indicate specifically what the aviator was wearing or what effect it had.

Information on specific pieces of equipment or safety procedures is often much easier to report than the more intangible aspects of pilot error accidents and crash injury. Nevertheless, the flight surgeon's opinion in these latter areas is needed. Prevention of the accident must retain its proper high priority relationship to the need for protection and equipment after the accident has occurred. It is recognized that reporting the intangible and supporting it with logical facts, is not the path of least resistance when trying to get a report signed by a Commanding Officer. Therefore,

it is most important that the flight surgeon not take the easiest way out and submit only the minimum information just to avoid controversy. Abstract, irrelevant information, and photographs are not desirable or helpful, but detailed pertinent facts relating to the subjects listed on the present reporting forms would fill the heart of the bio-statistician with joy.

The future will bring improved reporting forms, improved basic instruction for flight surgeons, and a manual for the medical officer who is required to investigate aircraft accidents. However, until these are forthcoming, flight surgeons must make the best use of these tools presently available to them.

It is widely accepted that Navy flight surgeons attached to operational units should spend approximately 50% of their time in their primary duty. Much of their effort should be directly or indirectly aimed at improving aviation safety. The station- and ship-based flight surgeons should assist flight surgeons attached to fleet units by providing adequate equipment, and an adequate library of aero-medical publications with particular emphasis on the many official Navy publications. While not all inclusive, the following list of publications will be most useful to the flight surgeons in respect to aviation safety:

1. Naval Aviation Safety Bulletin (weekly)
2. CNO Medical Safety Bulletin (monthly)
3. Naval Aviation News (Grampa Pettibone)
4. File of pertinent OpNav instructions relative to aircraft accident reporting, flight operations, and oxygen training.
5. File of pertinent Bureau of Aeronautics technical orders and notes covering safety and survival equipment such as parachutes, safety harnesses, ejection seats, life rafts, exposure suits, et cetera.
6. "Sense Pamphlets" on appropriate subjects.
7. U. S. Navy Medical News Letter (Aviation Medicine Supplement every 2 months)
8. Journal of the Aero Medical Association

Familiarity with these publications will increase the awareness of the flight surgeon to his most important and ever-increasing responsibility in the field of aviation safety.

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Flight Time

It has been reported that there are some who believe that OpNav Instruction 3710.15 of 19 November 1953, entitled "Policies, Standards, and Regulations Concerning Proficiency Flying," does not apply to the average flight surgeon. They have voiced the opinion that the instruction applies only to naval aviator flight surgeons.

This is an erroneous assumption and such a rumor must necessarily be checked. The following is quoted from paragraph 4 of the instruction:

" . . . The instructions contained herein apply . . . , to flight surgeons when assigned to duty in a flying status involving operational or training flights, and to all ships, stations, units, and activities of the Navy and Marine Corps which operate aircraft for flight proficiency purposes."

In other words, it applies to all flight surgeons on flight status drawing flight pay. What could be clearer?

Sections "d" and "e" of paragraph 6 outline the requirements for flight time for surgeons as follows:

"d. Flight surgeons, when assigned to duty in a flying status . . . , will, if over age fifty (50), comply with the following minimum training requirements:

Total flying hours per fiscal year	48
Night flying hours per fiscal year	7
*Night flying hours each 6 months	3
*Hours observing instrument flight, actual or simulated, each 6 months	5

*Requirements effective after 1 January 1954

"e. Flight surgeons, when assigned to duty in a flying status . . . , will, if under age fifty (50), comply with the following minimum training requirements:

Total flying hours per fiscal year	90
Night flying hours per fiscal year	15
*Night flying hours each 6 months	6
*Hours observing instrument flight, actual or simulated, each 6 months	10

*Requirement effective after 1 January 1954"

You will note that the word "minimum" is underscored in each section. Figures shown above are the basic requirement for naval flight surgeons, and it is expected that each medical officer with orders to duty involving flying will more than just meet these minimum standards.

It is a well known fact that only by personal observation and experience can the flight surgeon maintain his professional acuteness and proficiency. The purpose of having flight surgeons who fly as medical observers in the various types of aircraft is to help keep him abreast of the advancing aeronautical sciences and to have him experience the same tensions and difficulties that confront the aviator. A good flight surgeon "knows" the men he is responsible for, and they "know" him. He also is in full knowledge of the complaints and adversities his men have. He understands their "language" and can talk with them freely concerning their anxieties and complaints. He can readily make suggestions and even supply the "know-

how" to aid his pilots in developing airborne personnel equipment and other gear applicable specifically for the type of plane or situation peculiar to his unit.

How best can a flight surgeon become and remain conversant with the aviator's troubles and needs if he does not accompany him on flights of all different types? To experience the sensations of instrument or night flight, you must fly under instrument conditions or at night. Those few flight surgeons who heretofore have diligently avoided anything but a fair-weather, daytime flight have been flight surgeons in name only.

With the advent of this instruction, it is the responsibility of each flight surgeon to see that hereafter all entries in his log book will conform to OpNav Instruction 3760.5, of 11 December 1953, entitled, "Classification of Flight by Navy Aircraft." The entry shall be identical to that of the pilot and co-pilot of the aircraft except that the total flight time of each flight shall be listed as "Special Crew" time.

Heretofore, many flight surgeons have been rather careless in keeping an accurate log book, and many have only listed the minimum requirement of 4 hours for any one month and have failed to list many other hours of flight, having once logged in the basic minimum. This is no longer an acceptable practice. Each medical officer with flight orders is urged to maintain a complete and accurate flight log book, entering each flight made, the date, model of aircraft, Bureau number of aircraft, character of flight, total time of flight, and any other pertinent information. It is considered good practice to enter all night flights in red ink.

It is anticipated that in the near future a BuMed instruction will be promulgated concerning the reporting of flight time by Medical Officers on flight status, and a rather simple form will be available for this reporting. With the proper keeping of flight logs, this semi-annual report should prove to be a simple procedure.

Minimum requirements for flight time are now mandatory, and each flight surgeon with flight orders is under obligation to meet those requirements.

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1954 Aero Medical Association Meeting

The Aero Medical Association will hold its 25th annual meeting at the Hotel Statler, Washington, D. C., on 29-30-31 March 1954. Registration begins at 1300 on Sunday, 28 March. Colonel Robert J. Benford, USAF (MC), as Chairman of the Scientific Program Committee, has gathered an outstanding group of professional men to read their papers before the society. The Navy, Air Force, Civil Aeronautics Administration, and the Royal Canadian Air Force are all hard at work producing scientific exhibits. The leading commercial drug and equipment companies will display their latest advances in medicines and equipment pertaining to aviation.

The Wives' Wing of the Association has produced an extremely attractive program for the ladies who will attend. The events include a luncheon, several tours to places of national interest, et cetera.

The social program for members will include the business luncheon and the "Honors Night" Dinner. A number of new events will be featured during this year's convention that cannot be publicized at this time.

The Assistant Secretary of Defense for Health and Medical Affairs has reviewed the scientific program and has recommended that the Secretaries of the three Armed Services grant retirement point credits to inactive Reserve officers attending this meeting. This is the first time that Reserves have been given credit for attending an Aero Medical Association meeting, and places that organization on a par with the Military Medicine Section of the American Medical Association meeting and the annual convention of the Association of Military Surgeons of the United States.

It is hoped that military air transportation for many active duty flight surgeons can be made available. All flight surgeons are urged to make every effort to get to Washington and attend this meeting. Here you will have the opportunity to see more fellow flight surgeons than at any other time.

Make plans to be present and to participate in the scientific deliberations and social events. Bring your wife to meet the members of the Wives' Wing; she will enjoy the events the ladies have planned for her pleasure.

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Defects Noted on SF-88's Submitted to BuMed:
December 1953 and January 1954

Omissions	152
Excess copies	143
Carbon copies not legible	166
Lack of copies	69
Carelessness in recording results	43
No designator after rank	25
Flight time omitted	73
Not fully explaining dental defects of NavCad applicants	11
Not recording C. E. R. and improperly placing pulse in spaces	41
Refractions not properly recorded	25
Not leaving right side in column 73 for BuMed endorsement	15
Failure to state aviator's service group in recommendation	39
No reason given for hospitalization	5
Not clarifying or going into enough detail regarding medical defects ...	19
Failure to mention disqualifying defects on SF-89	2
Failure to submit SF-89	1
Failure to state purpose of physical examination	1

Book Review"Abstracts on Military and Aviation
Ophthalmology and Visual Sciences"

Doctors Conrad Berens and L. Benjamin Sheppard have collaborated to produce this compilation of some 2,500 abstracts of all the important professional literature concerning the visual sciences and military and aviation ophthalmology. The first of 2 volumes covers a period that includes the nineteenth century and the years from 1900 through 1940. In this volume of more than 550 pages, the abstracts are grouped into 93 categories, alphabetically arranged and fully indexed in a complete table of contents. The second volume of military and civil aviation ophthalmology abstracts including literature on the visual sciences is devoted to articles appearing during the years of 1941 through 1945. Study, compilation, and preparation of the third volume is in progress and will cover the years of 1946 through 1952. Subsequent volumes will be produced at the Ophthalmological Foundation, Inc., under the personal direction of Dr. Berens.

Volume II of 450 pages also indexes the abstracts into 93 categories. Both volumes contain a key to abbreviations of names of periodicals listed in the abstracts.

An unbelievable amount of effort undoubtedly was expended over a number of years in order to produce these 2 volumes. The authors, long distinguished in their field, have rendered an invaluable service to military and civil physicians, particularly those engaged in the specialties of ophthalmology and the other visual sciences as well as aviation medicine.

The literature abstracted covers all phases of military and aviation ophthalmology, both the normal and the pathological. The researcher, as well as the clinician, will find these volumes a complete, well-organized guide to the world's literature dealing with military and aviation ophthalmology in the most comprehensive and authoritative manner ever attempted.

The editorial plan embraces a systematic, world-wide review of the entire literature in the biological, physical, chemical, and related sciences. Because these volumes include important work accomplished during the war years, they contain much material which had been restricted or has not been generally available.

The abstracts are clearly and concisely written to the extent that, for the most part, reference to the original source is generally not necessary in order to fully understand the subject. Diagnostic methods and all forms of therapy, corrective measures, and operative techniques are thoroughly explained.

Although military and aviation ophthalmology naturally includes the entire field of ophthalmology, the only general references which have been included concern the diagnosis and methods of treatment of certain eye diseases and eye injuries. Standard procedures described in textbooks of ophthalmology have not been listed but review of certain textbooks have been included.

The naval flight surgeon should have available to him these abstracts for ready reference. All military institutions wherever military ophthalmology is practiced as a specialty and laboratories doing aviation medicine research and development, undoubtedly have a constant demand for the use of these volumes. All adequate medical libraries of the military should contain these 2 volumes.

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Aviation Medical Officers Decorated

Belated congratulations to Captain Warren E. Klein (MC) USN, for receiving the Legion of Merit medal with a Combat "V", "For exceptionally meritorious conduct in the performance of outstanding services to the Government of the United States as Senior Medical Officer of the First Marine Aircraft Wing in connection with operations against enemy aggressor forces in Korea from 28 September 1951 to 16 August 1952. Exercising outstanding skill and exceptional foresight throughout this period, Captain Klein improved and developed the medical facilities of the command to a high state of efficiency and effectiveness. Initiating a program of assistance and cooperation with other military and civilian health agencies, he greatly aided in improving the health and welfare of military personnel and of the indigenous population residing near his unit. Through his efforts, a medical society of civilian and military representatives was organized for the purpose of stimulating cooperation and mutual exchange of medical information. A capable and industrious officer, he rendered invaluable assistance to the Commanding General in formulating plans and executing programs for medical treatment within the command. His marked professional ability, resourceful initiative and unswerving devotion to duty throughout reflect the highest credit upon Captain Klein and the United States Naval Service."

Commander Calvin T. Doudna (MC) USN, was awarded the Legion of Merit medal with the Combat "V", "For exceptionally meritorious conduct in the performance of outstanding services to the Government of the United States as Senior Medical Officer of the First Marine Aircraft Wing during operations against enemy aggressor forces in Korea from 25 July 1952 to 8 May 1953. Responsible for the health and welfare of a major tactical command, Commander Doudna labored untiringly to protect military personnel from the many epidemic diseases prevalent in the forward area. Maintaining close liaison with Korean health agencies and the medical authorities of other services, he instituted a communicable disease control program that drastically reduced the incidence of endemic infection with the command. A highly capable executive, skilled in aviation medicine, Commander Doudna successfully coordinated the activities of eight widely separated medical facilities and, by his judicious assignment of personnel, equipment, and supplies, provided optimum care for the sick and wounded and insured the

highest standard of health among combat pilots. His outstanding professional ability and unfailing vigilance in safeguarding the health of the command contributed materially to the combat effectiveness of the Wing in its operations against the enemy. By his exceptional resourcefulness, leadership and selfless devotion to duty, Commander Doudna upheld the highest traditions of the United States Naval Service. "

Commander Doudna was also awarded the Air Medal, "For meritorious achievement in aerial flight while attached to the First Marine Aircraft Wing during operations against enemy aggressor forces in Korea from 1 August 1952 to 3 February 1953. Completing twenty missions during this period, Commander Doudna participated in daring flights over an active combat area in the face of grave hazards. His skill, courage and devotion to duty throughout were in keeping with the highest traditions of the United States Naval Service. "

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