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Description of contents

(1) Box no. 2818

(2) Folder title/number: (2)
Surgeon's Circular Letter (A Far East Periodical of Medical Department Information) - Vol. IV Nos. 6,7,10,11

(3) Date: July 1949 - Nov. 1949

(4) Subject:

| Classification | Type of record |
|---|---|
| 032.2, 750 | t |

(5) Item description and comment:

(6) Reproduction: (Yes) No

(7) Film no. Sheet no.

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# MED. SEC. GHQ. FEC.

VOL IV NO 11
1 NOV 1949

A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

# SURGEON'S CIRCULAR LETTER

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## MOS's AND TITLES NORMALLY PERTAINING TO THE MEDICAL DEPARTMENT

(Ref TM 12-406 and TM 12-425 A)

2110 Adjutant or Adjutant General (MSC)
2120 Administrative Officer (MSC)

2200 Military Personnel Officer (MSC
2201 Personnel Assignment Officer (MSC)
2205 Director of Personnel (MSC)
2210 Classification & Assignment Officer (MSC)
2231 Research Psychologist (MSC)
2232 Clinical Psychologist (MSC)
2239 Psychological Assistant (MSC)

2431 Medical Registrar (MSC)
2520 Training Officer (MSC)

2616 Plans and Policies Officer (MSC)

2700 Student Officer (All Branches)

3000 Medical Officer, Staff (MC)
3005 Medical Officer, Preventive Medicine (MC)
3006 Medical Officer, Industrial Medicine (MC)
3007 Malariologist (MC)
3012 Hospital Administrator (MSC)
3020 Vital Statistics Officer (MSC)

3100 Medical Officer, General (MC)
3101 Medical Officer, Tuberculosis (MC)
3104 Proctologist (MC)
3105 Gastro-Enterologist (MC)
3106 Ophthalmologist and
Otorhinolaryngologist (MC)
3107 Cardiologist (MC)
3108 Obstetrician and Gynecologist (MC)
3111 Urologist (MC)
3112 Dermatologist (MC)
3113 Allergist (MC)
3115 Anesthesiologist (MC)
3116 Podiatrician (MC)
3125 Ophthalmologist (MC)
3126 Otorhinolaryngologist (MC)
3127 Electroencephalographer (MC)
3128 Neurologist (MC)
3129 Psychiatrist (MC)
3130 Neuropsychiatrist (MC)
3131 Neurosurgeon (MC)
3138 Medical Officer, Tropical Medicine (MC)
3139 Internist (MC)
3150 General Surgeon (MC)
3151 Thoracic Surgeon (MC)
3152 Plastic Surgeon (MC)
3153 Orthopedic Surgeon (MC)
3170 Dental Officer (DC)
3171 Oral Surgeon, Dental (DC)
3172 Endodontist (DC)
3173 Orthodontist (DC)
3174 Periodontist (DC)
3175 Prosthodontist (DC)
3178 Dental Officer, Staff (DC)
3180 Physical Medicine Officer (MC)
3182 Diagnostic & Therapeutic Radiologist (MC)
3184 Diagnostic Radiologist (MC)

3200 Veterinary Officer, General (VC)
3201 Veterinary Officer, Large Animal (VC)
3202 Veterinary Officer, Small Animal (VC)
3205 Veterinary Officer, Staff (VC)
3206 Veterinary Officer, Remount (VC)
3221 Meat and Dairy Products Inspector (VC)
3222 Meat Products Inspector (VC)
3223 Dairy Products Inspector (VC)
3231 Veterinary Officer, Laboratory (VC)

3308 Medical Officer, Laboratory (MC)
3306 Radiologist (MC)
3307 Bacteriologist (MSC)
3309 Biochemist (MSC)
3310 Parasitologist (MSC)
3311 Serologist (MSC)
3314 Clinical Laboratory Officer (MSC)
3315 Entomologist (MSC)
3316 Nutrition Officer (MSC)
3318 Pharmacy Officer (MSC)
3325 Tissue Pathologist (MC)
3327 Aviation Physiologist (MC)
3340 Optometry Officer (MSC)

3416 Occupational Therapist (WMSC)
3419 Physical Therapist (WMSC)
3420 Hospital Dietitian (WMSC)
3430 Nurse, Administrative (ANC)
3437 Nurse, Neuropsychiatric (ANC)
3441 Nurse, Communicable Diseases (ANC)
3442 Nurse, Pediatric (ANC)
3443 Nurse, Operating Room (ANC)
3445 Nurse, Anesthetist (ANC)
3446 Nurse, Obstetrical (ANC)
3449 Nurse, General Duty (ANC)

3500 Medical Officer, Command (MC)
3505 Ambulance Officer (MSC)
3506 Litter Officer (MSC)
3525 Medical Assistant (MSC)

3605 Psychiatric Social Worker (MSC)

4000 Supply Officer, General (MSC)
4012 Director of Supply (MSC)

4110 Mess Officer (MSC)

4400 Medical Supply Officer (MSC)

4490 Medical Equipment Maintenance Officer (MSC)
4491 Optician (MSC)

5006 Information-Education Officer (MSC)

5310 Chaplain

5321 Physical Training Officer (MSC)
5325 Physical Reconditioning Officer (MSC)

7316 Technologist (MSC)

7360 Sanitary Engineer (MSC)

8547 Medical Photographer (MSC)

DECLASSIFIED E.O. 12065 SECTION 3-402/NSC NO. 175013

RESTRICTED



PART I

CONTENTS


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Organization of the Medical Section | I | 1 |
| Senior Dental Student Program Continued | II | 1 |
| Natives Trained for Medical Duties | III | 1 |
| Arsenophin and Chloroquin | IV | 2 |
| Army Nurse Assigned to Indiana Research | V | 2 |
| Field Sanitary Inspection | VI | 2 |
| Recent Department of the Army and TSC Publications | VII | 3 |
| Index | VIII | 3 |


## I. Organization of the Medical Section

Departure from the Medical Section, General Headquarters, Far East Command: Lt. Col. H. P. Nelson, MC, completed his overseas tour of duty and returned to the zone of interior for reassignment.

Maj. A. L. Robbins completed his overseas tour of duty and returned to the zone of interior for reassignment.

## II. Senior Dental Student Program Continued

The Army Senior Dental Student Program which was originated last year has been approved for extension for one year by the Department of the Army. This program will provide an opportunity for 300 dental students who will complete their dental education in 1943 to be commissioned in the Army as second lieutenants in the Medical Section Corps Reserve and be ordered to extended active duty, at the schools in which they are enrolled, on full pay and allowances of that grade during their senior year. On graduation, these officers will be commissioned first lieutenants in the Dental Corps Reserve. They will serve on extended active duty as dental officers for two years.

Three important changes have been made in the senior-student program. Application for the Regular Army will not be a requirement; 1000 dental students may participate in the program, and the maximum age limit has been raised to 35 years.

## III. Natives Trained for Medical Duties

The Navy, in an effort to raise the health standards of approximately 30,000 natives living in the Pacific Ocean Territory established a School of Medical Assistants to educate natives in medical work. Five native men were recently graduated from this school, having completed a four-year curriculum and are now established for general medical practice, including minor surgery. The graduates, three from American Samoa, one from Guam and one from Majuro Atoll have returned to their home islands to enter medical practice.

The Medical Assistants School is one of three such schools which the Navy has established on Guam. There also is a School of Dental Assistants, with a four-year curriculum, and a School of Nurses, which offers a three-year course.

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V. Aureomycin and Chloromycetin

The following information contained in a Department of the Army letter, subject: Aureomycin and Chloromycetin, dated 27 September 1948, is published for the guidance of all personnel concerned:

"1. It is contemplated that in the near future the subject drugs will be listed in the Armed Services Catalog of Medical Materiel as standard items of issue and under appropriate nomenclature and stock numbers. The inclusion of these drugs as standard items of issue may result in a large amount being requisitioned, amounts which may not be available for issue. It is desired to point out that Aureomycin and Chloromycetin are still in the category of scarce and costly drugs. Clinical investigations designed to date indicate that these drugs will have a definite place in the treatment of many cases owing to the situation of attending physicians in military hospitals, particularly in out-patient clinics. Such treatment with these drugs can be accomplished by oral administration, a trait very desirable in favor of this form of administration.

"2. The Surgeon General will endeavor to make Aureomycin and Chloromycetin available in quantities sufficient to meet the needs of the service. It is desired to point out, however, that Penicillin and Streptomycin in several forms are available under appropriate stock numbers in the Armed Services Catalog of Medical Materiel and are as effective as Aureomycin and Chloromycetin in the treatment of many conditions. The former drugs should be used whenever possible in order to conserve the small supply of Aureomycin and Chloromycetin, and to stay within budget limitations."

* I-496-475 Aureomycin Hydrochloride Capsules, 0.25 Gm. (4 Gr.), 100s;
** I-496-485 Chloromycetin Capsules, 0.25 Gm. (4 Gr.), 100s: (Pending Standardization)

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W. Army Nurse Assigned to Isotope Research

A team of four scientific specialists at the Army Medical Center, Washington, D.C., includes the first Army nurse to be assigned to isotope research.

First Lieutenant Margaret E. Peters, ANC (Res.), has joined three male officers who are exploring new possibilities in the use of radioactive minerals for the diagnosis and treatment of disease. The team is assigned to the Department of Radiology in the Medical Department Research and Graduate School of the Center.

Dr. Peters is to be instructed in the handling of radioactive substances and the development of techniques and procedures which may be used by nurses ordered to similar duty. It is believed that her pioneer experience will open an entirely new area of medical activity for the Army Nurse Corps.

Physicians on the research team are Capts. Robert H. Ahrens and Richard D. Bathy. A chemist, Dr. Cdr. Ray E. Monell, is the fourth member of the group.

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VI. Food Handlers Inspection

A thorough inspection of the hands of food handlers will often reveal collections of material in the creases of hands, around and in cuts and broken blisters, and especially under the nails.

Several important diseases can readily be spread by deposits of organisms in the above-named places. It is an extremely simple matter to transport pathogenic bacteria, cysts and eggs from the anus to the food and cause infection of a person or persons.

Often the food handlers are supplied with adequate hand-washing facilities, brushes and soap, but even more often the food handlers have not received adequate instructions in hand washing. Every food handler should have thorough instruction on the proper cleaning of the hands, followed by repeated inspections of the hands to determine further need of instruction.

Before handling food or utensils and after using the latrine, the hands should be washed thoroughly with hot water and soap. An added safeguard in the use of a hand brush in all crevices, between the fingers and under the finger nails. A stick or nail file should be available for cleaning under the finger nails and all food handlers should be required to have their nails cut short.

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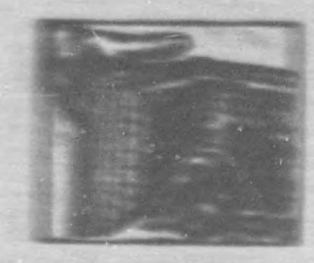
DECLASSIFIED E.O. 12065 SECTION 3-402/NNDC NO. 775013



VII. Recent Department of the Army and NRC Publications



AR 615-350, 20 Sep 49 – Enlisted Personnel – Physical Inspections. Supersedes AR 615-350, 24 Jul 47; Sec. 5, AR 40-110, 9 Apr 48; So much of Sec. 4, AR 40-105, 24 Jul 47 as pertains; Sec I, WD Cir 105, 47

TB CWS 95, 19 Aug 49 – I. Army-Navy Catalog of Medical Material, Spare Parts Sect – Effective Date of Supplies. II. Declassification – ASF Supply Catalog

TB CWS 97, 1 Sep 49 – Sec II. Clinical Record Forms

AR 40-455-6, 15 Aug 49 – Medical Services: Permanent Files of Medical Literature

AR 350-65-1, 15 Aug 49 – U.S.Military Academy Preparatory Training. Sec. 6 Preliminary Physical Examination

AR 615-40-45, 2 Sep 49 – Officers Medical Service Corps Allied Scientist Procurement – Graduate Medical Student Program

AR 600-345-11, 9 Sep 49 – Personnel – Assignment of Hospital Patients. Supersedes AR 600-345-11, 2 Mar 49

T/Unit 8-4211, 21 Jul 49 – Field Hospital

T/Unit 8-4231, 22 Jul 49 – Convalescent Center, Army. Supersedes T/Unit 8-4231, 1 Apr 47 and Change 1364-2, 15 Dec 48

T/A 10-1219-12, 5 Aug 49 – Allowances of Insect and Rodent Control Supplies. Supersedes WD Memo 40-1364-2, 15 Dec 48

SPAF 1949 CTG 32, 15 Sep 49 – Schools Commercial Schools. Sec III, c. (2) Terminations; Sec VII, c and d. Immunization and Emergency Medical Treatment

SPAF 1949 CTG 34, 15 Sep 49 – General Personnel Regulations: Par 14. "Off Limits" Areas. (2) Japanese Hospitals (3) Beaches, Parks, etc. Par 15. Civilian Food Supplies. Par 16. Illegal Commercial Activities. Delete (1) (a) Narcotic Drugs

SPAF 1949 CTG 35, 20 Sep 49 – Consumption of Japanese Food Products. Inclosure 1 to Cir 21, SPAF 1949, 6 Sep 49 Is rescinded

SPAF Misc CTG 51, 24 Sep 49 – Earnings of Military and Civilian Personnel. Par 6 c (III) Physical Examination. This circular supersedes SPAF Misc Cir 46, 13 Aug 47

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PART II

INDEX


| | | |
|---|---|---|
| Use of Dicumarol | VIII | 3 |
| "Tables" Concerning Surgical Management of Battle-Injured Japanese Women | IX | 4 |
| Clinical Results of the Use of Penicillin in the Treatment of Syphilis | X | 7 |
| Intravenous Alexandrine and Intramuscular Preparation, (Part I of Two Parts) | XI | 15 |


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VIII. Use of Dicumarol – Col. R. T. Elwell, MC, Medical Consultant, FEC, and Lt. Col. W. D. Sigwart, MC, 406th Med Gen Lab, Tokyo, Japan

Dicumarol has been accepted as a valuable therapeutic agent in the treatment of coronary thrombosis and in the prevention and treatment of thromboembolic phenomena. However, as is true of many potent drugs, the use of dicumarol carries a definite risk. At least 25 deaths have been reported, generally as a result of hemorrhagic diathesis. The drug should not be used in patients showing significant hepatic or renal insufficiency, ulcerative lesions of the gastrointestinal tract, purpura, thrombocytopenia, sub-acute bacterial endocarditis, after operations on brain or spinal cord, and during pregnancy near term. It should be used cautiously if at all where there is an active peptic ulcer; there are open granulating wounds; drainage tubes are used in wounds or body cavities; there are severe vitamin deficiencies.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDC NO. 775013



IT IS ESSENTIAL THAT THE DOSAGE OF DICUMAROL BE CONTROLLED BY ACCURATE DETERMINATIONS OF THE PROTHROMBIN TIME. The recommended method of determining prothrombin time is that of Quick. In this determination oxalated plasma is mixed with an equal amount of thromboplastin solution. To this mixture is added a small quantity of calcium chloride, the tube shaken, and the exact time in seconds required for the formation of a firm semi-solid clot is taken as the "prothrombin time." Details are given in Paragraph 79 a of TM 8-227 (October 1948) "Methods for Laboratory Technicians." Commercially prepared thromboplastin is available as a controlled non-standard supply item.

Articles dealing with the control of dicumarol therapy are frequently indefinite as to the calculation of the altered prothrombin level of prothrombin activity. A method frequently used is to divide the prothrombin time of a normal plasma by the prothrombin time of the "abnormal" or patient's plasma and then expressing the results as prothrombin percent. Such a procedure is entirely erroneous and treacherous and must be avoided.

To guide the administration of dicumarol four different control times should be obtained.[1] These various times must be obtained on each batch of thromboplastin since wide variations in potency may be encountered. These control factors are:

1. The average prothrombin time in seconds using normal undiluted oxalated plasma (termed T-100).
2. The average prothrombin time in seconds for normal plasma diluted to a 30% concentration in 0.9% saline prior to testing (3 parts of normal plasma plus 7 parts of 0.9% saline ) (termed T-30).
3. The average prothrombin time in seconds of similarly prepared 20% normal plasma in 0.9% saline (termed T-20).
4. The average prothrombin time in seconds of similarly prepared 10% normal plasma in 0.9% saline (termed T-10).

In general the dosage of dicumarol should be regulated so that the prothrombin time of the patient is kept between that of T-30 and T-10. A suggested dosage schedule is as follows:

1. Give entire day's dose by mouth in one dose.
2. Give 300 mgs as the 1st dose.
3. Give 100 mgs on each subsequent day that prothrombin time is shorter than T-20.
4. Give no dicumarol on days when prothrombin time is longer than T-20.
5. If patient is resistant to dicumarol increase dose from 100 to 200 mgs on each day that the prothrombin is shorter than T-20.

If the prothrombin time is longer than T-10 for two successive days administration of 35 mgs synthetic Vitamin K intravenously is recommended.

Prothrombin determinations should be made each day before that day's dicumarol is prescribed, daily, and continued as long as the drug is administered. If dicumarol therapy is controlled in the fashion outlined the chances of untoward reactions are reduced to a minimum.

[1] Anticoagulant Therapy in Cardiovascular Disease, E. A. Sinns, Jr., and H. W. Barker, Med Clin N.A. 33:335 (July) 1949

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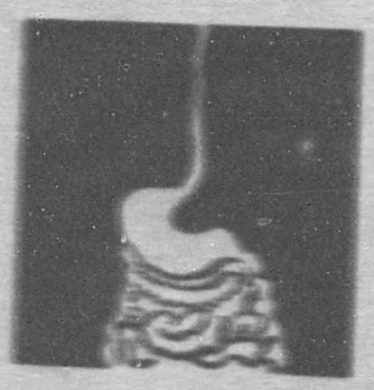
III. "Radical" Conservative Surgical Management of Perforated Peptic Ulcer - Lt. Col. Sanford M. Fraunh, III, MC and Capt. William J. Hills, MC, 118th Station Hospital, APO 24-5.



During the last four years the senior author has observed and treated non-surgically thirty-four consecutive patients with perforated peptic ulcer without mortality. This series has been reported by Seeley and his associates (1). Early in the series we were somewhat concerned with the length of time from perforation to the time that actual treatment was instituted and the interval of time that had elapsed since the patient had had a meal. However, as the series progressed, we became concerned less and less with these two factors. It has been stated by some authors that it is useless to close a perforated peptic ulcer twelve hours after the perforation; other authors set their time limit at eighteen hours. In this series the elapsed time interval from actual perforation to the time treatment was instituted varied from one half hour to three days.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



In favor of the "radical" conservative management of these patients are many factors. To begin with these patients are usually a poor operative risk and it avoids the use of an anesthetic agent and an upper abdominal operation with all of its postoperative complications in an already seriously ill patient. The main complications are: subphrenic and other intra-peritoneal abscesses, atelectasis, pneumonia, wound evisceration and infection (25.4% of 772 cases (2)), and incisional hernia. It is quite surprising to operate electively these individuals from two to three months after perforation and find an almost completely normal appearing abdomen, whereas in an individual who had a perforation closed surgically, the direct opposite is usually found at later operation. There are many adhesions throughout the abdomen, and any operative procedure carried out at that time is made most difficult. In patients treated conservatively there is an initial generalized peritonitis which usually quickly becomes localized in the upper abdomen. Patients who are exposed to a laparotomy for closure of their perforations usually, due to operative trauma and spread of organisms throughout the abdomen, have a generalized and more severe peritonitis for a longer period of time than the non-operated group.

The mortality rate of cases operated was 23.4% in a series of 15,340 cases collected by DeBakey in 1940 for the ten year period 1930-1940. Since the antibiotics made their appearance, the mortality has been somewhat lowered although Moore and Hendricks (3) report a mortality of 18% in 101 cases in 1948.

MANAGEMENT: Immediately upon entry into the hospital the patient is taken to x-ray where upright and left lateral decubitus roentgenograms are made of the abdomen. If perforation has occurred, air will be seen under both leaves of the diaphragm, and along the right gutter in the decubitus film in about three out of four cases (4). A large caliber Levine tube is then passed into the stomach with its tip at the pylorus, the position of this tube being checked by x-ray. This is a most important step. Constant suction is then applied to the tube. The patient is placed on antibiotic therapy in the form of penicillin 100,000 units every four hours and is given sodium sulfadiazine intravenously, 2 grams initially and 1 gram every four hours. Morphine sulfate is given every four hours regardless of whether the patient is having pain or not. This drug is administered because of its effect of constricting the small bowel and relaxing the pylorus. As most peptic perforations are located in the first portion of the duodenum, the effect of this drug is that of closing the perforation somewhat and allowing reflux of the upper duodenal contents into the stomach where it will be picked up by the Levine tube. The patient is given whole blood as indicated and he is put on an intravenous fluid regime consisting of 1,000 cc of 5% glucose in water, 1,000 cc of normal saline and 1,000 cc of 1/6 Molar Sodium R-Lactate solution which is increased if necessary to insure a 24-hour urinary output of 1500 cc or more. Vitamins are administered in the intravenous fluids daily. The patient is kept in fluid and electrolyte balance by close observation of his daily blood chemistries and copper sulfate determinations. Serum amylase studies are done on all patients and EKG's taken on patients in the older age group.

TYPICAL CLINICAL COURSE: The typical clinical course of these patients is one of an acute illness for two days with board-like abdominal rigidity, elevated temperature and pulse. However, on the third day, the patient appears brighter. His abdomen is definitely beginning to soften and peristalsis is usually heard. On the fifth day the abdomen is usually quite soft and the patient feels quite well. On this day the tube is clamped off, and the patient started on a modified Sippy regime consisting of one ounce of half milk and half cream mixture every two hours and one ounce of amphojel every two hours alternating the two every hour. Most patients tolerate this modified Sippy regime quite well and if no pain or distention occurs after eight hours, the tube is removed. After the patient has been kept on this regime for 3 or 4 days, he is placed on an 8th day postoperative gastroenterostomy diet. At this time in some patients it will be necessary to add either amphojel or the mixture of half cream and half milk as inbetween meal feedings because of a recurrence of ulcer symptoms. However, this is usually not the case. At two weeks most patients are back on a regular diet and feeling quite well. The morphine is usually discontinued about the third day and the penicillin and sulfa administered until the patient has been afebrile for two days.

After two weeks the patient is usually transferred to the Medical Service where an upper GI series is done, and the patient placed on a dietary regime. Three complications occurred in the series: one right pleural effusion, one subphrenic abscess which resolved itself, and one right pleural effusion with subphrenic abscess which required surgical drainage. In considering the differential diagnosis of this condition the following must be kept in mind:

1. Acute cholecystitis
2. Acute pancreatitis
3. Ruptured appendix with peritonitis
4. Coronary occlusion
5. Dissecting aneurysm of the aorta
6. Superior mesenteric thrombosis
7. Acute gastritis
8. Gastric crisis of tabes dorsalis

Herein lies another value in this form of treatment. If the correct diagnosis should be one of

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



the above conditions instead of peptic perforation, laparotomy would certainly be futile and contra-indicated in all of them save possibly the acute cholecystitis.

It must be emphasized that the proper placing of the tip of the Levine tube at the pylorus and the maintenance of constant suction is the most important feature in the treatment described here. Where there are insufficient personnel or personnel available are not adequately trained to establish and maintain continuous decompression, this type of management is strongly recommended against.

We have recently treated two cases of proven peptic perforation at the 118th Station Hospital using the method of treatment as described with this modification of antibiotic and chemotherapy: Instead of administering penicillin and sodium sulfadiazine every four hours intramuscularly, 2,000,000 units of penicillin, 1 gram of streptomycin and 6 grams of sodium sulfadiazine in 2,000 cc of 5% glucose in water are given as a constant intravenous drip every 24 hours. These case reports follow:

A 20 year old, white male soldier, J.F.C., entered the hospital at 0415 hours on 20 July 1949, complaining of severe pain in the upper abdomen. Ten hours before admission while eating dinner, he was seized with sudden, severe, non-radiating cramp-like pains in the upper abdomen and lower chest. He walked to his barracks and collapsed. For the past several months before this attack, the patient had experienced occasional cramp-like pains at night, but for the past few weeks he had been practically asymptomatic. His father had stomach ulcers. On admission his temperature was 99° and pulse, 88. He appeared acutely ill and was in severe pain. The upper abdomen was board-like with marked tenderness in both upper quadrants. X-rays of the abdomen taken in the upright position revealed free air under both leaves of the diaphragm. WBC was 20,300; Polys 80; Lymphocytes 20. A diagnosis of perforated peptic ulcer was made.

A Levine tube was passed into the stomach and constant suction was started. The patient was placed on 4,000 cc of intravenous fluids daily with supplemental vitamins and penicillin, streptomycin and sulfadiazine were given intravenously in a constant drip. Morphine sulfate grains 1/4 was given every 4 hours. He was transfused with 500 cc of whole blood the first hospital day. The second hospital day the temperature rose to 104° and the abdomen remained rigid and tender. By the fourth hospital day the temperature was 102°, the abdomen was soft and only slightly tender. After the eighth day the temperature did not rise above 100°, and the abdomen remained soft. The WBC had dropped to 9,000. On the ninth day the tube was removed and the patient put on a milk and cream diet with amphojel. Two days later he was placed on a progressive gastro-enterostomy diet. Intravenous antibiotics were continued until the 14th hospital day. Three weeks after hospital entry he developed a severe, acute thrombophlebitis in his left leg, and was treated with heparin and dicumarol and subsequently recovered. He has had no more abdominal pain or tenderness. This case ran a somewhat atypical course because it is thought that due to stoppage of the Levine tube about the third day the patient had a reopening of the perforation.

A 25 year old, white male soldier, G.C.S, entered the hospital on 3 May 1949, complaining of severe pain in the upper abdomen of 6 hours duration. This pain came on suddenly and was followed by nausea and vomiting. There was no previous history of abdominal pain. On admission the temperature was 99.4°, pulse 100. The upper abdomen was board-like. The WBC was 10,250 with 87% Polys and Lymphocytes 13%. X-ray examination revealed free air under both leaves of the diaphragm. This patient was treated as was the first case with constant suction, intravenous antibiotics, intravenous fluids and morphine. The temperature rose to 102.4 the second hospital day. His WBC was 11,550 with Polys 80% and Lymphocytes 10%. The lower abdomen was somewhat softened and moderately tender in both upper quadrants. The temperature gradually receded, and by the 4th hospital day was 100° and did not go above this thereafter. On this day the tube was removed, and the patient placed on a modified Sippy regime. The abdomen was soft and non-tender, and the patient ambulatory. Antibiotic therapy was discontinued the 16th hospital day, and the patient discharged three weeks after his hospital admission.

SUMMARY:

1. A method for the non-operative treatment of perforated peptic ulceration is described.
2. There were no deaths in 34 consecutive cases treated by this method.
3. Complications are fewer using the non-operative treatment than in patients subjected to laparotomy.
4. Two case reports are presented.

REFERENCES: (1) Seeley, S.F., Horgan E., Henry, J.R., and Bertram, H.F., "Bulletin of the U. S. Army Medical Department", 1949, 2:124-130
(2) DeBakey, M., "Surgery", 1940, 8:852-864 and 8:1020-1076
(3) Moore, S.W., and Hendricks, R., "Surgery", 1948, 23:442-449
(4) Luer, C.A., "Surgery", 1949, 25:418

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



X. Clinical Results of the Use of Penicillin in the Treatment of Syphilis* - Dr. Bruce Webster, Associate Professor of Clinical Medicine, Cornell University Medical College, New York, N.Y. Presented at Grand Rounds, Hospital Auditorium Tokyo General Hospital, Tokyo, Japan

From the first recognition of syphilis in Europe in 1493 to June 1943, a period of 450 years, the questions uppermost in the minds of the physician faced with the problem of treating syphilis have been what therapeutic agent shall I use? in what dosage? and for how long? In their simplest forms these questions resolve to the time-dose relationship.

Since mercury was first used in the treatment of syphilis, attempts to solve this problem have been on individual basis rather than on an organized one. Although arsenic was introduced in the treatment of syphilis in 1909, there was no real agreement among clinicians as late as 1943 as to the exact, time-dose relationship necessary to cure the various forms of the disease.

In June 1943, Mahoney, Arnold and Harris (1) demonstrated that penicillin was an effective therapeutic agent in early syphilis in the rabbit and in man. At that particular time, the armed forces had a special interest in syphilis since the country was entering into the early stages of World War II. Penicillin, being non-toxic, offered a therapeutic agent which had many advantages over poisonous arsenic and bismuth. In an effort to quickly obtain the maximum amount of information concerning the optimum time-dose relationship of penicillin in the treatment of early syphilis, a co-operative study was quickly organized under the leadership of Dr. J. E. Moore, of the Johns Hopkins Hospital. The Army, Navy, U. S. Public Health Service and certain selected University Clinics combined their efforts in this study. Schedules of treatment were assigned by a central committee and results of follow-up were combined in a central statistical unit. As a result of this planned study, carried out on large numbers of cases, and subjected to accurate statistical analysis, we now have, less than 6 years after its inception, considerable accurate and tangible information concerning the effectiveness of treatment schedules in early, and certain forms of late syphilis. Inadequate schedules were quickly abandoned and forms of penicillin with diminished power to destroy spirochetes were readily detected and discarded. Because of the very effective statistical analyses, pitfalls in drawing unwarranted conclusions concerning the results were avoided. As a direct result of this study, not only has the treatment of syphilis been advanced beyond the hopes of the greatest optimists, but, in addition, a method of co-operative research with a therapeutic agent has been established, which has already been adapted to other diseases.

The past four years have witnessed remarkable changes in the types of penicillin available to the physician. The original investigations were carried out with amorphous mixtures. With the development of crystalline penicillin-G, this form has supplanted all others in commercial use. Intensive studies have been carried on to develop action-delaying forms of penicillin. The first of these was penicillin in oil and beeswax. It did provide a form of administration which made the ambulatory treatments of syphilis possible. However, sensitivity to beeswax developed in many individuals. In February 1948, procaine penicillin became available. With this form, appreciable blood levels were present 24 to 36 hours after a single injection of 300,000 units. The incidence of sensitivity was low and the injection was painless. More recently, the addition of 2% aluminum monostearate to procaine penicillin has further delayed the absorption, so that, following a single injection of 1.2 million units measurable blood levels are available for 4 to 5 days. Since further advances in these action-delaying forms may be expected, it would seem that the day is not too far distant when infectious syphilis may be successfully treated with a single injection of one of these yet-to-be produced forms of penicillin.

At this time, it is important to realize, that in all probability, it is not necessary to maintain a continuously high plasma concentration level of penicillin in a disease in which the causative agent has so long a division time as T. pallidum. It has been shown that the day life of this organism is 30 to 33 hours. It would therefore seem justified, from a pharmocological point of view, to achieve the necessary lethal level only once in this time period. Clinical trials have already indicated that a single daily injection of adequate dosage of either aqueous crystalline penicillin-G, procaine, or procaine with aluminum monostearate is equivalent to the 2, 3, or 4 hourly schedules formerly used.

TREATMENT OF PRIMARY AND SECONDARY SYPHILIS:

Schedules ranging from 600,000 units to 9.6 million units of penicillin have been used in the

(* Given at The Medical Society of New Jersey, Atlantic City, 26 April 1949. From the Department of Medicine of the New York Hospital and Cornell University Medical College, New York, N.Y.)

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



treatment of primary and secondary syphilis and failure rates from 3 to 40% have been reported. It is therefore not surprising that confusion exists in the minds of many physicians as to how to treat syphilis. However, in spite of such conflicting reports, certain principles have been demonstrated. Since the day life of the spirochete is approximately 33 hours, any effective treatment must encompass at least two life spans or approximately 3 days. Mahoney and his associates (2) have recently stated that high levels of penicillin administered over 3 days would appear to have a failure rate of only 10%. Merrill (3) in a recent report of the co-operative study based on 3,000 cases of primary and secondary syphilis treated with crystalline penicillin-G over 7½ days on a two hourly or three hourly schedule reported as follows:

1. 2.4 million units was the optimum effective dose.
2. No statistical difference was observed in any increase in dosage over a total of 2.4 million units.
3. No difference was observed in the 2 hourly and 3 hourly schedules.

In the co-operative study reported by Merrill it should be pointed out that cumulative failure rates are used, and arbitrarily all patients developing a clinical or serologic recurrence, or even remaining sero-positive in moderate or high titre at the end of one year, are considered failures. It is now realized by the majority of workers that such an evaluation will include as failures a large number of reinfections and some sero-resistant cases.

The differential diagnosis between reinfection and infectious relapse in early syphilis is at the moment of major interest to students of syphilis. Formerly regarded as rare, we now know that reinfection and superinfection are not only possible in man and the experimental rabbit, but are, in all probability, a common occurrence. Why has our attention been suddenly directed to this phenomenon which was formerly thought to be practically non-existent? There are in all probability several reasons. The sexual habits of the syphilitic patient are not altered by the mere fact that he or she acquires syphilis. Under older methods of treatment such a patient was kept under the influence of arsenic or bismuth for approximately 18 months. Each weekly injection destroyed any new spirochetes which may have entered the body and, in consequence, reinfection was not observed. Today, with the maximum period of therapy of early syphilis being 8 days, the individual is left unprotected for the remainder of the time. It has been suggested that present day rapid treatment methods prevent the development of immunity. However, there is no proof of this. Whatever the mechanism, it is now apparent that many patients who have been adequately treated for primary or secondary syphilis, and who achieve negativity, develop new, darkfield-positive lesions at a different site with a subsequent rise in serologic titre. More often than not, careful epidemiological studies will reveal exposure to a case of infectious syphilis. A review of 140 instances of relapse or reinfection at the New York Hospital revealed that 70% of these cases were, in all probability, reinfection with only 30% true relapse or treatment failures (4).

The total failure rate reported by Merrill (3) in the co-operative study series of 3,000 cases of primary and secondary syphilis treated with 2.4 and 4.8 million units of penicillin over 7½ days was 10% at the end of the first year and 12% at the end of the second year. It must be remembered that this total failure rate includes all individuals manifesting clinical or serological evidence of syphilis during the time period included. If one uses the New York Hospital series as a criteria, 70% of these failures could properly be classified as reinfection if evaluated on the basis of history, clinical manifestation, serologic behaviour and epidemiological information. Others will have remained sero-positive in moderate titre throughout the period of observation (the so-called sero-resistant cases) and will have been classified as treatment failures at the end of one year in the present study. If one further deducts these cases which are sero-resistant, but remain clinically well, the total failure rate will be reduced by an additional 1 to 2%. Thus it would appear that treatment of primary or secondary syphilis with 2.4 million units of crystalline penicillin-G over 7½ days in all probability is followed by a very low true clinical failure rate -- probably less than 3%.

Certain other additional observations were reported by Merrill (3). There was an improvement in the failure rate if arsenic and bismuth was added to the penicillin regime. Minor racial and sex differences reported in the effectiveness of penicillin could be accounted for on the basis of difference in reinfection rates.

In about 60% of patients with primary or secondary syphilis, fever, with or without exacerbation of the mucocutaneous lesions has appeared within 12 hours after the start of penicillin therapy and lasted up to 24 hours. It is accompanied by a leucocytosis. This is the so-called Jarisch-Herxheimer reaction and need not be a cause for alarm. The mechanism is at present unknown.

The greatest advantage of penicillin over metal chemo-therapy is that it is relatively non-toxic. Cutaneous reactions, allergic in nature, occur in less than 1% of patients treated with crystalline

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



penicillin-G. These disappear promptly when the drug is stopped and, in many instances, the concurrent administration of one of the anti-histaminic drugs will allow the treatment with penicillin to be continued.

There is no clear cut evidence that penicillin resistance in syphilis exists. This is unlike the familiar arsenic and bismuth resistant syphilis and the behaviour of common bacterial infections to penicillin.

What of the patient, however, rare, who is not cured by penicillin. With this, as with all other forms of therapy for infectious syphilis careful follow-up is an important requisite. This should consist of clinical examination and the performance of a titred serologic test at monthly intervals. The use of the titred test here is essential if adequate progress of the patient is to be evaluated. The rate of serologic response follows closely that observed with intensive arsenical therapy (5), the majority achieving sero-negativity in 6 to 12 weeks. Variations do occur and a small number may continue to show a low titre at the end of one or two years. These represent the sero-resistant group. For practical purposes the co-operative study of the National Institute of Health has defined sero-resistance at the level of 16 Kahn units or 4 dilution units at the end of one year. Whether or not the eventual outcome of this group will be influenced by further treatment is open to question.

The failures will consist of the group manifesting new clinical lesions and those exhibiting sustained significant sero-relapse during the follow-up period. These two latter groups require retreatment whether the cause be reinfection or recurrence of the original infection. There is rapidly increasing evidence that retreatment with the same dosage of penicillin used in the original treatment is effective in these cases. This is an argument in favor of reinfection rather than relapse.

No mention has been made of the treatment schemes which combine penicillin and arsenic and bismuth. Advocated early in the history of penicillin therapy of syphilis, on the argument that they exerted a synergistic effect, they gained considerable popularity in spite of the fact that the use of arsenic defeated the major advantage of penicillin, namely absence of toxicity. With clarification of our knowledge of the value of penicillin, less and less mention has been made of these treatment regimes. It is now generally agreed by the majority of investigators that arsenic and bismuth have no place in the treatment of syphilis.

Thus, it would appear that primary or secondary syphilis may be successfully treated with 2.4 million units of aqueous crystalline penicillin-G, or procaine penicillin, administered in 8 daily doses of 300,000 units each. The failure rate with such a form of therapy is low, probably not over 3%, if one deducts the probable reinfections. This treatment is not associated with any risk and may be carried out on an ambulatory basis. Prolonged clinical and serologic follow-up is necessary.

LATENT SYPHILIS:

How shall we treat latent syphilis with penicillin? Latent syphilis, is that stage of the disease in which the patient has no symptoms or physical signs and is detectable only by the serologic test for syphilis. The use of penicillin in this form of the disease is based on the assumption that, since it is effective in the treatment of early and late syphilis, it may be expected to prevent the development of clinical manifestations in latent syphilis. A post-treatment observation of 10 to 20 years will be necessary to prove that penicillin offers the 95 to 98% chance that is offered by heavy metal therapy in latent syphilis. Preliminary studies have indicated that adequate treatment will produce a slightly better incidence of sero-reversal in early latent syphilis than will the 26-week arsenic-bismuth regime. At the New York Hospital, latent syphilis is treated with 600,000 units of procaine penicillin twice weekly for 6 weeks -- a total of 7.2 million units. Over 70% of 48 cases of early latent syphilis treated by this method have shown a sustained sero-reversal. The Army (6) recommends 600,000 units daily for 10 days, totalling 6 million units. In general, the recommendations for latent syphilis increase the time period of administration over that for early syphilis. It is important to remember that a certain percentage of cases of latent syphilis will remain sero-resistant irrespective of the amount of treatment given them. Penicillin will not reverse the serologic test in a case which has proven sero-resistant to adequate arsenic therapy. It behooves the physician to evaluate the adequacy of previous therapy and determine whether or not a given case of latent syphilis has had sufficient therapy and is sero-resistant or whether it needs treatment with one of the penicillin schemes.

SYPHILIS IN PREGNANCY:

The problem of the treatment of syphilis in pregnancy has recently undergone considerable clarification. Previously untreated syphilis discovered during pregnancy may be handled by the approved

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



schedules or the penicillin treatment of early syphilis. There are no toxic reactions and, because of the rapidity of treatment, a normal infant can be expected, even if the disease is discovered late in the pregnancy. Although for many years it has been the custom to re-treat syphilitic mothers during each pregnancy, considerable doubt has existed in the minds of clinicians as to the necessity of this. Goodwin and Farber (7) in 1948 reported on 570 pregnancies in women previously treated with heavy metals and penicillin, and allowed to go untreated through the pregnancy. Ninety-two percent of the infants were born alive and no evidence of syphilis was noted in either the living or the stillborn infants. Since that time, other clinics have reported similar results. It would now appear to be safe to allow a mother to go untreated through a pregnancy provided:

1. She has had adequate therapy prior to the pregnancy.
2. She shows no clinical evidence of activity of the disease.
3. She is sero-negative or sero-positive in low titre (less than 16 dilution units).

CARDIOVASCULAR SYPHILIS:

If untreated, approximately 10% of all cases of early syphilis will develop cardiovascular involvement. The clinical picture varies widely depending on the extent and site of the pathological process. Briefly they may be classified as follows:

1. Uncomplicated Aortitis-manifested only by infiltration of the Aortic wall, with or without diffuse dilation (5.3%)
2. Aneurysm-due to the destruction of elastic tissue and the consequent localized saccular dilation (1.2%)
3. Encroachment of the lesion downward on the Aortic leaflets with resulting Aortic Insufficiency (2.7%)
4. Encroachment of the lesions on the Coronary ostia-with characteristic symptoms (approximately 0.5%)
5. Syphilitic myocarditis (approximately 0.2%)

The problem of clinical recognition of cardiovascular syphilis before irreparable anatomic damage has been done is an important one. Uncomplicated Aortitis presents the greatest difficulty in this regard. It is essential that all cases of late syphilis be carefully evaluated in regard to the presence of early Aortitis. Although there is disagreement among students of the disease on this point, we believe that the following clinical criteria are of importance.

1. X-ray demonstration of dilation of the first portion of the Aorta.
2. Demonstration of dilation of the Aorta by angiocardiography.
3. Lowered cardiac reserve with absence of hypertension or valvular disease.
4. Characteristic changes in the Aortic 2nd Sound.
5. Moore (8) stresses the significance of localized substernal pain (differentiated from anginal pain as not being influenced by exertion nor referred down the arm).

In spite of the most painstaking examination and history, a large number of cases will escape clinical diagnosis.

Although there are still some skeptics, we believe that it has been definitely established that the treatment of cardiovascular syphilis with anti-syphilitic agents brings about alleviation of symptoms and probable prolongation of life. Data collected by Moore (8) and more recently at the New York Hospital (9, 10) indicates that the prognosis of syphilitic heart disease is considerably better than standard textbook accounts would indicate. Whether or not improvement in the pathologic lesion in cases which receive adequate anti-syphilitic therapy parallels the clinical improvement is still problematical. Restoration to normal structure of an Aorta once damaged by syphilitic Aortitis is not to be expected; but, an arrest of the disease by means of anti-syphilitic therapy, with the formation of a fibrous scar and the regression of inflammatory cellular infiltration in the tissues would seem to be a possibility.

There are in the medical literature surprisingly few accounts of the comparison of the pathologic picture in treated and untreated syphilitic Aortitis. Webster and Reader (11) have reviewed the microscopic findings in the Aorta in 45 cases of this disease -- approximately half of which received adequate anti-syphilitic treatment and the other half of which received little or no treatment. All of the untreated cases showed evidence of an active syphilitic process in the Aorta-as manifested by endarteritis, perivascular lymphocytic infiltration, and the presence of plasma cells. On the other hand, in the adequately treated group, 84% failed to show evidence of activity. Although the series is small, the results would seem to be in keeping with the concept that adequate anti-syphilitic therapy of syphilitic Aortitis brings about an arrest of the active syphilitic process associated with

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



relief of symptoms and probably prolongation of life.

In any consideration of the treatment of cardiovascular syphilis, it is important to remember that the adequate treatment of early or latent syphilis will entirely prevent cardio-vascular involvement. Amounts of treatment which are totally inadequate to prevent neuro-syphilis will prevent the development of cardiovascular lesions.

Once lesions have developed in the aorta, the aim of treatment would seem to be the arrest of activity in these areas. There are certain essentials on which the formulation of a treatment scheme for any patient with cardiovascular syphilis are based. These are:

1. A clinical evaluation of the location and extent of the anatomic lesion and the consequent physiologic disturbances.
2. Permanent limitation of physical activity to a degree dictated by the extent of involvement.
3. General medical care with special reference to the use of digitalis and mercurial diuretics.
4. Specific anti-syphilitic treatment.

Prior to the advent of penicillin, there was fairly general agreement that, once compensation was restored, the treatment of uncomplicated Aortitis, syphilitic Aortic insufficiency and aneurysm should consist of two years of alternate courses of bismuth and arsenoxide.

Since so much uncertainty exists as to the effect of heavy metal treatment on cardiovascular syphilis, it can readily be seen that no estimate of the value of penicillin is possible. A full evaluation can be made only after many years of observation of treated cases.

Individual clinics are carrying out experimental treatment of cardiovascular syphilis with penicillin. Moore (12) suggests the use of 5 to 10 million units, over 15 to 21 days. The Veterans Administration (13) recommend 6 million units administered over 15 days.

At the New York Hospital, patients with cardiovascular syphilis receive 300,000 units of penicillin daily for 14 days, followed by 300,000 units twice weekly for 10 weeks. This makes a total of approximately 10 million units.

The great increase in the time period over which the patient receives treatment is prompted by the observation that healing of the lesions of cardiovascular syphilis progressed more slowly under older methods of therapy than lesions elsewhere.

The fear that a Herxheimer effect might result from the treatment of cardiovascular syphilis was expressed by many writers on the subject. Experience has proven that this is not the case and that previously untreated patients can be started on full doses of penicillin with safety.

CENTRAL NERVOUS SYSTEM SYPHILIS:

Since the outcome of treatment is neurosyphilis is predominately dependent on the type of the disease present, it is perhaps advisable to discuss briefly the classification of neurosyphilis.

Inflammatory Types:

1. Asymptomatic neurosyphilis
2. Acute syphilitic meningitis
3. Diffuse meningovascular syphilis

Degenerative Types:

1. Tabes dorsalis
2. Paresis
3. Primary optic atrophy

The combinations, in varying degree, of these lesions in most patients with neurosyphilis is the root of the difficulty of accurate clinical diagnosis and subsequent evaluation of therapy. As may be expected, the degree of degeneration of nerve tissue which has occurred before treatment is begun, determines the extent of failure of any form of therapy.

Opinion is divided as to the proper role of penicillin in the treatment of neurosyphilis. One school of thought feels that it may be used alone; the other recommends concomitant penicillin and malaria as the treatment of choice. There is universal agreement that penicillin alone, in dosage ranging between 2.4 and 6 million units over a 2 week period will accomplish as much as two years treatment with heavy metals.

Gammon (14) has reported recently on the pathological examination of brain tissue of paretics previously treated with penicillin. With the exception of one case which had received the penicillin

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



only 3 weeks before death, they showed tissues cleared of the inflammatory signs usually seen in paresis.

A paradox of the penicillin treatment of neurosyphilis is that excellent results are obtained after the intra-muscular administration of the drug, although penicillin cannot be demonstrated by the usual techniques in the spinal fluid, if the dosage is relatively low. This led earlier workers to administer the drug intra-thecally. The hazards were such that this has been abandoned.

The results of treatment of neurosyphilis may be evaluated in two ways:

1. The cell count, spinal fluid protein, colloidal gold, and Wasserman compliment-fixation tend toward normal, in the order named.
2. Clinical improvement may be evaluated.

Both methods have their advocates and both have disadvantages. A combination of the two would appear to be best.

The results of treatment of the inflammatory types of neurosyphilis, e.g., asymptomatic neurosyphilis, acute syphilitic meningitis and meningovascular syphilis, with 4.2 or more million units of penicillin in 300,000 unit daily dosage for 14 days are excellent. Cell count and protein levels reach normal in approximately 6 months and the compliment fixation tends toward normal. Improvement may continue up to 24 to 36 months after cessation of therapy.

Disagreement exists as to whether the degenerative forms of central nervous system syphilis, e.g., tabes, paresis and primary optic atrophy should receive penicillin alone or penicillin with concurrent malaria. Stokes, Steiger, and Gammon (15) have used penicillin alone. Seventy-four percent of spinal fluids were either rendered normal or were markedly improved. Marked symptomatic improvement occurred in 43% of paretics and 33% of the tabetics. Rose and Solomon (16) have used concurrent penicillin and 4 to 6 paroxysms of induced malaria. It is important to remember that these authors, working in a psychopathic hospital may see more advanced paresis than some of the other reporting clinics. Regarding "improvement" as ability to be discharged from the hospital, they found 67% of their paretics in that category following penicillin and malaria. In addition some of the cases received shock therapy. They point out that these cases with an effective syndrome offer a better prognosis than those with a schizophrenic one.

Thus it can be readily seen that confusion still exists as to the best method of treatment of the degenerative forms of central nervous system syphilis.

At the New York Hospital, we use 4.2 million units of penicillin alone in a daily dosage of 300,000 units for 14 days in all forms of central nervous system syphilis, except primary optic atrophy.

The patients are followed as to clinical improvement, and spinal fluid changes. If no improvement occurs at the end of one year or the patient regresses at any time, tabetics and paretics are retreated either with penicillin alone or with penicillin and malaria depending on the severity of the case.

In view of the inadequacy of available data and the urgency of the situation, it appears to be generally agreed that patients with primary optic atrophy should receive the benefit of both penicillin and malaria.

SUMMARY:

In summary, it would appear that the penicillin treatment of forms of syphilis offers a safe, rapid, and in most forms, a moderately sure method of therapy. 2.4 or more million units of crystalline penicillin-G given in 8 daily doses of 300,000 units each, provide adequate therapy for primary and secondary syphilis and result in a failure rate probably as low as 3%.

Latent syphilis and cardiovascular syphilis, by analogy, in all probability, may be successfully treated with penicillin. The latter perhaps will require treatment over a longer time period.

Disagreement exists over the best method of treating central nervous system syphilis. The inflammatory forms of this disease, e.g., asymptomatic, acute syphilitic meningitis, and meningovascular syphilis may be successfully treated with 4.2 million units of penicillin given over 14 days. In the opinion of many observers, the same therapy is effective in tabes dorsalis and paresis. Others advocate concurrent penicillin and malaria in these forms of the disease. Further investigation on a long range basis should provide the answer to this question.

Much has been acccmplished since penicillin was first used in the treatment of syphilis in

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



1943. The future would seem to lie in the development of action-delaying forms of penicillin which would tend to shorten the period of treatment and in the development of newer antibiotics which have a stronger spirochetocidal power.

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XI. Intravenous Alimentation and Preoperative Preparation - Capt. R. J. Burkhard, MC, presented at a Surgical Conference, Tokyo General Hospital, Tokyo, Japan. (Part I of Two Parts)

In no other phase of the surgical management of a patient does more diversity of opinion exist than in parenteral alimentation. Toward the end of placing intravenous alimentation on a rational and mathematical basis this paper is presented.

The four phases to be considered are:

1. Metabolism and requirements of protein, carbohydrate and fat; total caloric requirements; vitamin requirements.
2. Water and electrolyte balance.
3. Formulae for control of alimentation.
4. Preoperative preparation of the patient.

PROTEINS:

Proteins are the most important item in any prolonged parenteral alimentation. The essential amino acids are the important constituents of protein foods. All 10 amino acids are present in adequate amounts in the standard protein hydrolysates on the market today. Of newer importance is a substance, strepogenin, a peptide found in casein and other proteins, not a protein substance itself, but vitally important in maintaining human metabolism. The requirements have not yet been established. It is not present in the acid or alkaline protein hydrolysates. It can be supplied by giving small amounts of milk or cheese, supplementarily. This substance is present in enzymatic protein hydrolysates are not universally available and are very expensive, therefore prohibitive at the present time.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



The protein requirement is 1 gm./kilo/day for a normal individual. The protein minimum is 0.4 gm./kilo/day. At this latter level the patient will be wavering between positive and negative nitrogen balance and the body is beginning to mobilize tissue proteins for energy. Post-operatively approximately 2 gms./kilo/day should be given. Increased protein requirements are necessary, also, in undernourished patients, pregnancy, lactation and childhood.

The level of protein metabolism for all practical purposes can be measured by the output of urinary nitrogen; 1 gm. of urinary nitrogen represents the metabolism of 6.5 gms. of protein. Normal urinary nitrogen output/24 hrs. is approximately 13 gms.

The total blood protein has a normal value of 7-10 mgms.%. The albumin-globulin ratio is normally 1.5.

Proteins are principally used for:

1. Body growth.
2. Tissue repair.
3. Maintenance of the plasma proteins.
4. Prevention of toxic liver damage.
5. Conversion to sugar.
6. Storage for future use.

Tissue repair is directly related to protein balance and in protein deficiency and negative nitrogen balance tissue repair is impossible. Body growth varies in the same direction.

Proteins also are important physiological detoxifiers, combining with chemical toxins of anesthetic or pathological origin in the liver, rendering them inert or are excreted in the urine in a combined from with the toxins.

The plasma proteins are of importance in: 1. Controlling osmotic pressure of the blood (albumin). 2. Maintaining a normal clotting mechanism (fibrinogen). 3. Maintaining blood ph (hemoglobin). 4. Maintaining water balance (albumin). 5. Transporting food stuffs to tissue (amino acids). 6. Providing antibodies to combat infection (globulin). 7. Promoting hemato-poiesis (globulin).

The principal channels of protein loss are: 1. Disease of the gastro-intestinal tract with impaired protein absorption. 2. Lack of protein intake. 3. Liver pathology preventing utilization. 4. Shock. 5. Hemorrhage. 6. Exudates. 7. Certain adreno-cortical lesions in which protein catabolism is increased. 8. Hyperthyroidism with its increased tissue metabolism. 9. Pituitary pathology.

Some important miscellaneous points in protein metabolism are:

1. Carbohydrates and fat are protein sparers (carbohydrates are the best) and the body will oxidize these substances in preference to proteins for energy if they are present in quantities above the basal metabolic requirements.

2. Proteins have a specific dynamic action greater than carbohydrate or fat and increase the BMR 30%.

3. When total calories and proteins are restricted, water should be restricted too as nitrogen excretion is increased in such a situation by large amounts of fluid.

4. In burns, the great loss of nitrogen is due to the raiding of tissue proteins molecules for methionine.

5. Parenteral amino acid therapy in patients with severe hepatic damage has occasionally led to a fatality probably due to accumulation of proteins in the blood stream.

6. A normal person can metabolize 10-15 gms. of protein per hours. This is decreased 50% in moderate hepatic pathology.

7. 10 gms. of nitrogen are required for a normal 70 kilo adult/24 hours. Post-operatively, 12 gms. of nitrogen are necessary for maintaining positive nitrogen balance.

8. A helpful procedure with reference to blood transfusions in order to prevent reaction and subsequent precipitation of hemin in the kidney is to give 250 cc 1/6 Molar lactate prior to the transfusion in order to alkalinize the patient and prevent precipitation of decomposition products of incompatible blood.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



CARBOHYDRATES:

The principal functions of carbohydrates are as follows:

1. Converted to $CO_2$, $H_2O$ and energy
2. Antiketogenic properties (for starvation or toxic (anesthetic) ketosis)
3. Protein sparers
4. Detoxification of harmful metabolites and chemical toxins
5. Converted to fat
6. Maintain osmotic pressure of blood
7. Protector of liver in event of bombardment by toxins
8. Storage for future use in liver and muscles

Carbohydrates may be used for the major caloric portion of the diet.

The ketogenic-antiketogenic ratio should be less than 2. A simple rule to follow is: In the diet, the gms. of fat should be less than twice the number of gms. of carbohydrate plus 1/2 the number of gms. of protein.

It is important to note that certain inhalation anesthetics are glyo-geolytic and that they destroy tissue glycogen.

The normal blood sugar is 90-120 mgms %.

A normal patient can metabolize 1 gm. of glucose/kilo/hr. This figure is reduced 50% if the liver is damaged.

The carbohydrate requirement varies between 150-250 gms./day. In order to fulfill this requirement, 10% glucose may have to be used. Recent investigation has proven that 10% glucose does not lead to diuresis unless given over 70 gms./hr and unless a glycosuria is produced first. Thrombosis is also very rare with 10% glucose.

FATS:

Fat metabolism is relatively unimportant in our present consideration as they are not used in short intravenous alimentation regimes.

Fats are principally used for: 1. Conversion to glucose. 2. Oxidization to $CO_2$, $H_2O$ and energy. 3. Solvents for the fat soluble vitamins (KADE). 4. Provision of labile methyl groups for formation of choline.

The normal caloric fat requirements are from 60-80 gms./day. The normal total blood lipid value is about 600 mgms%.

CALORIC REQUIREMENTS:

A patient at bed rest normally needs 12 calories/lb (25 calories/kilo), roughly 1600-1800 calories per day. This figure is very difficult to attain in parenteral alimentation regimes because hypertonic solutions are not routinely available and some difference of opinion has been existent about their usage. Also, most patients on prolonged intravenous alimentation are able to take 300-400 calories orally as liquid nourishment and the difference is made up in this fashion. Approximately 1200 calories are necessary as a minimum below which vitamin utilization is impaired. The major caloric portion of the intravenous alimentary diet is to be derived from carbohydrates with 70-140 gms. of protein given as a must.

VITAMINS:

Vitamins are very important in the alimentation of a surgical patient. Vitamin A is necessary for epidermal integrity and since it is stored in the liver for considerable periods of time, it need not be added in short alimentary regimes. It may be given orally in prolonged intravenous alimentation.

Vitamin K is necessary for maintaining a normal clotting mechanism. 2.4 mgms/day is an adequate therapeutic dosage for postoperative cases.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Vitamin D figures most prominently in regulating normal calcium metabolism. It, like vitamin A, is stored and is not needed in short intravenous alimentary regimes. It may be supplied orally in long intravenous alimentary regimes.

Vitamin $B_1$ and riboflavin, nicotinic acid and pantothenic acid are necessary for normal tissue oxidative processes. The requirements of thiamine is 25 mgms/day. The requirements of nicotinic acid is 50-100 mgms/day. The requirements of riboflavin is 10 mgms/day. Calcium pantothenate should be given in 5-10 mgm doses every day.

Vitamin C is probably the vitamin of extreme surgical importance. It is necessary for the fibroblastic repair of injured tissue as well as to maintain normal capillary permeability. Wound healing may be increased 30% by administering massive doses of vitamin C. Vitamin C is only stored for 4-6 hours in the liver when given in massive doses thus necessitating frequent administration to maintain a therapeutical level. Requirements normally are 25 mgms/day, however a therapeutic dose should approximate a total of 1000 mgms/day in divided doses.

Total caloric intake directly influences the utilization of the vitamins. 1200-1600 calories are needed before vitamin utilization occurs in a satisfactory degree.

Vitamins should be administered in massive doses as there is relatively little chance of producing a hypervitaminosis as compared with the risk of producing an avitaminosis.

WATER AND ELECTROLYTE BALANCE:

Water and electrolyte balance is probably the most troublesome feature of any intravenous regime. This subject has to be considered almost totally mathematically.

The normal channels for water loss and the amounts lost via these channels are:

| | |
|---|---|
| Evaporation from skin | 1500 c.c. |
| Gastrointestinal tract | 150 c.c. |
| Urinary loss | 1500 c.c. |
| Respiratory loss | 500 c.c. |
| | 3650 c.c. (approximate) |

The normal intake is:

| | |
|---|---|
| Fluid intake | 3000 c.c. |
| Food water (70% of weight of food) | 650 c.c. |
| | 3650 c.c. (approximate) |

Evaporation from the skin is constant in temperate climates, usually, but fluid loss can be increased 100-600% by high fevers and sweating. Little salt is lost by normal evaporation but in profuse sweating, much chlorides may be lost. Sweat contains 3 gms. of salt/1000 c.c. of sweat. Approximately 3 gms. of salt should be added to the daily requirements of 6 gms. during the summer months, bringing the total to 9 gms./day.

Loss of fluids via the gastrointestinal tract is constant under normal conditions, but, if the patient has diarrhea, much sodium and water may be lost and if the condition remains uncorrected, acidosis may eventually result. Vomitus and Wangensteen drainage are channels of chloride loss from the stomach. If uncorrected, an alkalosis may result. Vomitus or Wangensteen drainage contains 5 gms. of chlorides/1000 c.c. It is imperative that this be replaced in the body. Also, in calculating chloride loss in a patient with a Wangensteen suction, it is necessary to subtract the amount of oral fluids from the amount of fluid in the suction bottle in order to ascertain the true volume of gastric juice lost by suction.

Kidney excretion is variable and fluctuates rapidly with disease. The kidney conserves water by concentrating the urine in event of dehydration. Thus, if the specific gravity of the urine increases: 1. the body needs water, or 2. too much salt is being given.

The lungs excrete a constant amount of water but an increase is noted in (1) respiratory embarrassment with rapid respirations and (2) dry warm environments. Rapid breathing tends to produce an alkalosis as $CO_2$ is removed from the blood at an increased rate and base loss does not compensate immediately.

Some of the signs of excessive water loss are: 1. Inability to maintain blood pressure.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



2. Temperature increase. 3. Increase in pulse rate. 4. Cerebral symptoms (decreased sensory acuity, spots before the eyes, etc.). 5. Weakness, nausea, collapse, dry tongue, loss of normal skin turgor, and acidosis. If a patient has manifested clinical evidence of dehydration, approximately 6% of his body weight has been lost as fluids and the amount necessary to make up the deficit can be calculated as follows: .06 x weight of patient in grams equal cc of fluid to be replaced. E.G. - .06 x 70,000 = 4,200 c.c. THIS IS TO BE ADDED TO THE DAILY FLUID INTAKE OF 3,500 c.c. This amount of fluid must be given cautiously over a long interval(24-36 hours) and as much as possible by routes other than intravenous.

During an average major operation from 500 - 1500 c.c. of fluid may be lost. This may be replaced during the operation as 5% Glucose in distilled water.

The daily fluid requirement is approximately 3500 c.c.

Loss of salt in the surgical patient occurs concomitantly with dehydration. Chloride balance is measured by plasma chloride studies, the normal plasma chloride value being 500-600 mgms%. The normal salt requirement is between 5-6 gms./day.

Some important points in salt metabolism are:

1. A great amount of chlorides may be given without noting much change in the plasma chloride values.
2. After a major surgical procedure the kidney fails to excrete appreciable amounts of sodium in the urine for 24-48 hours.
3. An excess of sodium may lead to tissue edema, slow wound healing, and the sweeping of plasma into the tissues or urine.
4. If there is a hypoproteinemia and saline is administered, water loss is increased.
5. 1/2 normal saline is preferable to normal saline for intravenous alimentation, however if normal saline is given slowly, it may be used.
6. In general, water and salt balance may be said to be adequate if the urinary volume is over 1500 c.c/24 hours, and the urinary excretion of salt is 3 gms./24 hours.
7. If the urinary output is above 1500 c.c., the NPN is very unlikely to rise.
8. For each 9 gms. of salt given that is not needed, 1000 c.c. of fluid accumulates in the tissues.
9. Fluid and electrolyte balance are only possible when the blood proteins are maintained in a normal range.
10. A minimum of 500 c.c. urinary volume (24 hours) is absolutely necessary to excrete the amount of solids which are normally excreted/24 hours.

Below are listed some of the clinical signs and differentiation of the most common water and electrolyte disturbances.

| MANIFESTATION | PURE WATER DEPLETION | PURE SALT DEPLETION |
|---|---|---|
| Dehydration | +++ | +++ |
| Thirst | +++ | Absent |
| Lassitude | + | +++ |
| Orthostatic Fainting | Absent Until Late | +++ |
| Urine Volume | Scanty | Normal till Late |
| NaCl in Urine | + | Absent Unless Addison's Disease |
| Vomiting | Absent | +++ |
| Cramps | absent | +++ |
| Plasma NaCl | Normal | Decreased +++ |
| Blood Urea | + | +++ |
| Plasma Volume | Normal till late | Decreased +++ |
| Hemoconcentration | Normal till late | +++ |
| Blood Pressure | Normal till late | Low +++ |

| RETENTION OF WATER | RETENTION OF SODIUM |
|---|---|
| Nausea<br>Vomiting<br>Bradycardia<br>Dimness of Vision<br>Muscle Twitching<br>Urine Specific Gravity Low<br>Urine Chlorides Reduced<br>Hematocrit Low | EDEMA:<br>Edema of hypoproteinemia, congestive heart failure and kidney disease to be considered. |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



The following is an example of an adequate intravenous alimentary regime.

| | Fluids | Protein | CHH | Calories | Nitrogen | Salt |
|---|---|---|---|---|---|---|
| **0600 Hours** | | | | | | |
| 1000 c.c. 10% glucose in D/W<br>Add: 300 mgm. Ascorbic Acid<br>10 mgm. Thiamine HCl<br>50 mgm. Nicotinic Acid<br>5 mgm. Calcium Pantothenate<br>2.4 mgm. Alpha Menadione | 1000 | | 100 | 400 | | |
| **1200 Hours** | | | | | | |
| 1500 c.c. Protein Hydrolysate | 1500 | 75 | 75 | 600 | 9 | |
| **1900 Hours** | | | | | | |
| 750 c.c. 5% Glucose in N/S<br>Add: 300 mgm. Ascorbic Acid<br>10 mgm. Thiamine HCl<br>50 mgm. Nicotinic Acid<br>5 mgm. Calcium Pantothenate<br>2.4 mgm. Alpha Menadione | 750 | | 40 | 160 | | 6 |
| 250 c.c. 1/6 Molar Lactate (If sulfadiazine needed add 2.5 gms.) | 250 | | | | | |
| TOTAL | 3500 | 75 | 215 | 1160 | 9 | 6 |
| MINIMAL REQUIREMENTS | 3500 | 70 | 200 | 1200 | 10 | 6 |

This regime:

1. Meets all the minimal requirements for fluids, electrolytes, proteins, carbohydrates, calories and nitrogen.

2. A 1-1 ration of proteins to carbohydrate is exceeded thus preventing the body from utilizing tissue proteins.

3. The carbohydrate is given prior to the protein thus exerting a protein sparing action and necessitating a smaller amount of intravenous proteins.

4. The patient is able to sleep for 8 uninterrupted hours as no part of the intravenous alimentation extends beyond 2200 hours.

(Part II of this article to be concluded in next month's (December 1949) issue of the Surgeon's Circular Letter)

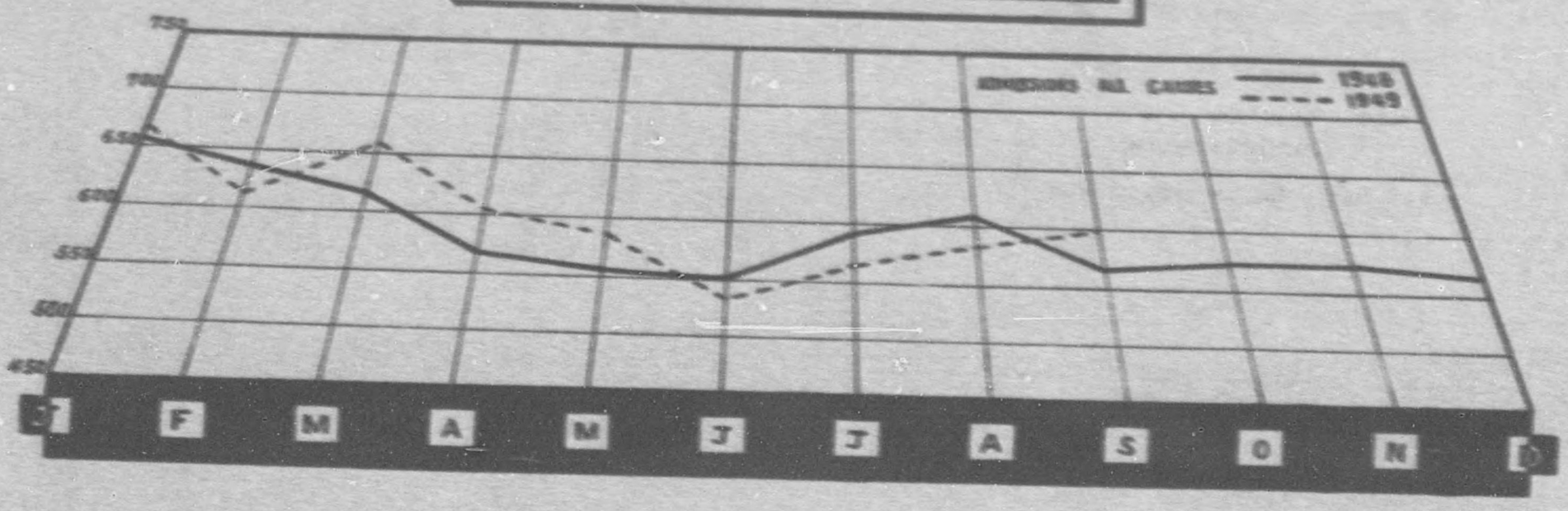
DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



PART III

STATISTICAL

## HEALTH OF THE COMMAND




Admission rates per 1000 troops per annum for the five-week period ending 30 September 1949 were as follows:

| | FEC | JAPAN | KORBO | PHILCOM | RYCOM |
|---|---|---|---|---|---|
| All Causes | 599 | 635 | 275 | 448 | 642 |
| Disease | 548 | 583 | 208 | 384 | 604 |
| Injury | 51 | 51 | 68 | 64 | 38 |
| Psychiatric | 11 | 11 | 13 | 19 | 6.1 |
| Common Respiratory Diseases and Flu | 42 | 50 | 12 | 63 | 12 |
| Primary Atypical Pneumonia | 2.1 | 2.3 | .81 | 6.2 | 0 |
| Common Diarrhea | 2.2 | 2.3 | 0 | 1.6 | 2.5 |
| Bacillary Dysentery | .39 | .09 | 0 | 4.7 | 1.0 |
| Amebic Dysentery | .46 | .17 | 0 | 4.7 | 1.0 |
| Malaria, new | 2.2 | 1.9 | 0 | 0 | 5.6 |
| Infectious Hepatitis | 6.3 | 4.3 | .81 | 11 | 20 |
| Mycotic Dermatoses | 3.0 | 3.9 | 0 | 1.6 | 0 |
| Rheumatic Fever | .13 | .09 | 0 | 0 | .51 |
| Venereal Diseases | 206 | 206 | 42 | 148 | 326 |

The admission rate for all causes for troops of this command shows a slight increase from 577 for August to 599 for September. This is the highest rate since April of this year; however, the health of the command is considered good and the slight increase in the disease component of the rate from 528 for the previous month to 548 for this month is to be expected at this season. The increase of 1 in the injury component of the admission rate is attributable to PHILCOM and RYCOM; Japan's rate decreased by 2.

The non-effective rate of 18 for September is an increase of 1 over the previous month, which was an all-time low for this command. The average non-effective rate for all overseas areas for May and June of this year was 19.2 and 19, respectively. On an average day in September, there were approximately 2,891 troops non-effective from disease and injury in the Far East Command.

DISEASES:

Common Respiratory Diseases and Flu: The rate for common respiratory diseases and flu increased from 40 for August to 42 for this month. This is favorable when considering the season of the year.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Malaria: The admission rate for total malaria decreased from 10 for the previous month to 5 for September. The only command not contributing to the decrease was RYCOM. The rate in that command remained low, however, at 5.6.

Diseases of the Central Nervous System: Subsequent to the submission of the report of the Health of the Command for August, several changes of diagnoses, pertaining to originally reported poliomyelitis cases, have occurred. The total number of cases of poliomyelitis for the month of August, as corrected, is 21. 19 cases have been clinically confirmed and reported for the month of September. To date, 25 October 1949, there have been 10 cases of Japanese B encephalitis, with laboratory confirmations, reported in the Far East Command for this year. Of these, 7 cases occurred in Japan and 3 in RYCOM. In addition, there is 1 suspected case in Japan.

Venereal Diseases: The total venereal diseases rate for this command increased from 185 for August to 206 for September. The Air Forces rate was 194 as compared to 210 for the Army. This constitutes a decreased rate among Air Force personnel from 197 for the previous month to 194, and an increased rate for Army from 182 to 210. The greatest increase occurred in Japan, rising from 178 in August to 206 for this month. The rate among white troops in Japan increased from 167 to 202 as compared to the decline among colored troops from 274 to 245.

NON-BATTLE INJURIES AND DEATHS: The rate for non-battle injuries increased 1 in September making a rate of 51 as compared to 50 for August. This is considered a good rate when compared to the average, which for the Far East Command for 1948 was 58. There were 36 deaths reported in the command for the month of September. Of the 36 deaths, 31 resulted from injuries and 5 from disease. Japan had 17 deaths from injuries and 4 from disease; MARBO had 12 from injuries and 1 from disease; RYCOM had 1 from injuries, none from disease; PHILCOM had 1 from injuries and none from disease.

**Evacuation:**

Tabulated below are the number of patients evacuated from the major commands to the ZI during the five report weeks in September and the number of patients awaiting evacuation as of 30 September 1949:

| | BY AIR | BY WATER | TOTAL | PNTS AWAIT EVACUATION |
|---|---|---|---|---|
| JAPAN | 53 | 250 | 303 | 67 |
| MARBO | 21 | 3 | 24 | 2 |
| PHILCOM | 22 | 3 | 25 | 18 |
| RYCOM | 3 | 78 | 81 | 19 |
| FEC | 99 | 334 | 433 | 106 |

Evacuations of military personnel per thousand strength for the period of 27 August to 30 September were as follows:

| | | | |
|---|---|---|---|
| JAPAN | 2.3 | PHILCOM | 3.1 |
| MARBO | 1.7 | RYCOM | 3.7 |
| | FEC 2.5 | | |

**Hospitalization:**

The bed status as of 30 September 1949 was as follows:

| | Total T/O Beds Auth. | Total T/O Beds Establ. | Total T/O Beds Occupd. | % Auth. T/O Beds Occupd. | % of Establ. Beds Occupd. |
|---|---|---|---|---|---|
| JAPAN | 4,600 | 4,338 | 1,819 | 40 | 42 |
| MARBO | 775 | 450 | 106 | 14 | 24 |
| PHILCOM | 1,250 | 1,250 | 756 | 60 | 60 |
| RYCOM | 750 | 443 | 268 | 36 | 60 |
| FEC | 7,375 | 6,481 | 2,949 | 40 | 46 |





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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



# IN THIS ISSUE


| | PAGE |
|---|---|
| Army Nurse Assigned to Isotope Research. . . . . | 2 |
| Aureomycin and Chloromycetin . . . . . | 2 |
| Clinical Results of the Use of Penicillin in the Treatment of Syphilis . . . . . | 7 |
| Food Handlers Inspection . . . . . | 2 |
| Intravenous Alimentation and Preoperative Preparation, (Part I of Two Parts). . . . . | 13 |
| Natives Trained for Medical Duties . . . . . | 1 |
| Organization of the Medical Section. . . . . | 1 |
| "Radical" Conservative Surgical Management of Perforated Peptic Ulcer . . . . . | 4 |
| Recent Department of the Army and FEC Publications . . . . . | 3 |
| Senior Dental Student Program Continued. . . . . | 1 |
| Statistical. . . . . | 19 |
| Use of Dicumarol . . . . . | 3 |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

The Chief Surgeon extends an invitation to all personnel of the Medical Department to prepare and forward, with view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted. Copy should be forwarded so as to reach the Medical Section, GHQ, FEC, not later than the 10th of the month preceding the issue in which publishing is desired.

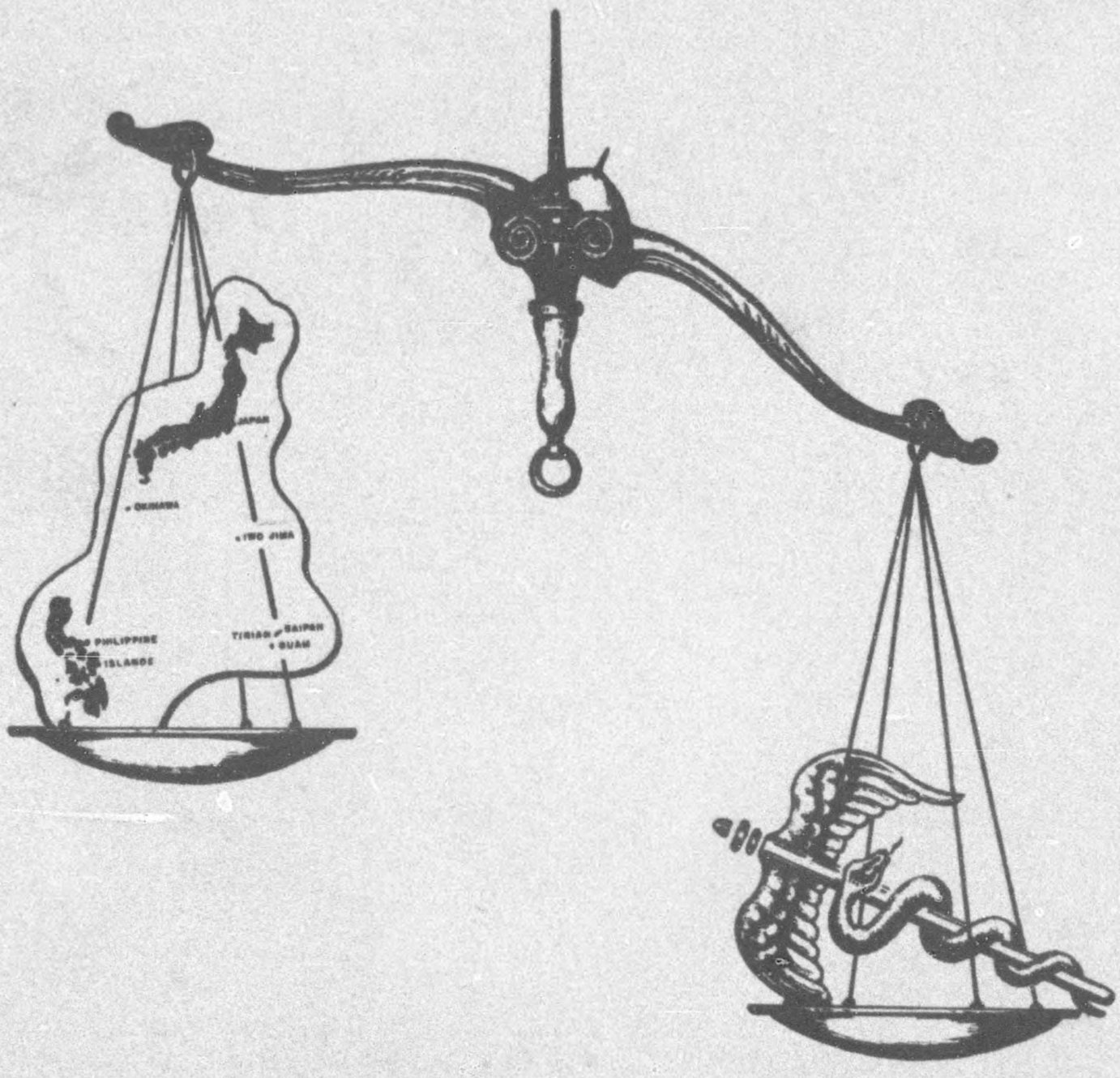
Capt. Vincent I. Hack, Editor

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

RESTRICTED

# MED. SEC. GHQ. FEC.

VOL IV NO 10
1 OCT 1949




A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

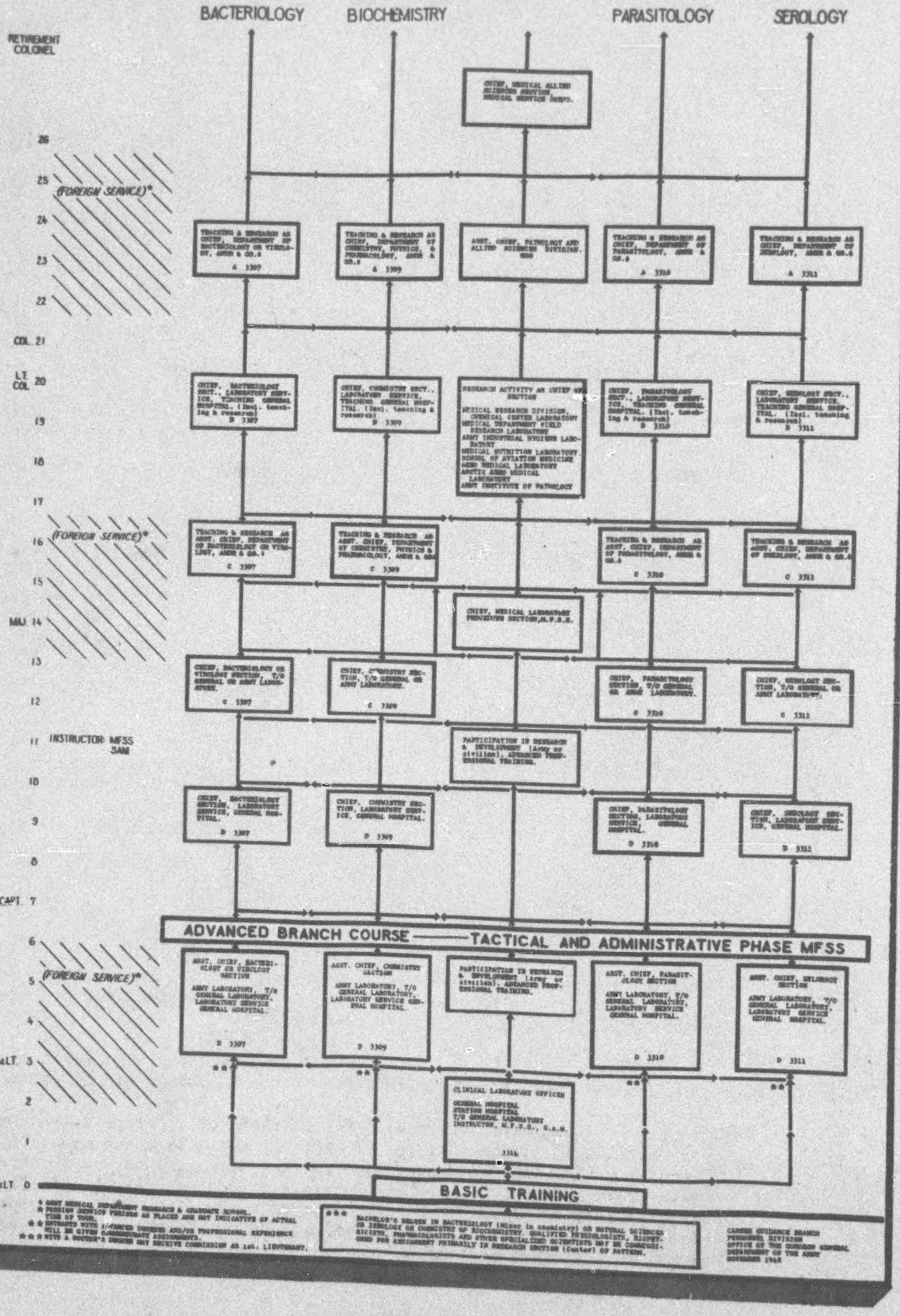
# SURGEON'S CIRCULAR LETTER

RESTRICTED

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



# PROFESSIONAL PROGRESSION PATTERN
# MEDICAL ALLIED SCIENCES SECTION, MSC
## (PART A)




* ARMY MEDICAL DEPARTMENT RESEARCH & GRADUATE SCHOOL.
* FOREIGN SERVICE PERIODS AS PLACED ARE NOT INDICATIVE OF ACTUAL TIME OF TOUR.
** ENTRANTS WITH ADVANCED DEGREES AND/OR PROFESSIONAL EXPERIENCE WILL BE GIVEN COMMENSURATE ASSIGNMENTS.
*** WITH A DOCTOR'S DEGREE MAY RECEIVE COMMISSION AS 1st. LIEUTENANT.

*** BACHELOR'S DEGREE IN BACTERIOLOGY (Minor in chemistry) OR NATURAL SCIENCES OR ZOOLOGY OR CHEMISTRY OR BIOCHEMISTRY. QUALIFIED PHYSIOLOGISTS, BIOPHYSICISTS, PHARMACOLOGISTS AND OTHER SPECIALIZED SCIENTISTS MAY BE CONSIDERED FOR ASSIGNMENT PRIMARILY IN RESEARCH SECTION (Center) OF PATTERN.

CAREER GUIDANCE BRANCH
PERSONNEL DIVISION
OFFICE OF THE SURGEON GENERAL
DEPARTMENT OF THE ARMY
NOVEMBER 1948

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON'S CIRCULAR LETTER

NUMBER. . . . . .10

APO 500

1 October 1949

PART I

ADMINISTRATIVE


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Organization of the Medical Section. | I | 1 |
| Psychiatric Evaluation Prior to Referral to Boards | II | 1 |
| Utilization of Medical Service Corps Officers. | III | 1 |
| Hospital Administration Course | IV | 3 |
| Senate Approves Employment of Civilian Doctors, Dentists | V | 3 |
| Reserve Medical, Dental and Veterinary Officers Offered Short Term Tours | VI | 3 |
| New Training Program for Psychiatric Social Workers. | VII | 4 |
| WACs Train as Nurses' Aides. | VIII | 4 |
| Mass Transfer of 3700 Medical Department Officers to USAF Completed. | IX | 4 |
| Modified Installation of Medical Department Item 6-124-300, Processing Assembly, Radiographic Darkroom, Field. | X | 6 |
| Recent Department of the Army and FEC Publications | XI | 7 |
| Index. | Inside Back Cover | |


## I. Organization of the Medical Section

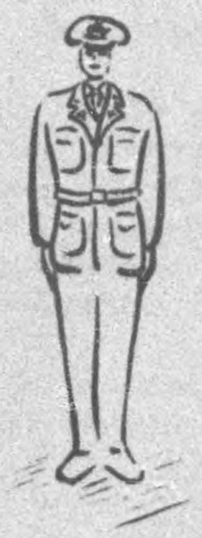
Departure from the Medical Section, General Headquarters, Far East Command: Colonel Melville A. Sanderson, DC, Dental Surgeon, was evacuated to the United States as a medical patient.

Arrival in the Medical Section, General Headquarters, Far East Command: Major Harvey E. Archer, MSC, from the zone of interior, has been assigned to the Plans and Operations Division.

## II. Psychiatric Evaluation Prior to Referral to Boards

The attention of all medical installation commanders is invited to Department of the Army Special Regulations No. 600-500-5 and Department of The Air Force Regulation No. 160-24, covering psychiatric evaluations of individuals prior to appearance before boards of officers convened under the provisions of AR 615-368 and AR 615-369. With the shortage of Medical Corps officers in the Far East Command, the provisions of this regulation should be fully observed.

## III. Utilization of Medical Service Corps Officers



The following is an extract from a Department of the Army letter, subject: Utilization of Medical Service Corps Officers, which was received in General Headquarters, Far East Command:

"Pending publication of a Department of the Army regulation covering the general mission of the Medical Service Corps, the following may be referred to:

'The Medical Service Corps consists of officers some of whom are skilled in sciences allied to medicine and others who are skilled in special management techniques peculiar and necessary to the function of each of the medical and allied professions required for an efficient medical service. Under the command of an appropriate Medical Corps officer, those officers skilled in management techniques organize and operate an efficient medical economy so that professional categories of

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Medical Department personnel, relieved to the maximum extent practicable of nonprofessional military and administrative responsibilities, may perform duties of maximum value to the service and to themselves.'

"The availability of Medical Department professional personnel makes mandatory maximum efficiency in their utilization. Administrative and other nonprofessional duties that can or should be assumed by Medical Service Corps officers must not be delegated to professional personnel. Medical Department professional personnel should be freed to the maximum extent possible for the performance of duties requiring professional medical training and experience.

"It is impracticable to classify to the utmost detail each function of each component of the Medical Department, and to indicate what duties should be accomplished by each. In general, professional duties will be performed by personnel who have had professional training and experience, and administrative duties requiring not professional but administrative training and experience, by appropriate Medical Service Corps officers. Normally, except for the inescapable necessity of Medical Corps officers exercising command of medical installations where patients are treated, and overall direction of Medical Department activities, the above general demarcation should be rigidly adhered to. Cited are a few examples which indicate the general delineation of functions between Medical Corps and Medical Service Corps officers at Army hospitals.

a. Assignments. Medical Corps: Commanding Officer, Deputy Commanding Officer, Assistant Commanding Officer, Ward Officer, Training Officer (limited to professional assignments, such as at general teaching hospitals), Instructor. Medical Service Corps: Executive Officer, Commanding Officer Medical Detachment Enlisted Men, Commanding Officer Detachment of Patients, Supply Officer, Personnel Officer, Ward Administrative Officer, Medical Registrar, Hospital Inspector, Training Officer, Instructor.

b. Duties:

(1) Duties of chiefs of professional services, ward officers and other Medical Corps officers primarily dealing with the treatment of patients involve the handling of certain necessary professional administration, such as clinical histories and allied correspondence. Functions of ward administrative officers and other Medical Service Corps officers assigned to the various hospital professional services include all duties of a purely administrative nature which can be delegated by Medical Corps officers.

(2) Functions of hospital inspectors are normally confined to inspection of conditions of discipline, training and morale; physical facilities and equipment; administrative activities; and special inspections of audits of funds and property.

(3) Medical Service Corps officers normally assume all property accountability and formal property responsibility. Medical Corps officers' functions with respect to supply are confined to general supervision and direction. Normally they assume formal property responsibility only when Medical Service Corps officers are unavailable.

(4) Medical Service Corps officers are normally responsible for formulating, coordinating and operating training programs and schedules except that all phases of professional training for Medical Corps officers, such as those at general teaching hospitals, are assumed by Medical Corps officers.

(5) Formal instruction by Medical Corps officers is limited to professional and professional technical subjects. Formal instruction by Medical Service Corps officers consists of administrative and military subjects, including all others not requiring professional knowledge.

(6) Medical Corps officers will not serve as members of boards which do not require professional medical opinion except where exigencies require their appointment to court martial boards. They will not perform duties of a precautionary nature, such as attendance at firing ranges and athletic events, when qualified Medical Service Corps officers or enlisted technicians are available. Medical Service Corps officers will be substituted for professional personnel in performance of all additional duties that do not require the knowledge or immediate presence of Medical Corps Officers."

The letter further states as follows: "Commanding officers of medical installations will take immediate steps to survey and insure proper delineation of functions between professional categories of Medical Department personnel and appropriate Medical Service Corps officers."

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



IV. Hospital Administration Course

Twenty-eight Medical Service Corps and Hospital Corps officers, including four Army and three Air Force officers, have been selected to attend the 10-month course in Hospital Administration which convened 6 September 1949 at the Bethesda, Maryland, Naval Medical Center.

V. Senate Approves Employment of Civilian Doctors, Dentists

The Armed Forces have decided upon a new approach in their effort to alleviate the continuing shortage of physicians, dentists and nurses.

Taking official note of the failure of Defense Secretary Louis Johnson's appeal for volunteers, the Senate Appropriations Committee has approved a Department of Defense request for permission to use approximately $8,000,000 to hire 686 physicians, 274 dentists and 400 nurses for one year on a contract basis.

The services have estimated a net shortage of 1,958 physicians, 988 dentists and 1,557 nurses during Fiscal 1950, but spokesmen told the Senate Committee they expect to be able to hire far less than the number needed.

As of 5 July, only 528 of the approximately 7,000 Government-trained doctors and dentists to whom Secretary Johnson directed his appeal had volunteered for active duty. Nevertheless, the Secretary decided against requesting a medical draft, and sought, instead, authority to hire civilians on a contract basis.

Of the 528 who have applied for active duty, 184 doctors and 32 dentists joined the Army Medical Corps. Forty-two physicians and 28 dentists joined the Air Force and 194 doctors and 48 dentists joined the Navy.

In support of the Department of Defense request to hire civilians, Rear Adm. Herbert L. Pugh testified that "the employment of such personnel would be limited so that the total civilian and medical personnel would not exceed the legal authorizations for military medical personnel in proportion to the military strengths for which funds are appropriated.

"This employment of civilian professional personnel," the Admiral continued, "would be financed by transfers, in the discretion of the Secretary of Defense, from military-pay appropriations to those appropriations within the respective services available for the employment of civilian medical personnel. The necessity for this proposal is the present shortage of military medical personnel because of the disparity of available earnings with those anticipated in private practice."

VI. Reserve Medical, Dental and Veterinary Officers Offered Short Term Tours

Reserve officers of the Medical, Dental and Veterinary Corps have been authorized active duty periods of from 1 to 29 days by the Army. While no single tour for more than 29 days is permitted under the program, a total of 90 days of active duty is authorized for the fiscal year. This action is another effort to ease the shortage of medical personnel.

The medical short-term plan was approved after a nation-wide survey of medical reservists was made by Maj. Gen. R. W. Bliss, Army Surgeon General, through questionnaires mailed last year. Replies to these questionnaires indicated that about 2,000 reserve MC, DC and VC officers would be available for short duty tours at Army installations near their homes. No officer will be ordered to active duty where travel to duty station is involved. Leave, or compensation in lieu of leave, is not authorized.

Officers ordered to active duty will be paid from "pay of the Army," as distinguished from Reserve training funds. They will remain assigned to their Reserve organizations and will not be accounted for in the strength of the Army.

To be eligible to participate in this program, physicians, dentists and veterinarians must hold a commission in the appropriate section of the ORC, dated after 28 June 1945 and must be members of the Active Reserve. However, men without Reserve commissions who desire to participate in the program may apply for appointment under current regulations.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Application for active duty will be submitted in duplicate on DA AGO Form R-5606. The application will be forwarded to the senior Army instructor, ORC, of the state of residence. Orders to duty will be issued when it is determined that the applicant's services can be utilized to fill an authorized vacancy of appropriate grade. In no case will officers be placed on active duty in excess of the number of authorized position vacancies for each grade, SR 140-210-10 states.

VII. New Training Program for Psychiatric Social Workers

A new training program for psychiatric social workers has been announced by the Army Medical Department. Male graduate students of social case-work who want a career with the Regular Army Medical Service Corps and who are enrolled in graduate schools of social work approved by the Army are invited to apply.

Commissions as second lieutenants in the Medical Service Corps Reserve will be tendered to selected students during fiscal years 1950 and 1951. Under this program, students commissioned will be permitted to continue in their schools as officers on active duty, with full pay and allowances until completion of academic requirements for the Master of Social Work degree (or its equivalent) with a social case-work major. On receipt of the degree, student officers will serve for a minimum of two years in the Army.

Candidates must be male citizens, able to meet the physical standards prescribed for the Regular Army, not under 21, nor over 29½ years of age on the date of application. Each candidate must have successfully completed a full academic graduate year of training in social case-work in a school of social work approved by the Army.

Applications may be obtained by writing to The Surgeon General, Department of the Army, Main Navy Building, Washington 25, D.C., Attn: Chief, Personnel Division. Completed applications must be submitted before 1 June 1950 for fiscal year 1951.

(ED's NOTE: See SR 605-60-40, 16 May 49 - Officers Medical Service Corps Allied Scientist Procurement Senior Psychology Student Program.)

VIII. WACs Train as Nurses' Aides

A 48-week course in practical nursing for WAC enlisted women currently assigned to the Army Medical Department was announced recently by Maj. Gen. R. W. Bliss, the Surgeon General. The course will be conducted at Walter Reed General Hospital from 17 October 1949 to 29 September 1950.

The purpose of the course is to train selected enlisted women in practical nursing duties, skills and knowledges. Upon completion of the course, the WAC enlisted women will be eligible for state practical nurse licenses in accordance with the standards of the National Association for Practical Nurse Education, and will be qualified for assignment to duty as medical technicians.

In announcing the new course of instruction, General Bliss said its primary purpose is to train additional personnel in the fundamentals of bedside care to supplement the professional nursing service of the Army Nurse Corps throughout the military establishment. Carefully selected WAC enlisted women will be enrolled. They will not replace the hospital corpsman, whose service on hospital wards is an integral part of military medicine, but will be added to the medical team as a further means of providing improved care for the military patient.

Captain Isabelle Mason, ANC, heads the instructional staff of five Army nurses and one dietitian. Housing, training, and recreational facilities are being provided at the Forest Glen, Md., branch of Walter Reed General Hospital.

IX. Mass Transfer of 3700 Medical Department Officers to USAF Completed

The Office of the Air Surgeon announced that approximately 3,700 Medical Department officers were transferred from the Department of the Army to the Air Force. Transfers were made after a board screened voluntary applications made by interested officers. Although a total of 3,829 transfers were authorized by a joint Army-Air Force agreement in a "proportional division of available officers to meet the needs of the two medical services," only 3,706 were transferred in the first joint action.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Transfers completed by Corps assignments transferred and authorized are:

MEDICAL CORPS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 407* | 441 |
| RESERVES | 775** | 695 |
| | 1182 | 1136 |

(* Of this total, 7 are officers from FEC)
(** 203 officers of this total will be eligible for separation 1 September 1951. Of the 775 total, 15 are officers from FEC)

DENTAL CORPS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 174* | 163 |
| RESERVES | 250** | 256 |
| | 924 | 419 |

(* Of this total, 9 are officers from FEC. Six 1st Lts and five captains originally accepted as Reserve Officers, subsequently received Regular Army Commissions)
(** Of this total, 9 are officers from FEC)

MEDICAL SERVICE CORPS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 157* | 157 |
| RESERVES | 576** | 599 |
| | 733 | 756 |

(* Of this total, 9 are officers from FEC)
(** Of this total, 16 are officers from FEC)

VETERINARY CORPS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 42 | 42 |
| RESERVES | 36* | 39 |
| | 78** | 81 |

(* Of this total, 1 is an officer from FEC)
(** This deficit agreed to by Board Members of the two Medical Departments)

ARMY NURSE CORPS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 307* | 307 |
| RESERVES | 892** | 892 |
| | 1199 | 1199 |

(* Of this total, 10 are officers from FEC)
(** Of this total, 53 are officers from FEC)

DIETITIANS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 12* | 12 |
| RESERVES | 26** | 26 |
| | 38 | 38 |

(* Of this total, 2 are officers from FEC)
(** Of this total, 3 are officers from FEC)

OCCUPATIONAL THERAPISTS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 6 | 6 |
| RESERVES | 7 | 7 |
| | 13 | 13 |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



PHYSICAL THERAPISTS:

| | TRANS. | AUTH. |
|---|---|---|
| REGULARS | 13 | 13 |
| RESERVES | 26* | 26 |
| | 39 | 39 |

(* Of this total, 3 are officers from FEC)

X. Modified Installation of Medical Department Item 6-124-300, Processing Assembly, Radiographic Darkroom, Field, (Reference TM 8-629) - Maj. Volney H. Rattan, MSC, 49th Gen. Hosp. APO 1052

Two Radiographic Darkroom Processing Assemblies, recently placed into service at the 49th General Hospital and the 361st Station Hospital, Tokyo, Japan, have been installed with the tank (figure 1 (1), TM 8-629) and the base section (figure 1 (9)) side by side rather than the usual manner of the tank setting directly over the base section as illustrated in TM 8-629, figure 1. This modification permits instant accessibility for maintenance and servicing.

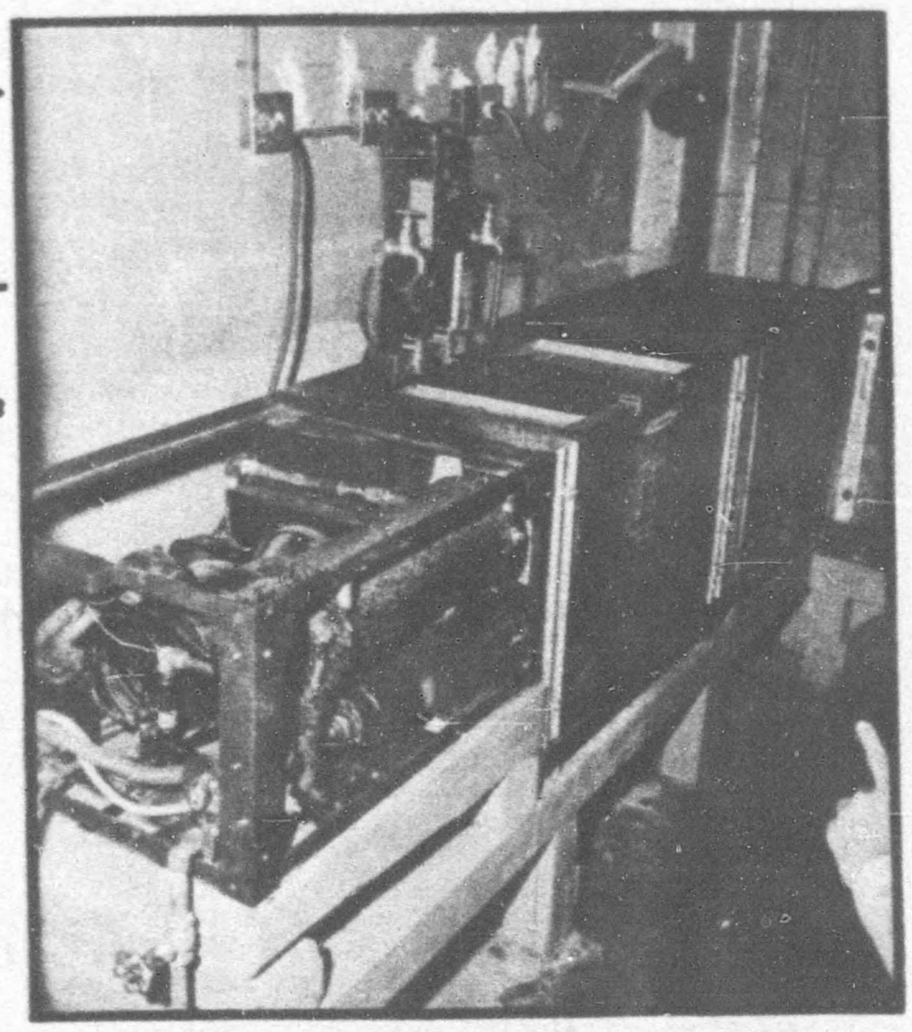
The modified installation pictured in the photographs required two plumbing changes which were accomplished in each case by the hospital utility sections using scrap lumber for the platform and approximately eight feet of copper tubing. The installation required the following:

(a) A suitable platform for support of base section and tank at convenient working height for x-ray technician.

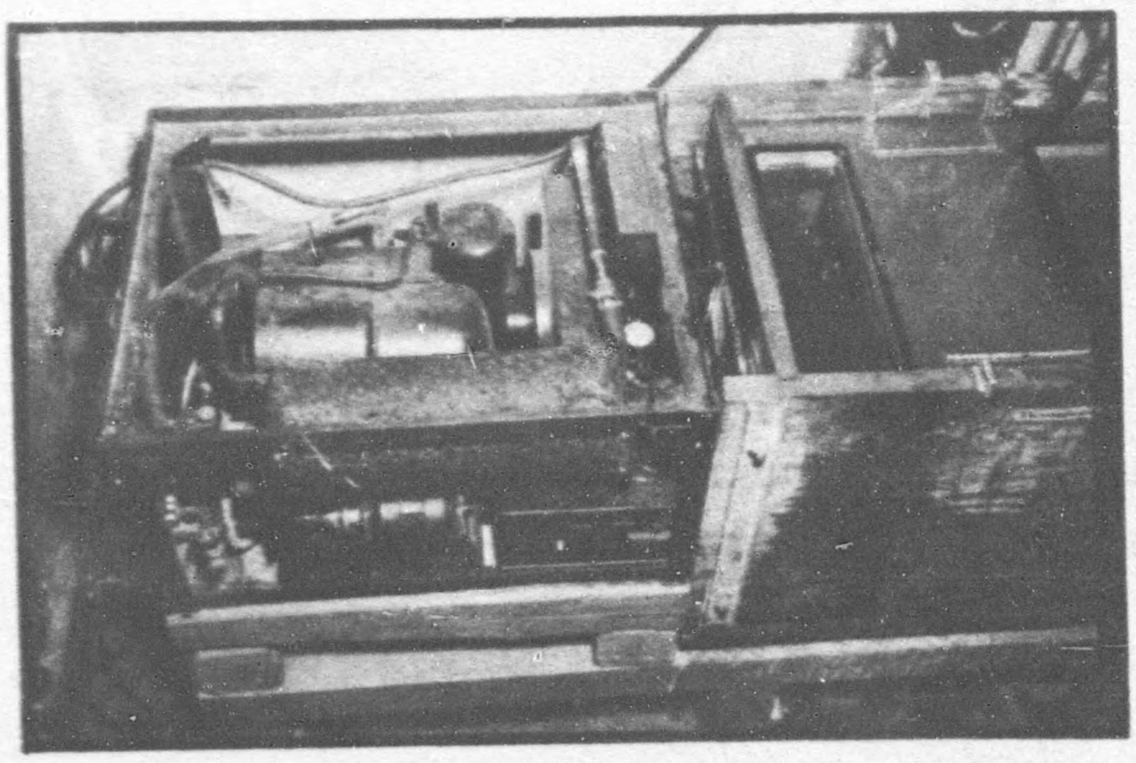
(b) A cover for the base section which can be fitted so as to set into the angle-iron ledge of the base.

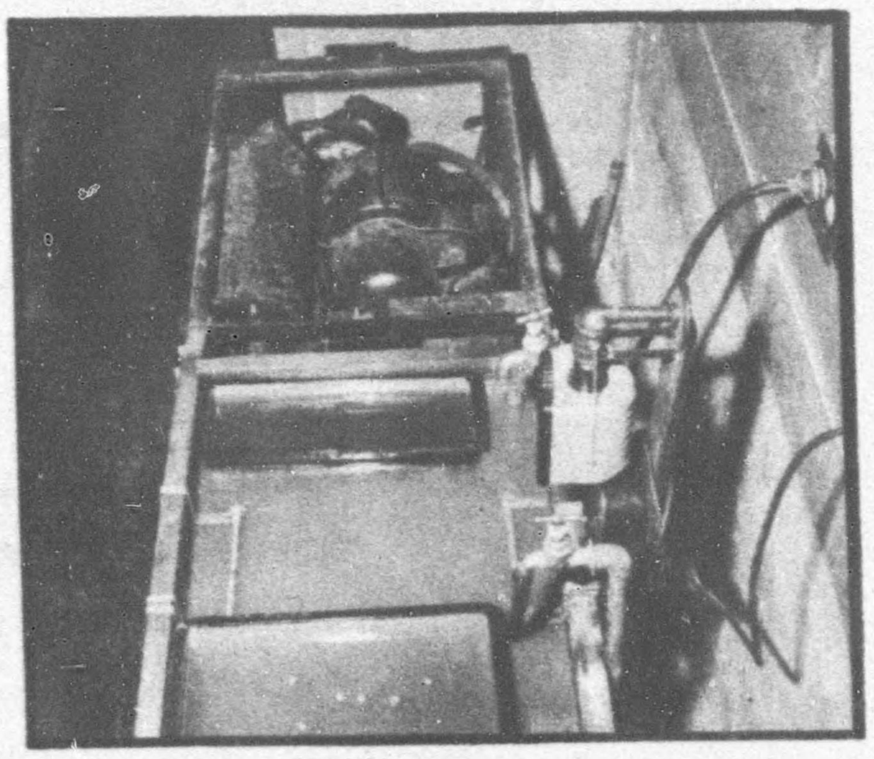
(c) The clamps retaining the community drain pipe (figure 9 (4), TM 8-629) and the recirculating tube (figure 9 (5)) were removed and the community drain tube was coupled directly to the drain fitting of the tank (figure 4 (1)).

(d) Utility plumbers extended the circulating tube (figure 9 (1)) and the recirculating tube (figure 9 (5)) with copper tubing and insulated the added length



Med. Dept. JAN Item 6-124-300 Processing Assembly, Radiographic Dark-Room, Field, 110 volt, 60 cy AC





DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



with rubber laboratory tubing. The couplings and fitting attached to the water circulating tubes were removed and used on the ends of the extended tubes.

(e) Remainder of installation and operating instructions are as prescribed in TM 8-629.

The Processing Assemblies as modified above have been in use during the hot months of July and August and operation in both cases has been satisfactory. The mechanical parts, motor and pump are easily accessible for cleaning and servicing without the inconvenience of draining and disassembling of the tank. The modification has shown no signs of impairing the efficiency of operation of the processing assembly.

## XI. Recent Department of the Army and FEC Publications

AR 35-1350, 18 Jul 49, C-1. Pay of Retired Commissioned and Warrant Officers of the Regular Army and Regular Air Force. See Par 65 - Retirement of Mentally Incompetent Officers

AR 615-365, 19 Jul 49 - Enlisted Personnel: Discharge - Convenience of the Government. Supersedes AR 615-365, 27 Oct 48 and C-3

AR 615-5, 21 Jul 49 - Enlisted Personnel: Reductions and Promotions. Par 22. Reduction because of Sickness. XR: SR 615-5-2, 21 Jul 49

AR 35-1320, 11 Aug 49, C-1 - Finance and Fiscal. General Provisions Relating to Pay of Military Personnel. Par 11 (added): Retention in Service for Medical Care or Hospitalization

DA CIR 93, 4 Aug 49 - Penicillin Crystalline, in Oil and Wax, 10 cc (Medical Stock No. 1-606-795)

DA CIR 95, 19 Aug 49 - Sec I. Army-Navy Catalog of Medical Materiel, Spare Parts Section. Sec. II. Rescission in ASF Supply Catalog MED-7-44, 10 Feb 45

DA BUL 24, 23 Aug 49 - (Joint Army and Air Force) Sec III. Medical Service Corps Promotion List. An act of Congress (P.L. 173-81st Cong) provides certain adjustments on the promotion list of Medical Service Corps of the Regular Army

SR 615-5-2, 21 Jul 49 - Enlisted Personnel. XR: AR 615-5, 21 Jul 49

SR 55-120-50, 25 Jul 49 - Extent of Dependent Travel Authorized when Military Personnel of Departments of the Army and the Air Force are Hospitalized

SR 420-45-7, 1 Aug 49 - Repairs and Utilities: Report of Insect and Rodent Control Activities. Supersedes Par 3. 60 d, TM 5-600, 6 Nov 45 and Sec IX, DA Cir 217, 48

SR 420-310-1, 1 Aug 49 - Repairs and Utilities: Insect and Rodent Control. Supersedes Sec VIII, Chapter 3, TM 5-600, 6 Nov 45 and C-7, 20 Jul 48, DA Cir 267, 48

SR 605-290-1, 12 Aug 49 - Officers: Separation Certificates. Par 2 b (3) (e) (f) (g): Discharge - Physical Disability due to Misconduct, etc

T/O&E 8-510, 21 Jul 49 - Field Hospital

GHQ SCAP CIR 17, 30 Jul 49 - Foreign Quarantine Regulations for Japan. Changes par 10, GHQ SCAP Cir 9, 29 Mar 48

GHQ SCAP CIR 20, 6 Sep 49 - Consumption of Japanese Food Products. SCAP Cir 11, 26 Apr 48 rescinded

GHQ FEC CIR 40, 6 Aug 49 - Repairs and Utilities. Rescinds Sec IV, GHQ FEC Cir 46, 23 Apr 47

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



PART II

TECHNICAL


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Physical Requirements for Officer Candidates | XII | 8 |
| Some Suggestions for Successful Audiometry | XIII | 8 |
| Disability | XIV | 9 |
| Psychological Factors in Atomic Warfare | XV | 11 |
| Curare - Curarine - Intocostrin - d. Tubocurarine | XVI | 14 |
| Trichlorethylene Degreaser Hazard | XVII | 17 |
| Army Medical Department Internships | XVIII | 18 |


## XII. Physical Requirements for Officer Candidates

The following extract from a Department of the Army letter (AGAO-R 352 OCS (25 Aug 49)CSGPA, subject: Physical Requirements for Officer Candidates, dated 30 August 1949), relative to physical examination of applicants for Officer Candidate School, received in General Headquarters, Far East Command, is published for the information of all examining medical officers and any other personnel concerned:

"a. Approximately every 5th man selected as a fully qualified applicant for Army Officer Candidate training and transferred to the Army Officer Candidate School, Fort Riley, Kansas, is found to be physically unqualified for such training on his arrival at the School, is relieved from the School, and is reassigned. The resultant waste of time and money for both the government and the rejected applicant, the loss in the productivity of our training facilities, the serious effect on enlisted morale and the continued laxity of the initial examining doctors in this matter, can no longer be tolerated.

"b. The physical qualifications required for selection and transfer to the Army Officer Candidate School are clearly set forth in AR 40-100 (paragraph 16) and are easily determinable by any qualified examining doctor. In view of this, the duplicate physical examination and screening of newly arrived applicants at the Officer Candidate School has been discontinued.

"c. It is necessary that the initial physical examination given to applicants as part of their routine processing in the field prior to their transfer to the Officer Candidate School, be completed according to the regulations, be thorough, and reliable. Continued laxity in this matter will be cause for appropriate corrective action.

"d. The Commanding General, Ground General School will submit a detailed report to the major commander concerned, on every officer candidate whose lack of progress in academics, leadership or in physical training is traceable to a disqualifying physical deficiency which was overlooked by the initial examining doctor or which was injudiciously waived. Upon receipt of this report, the major commander concerned will take any action he deems necessary to rectify the situation."

## XIII. Some Suggestions for Successful Audiometry - Captain Max J. Fischer, MC, 49th General Hospital, APO 1052

One of the most perplexing problems for those of us in the Far East Command doing physical examinations is that of the required audiometric examination. Many officers with apparently normal ears and normal whisper voice tests have audiograms which are below normal. The object of this article is to point out some of the conditions which bring about this incongruity, and wherever possible offer a solution.

Number one on the list is the fact that the standard audiometer is designed and calibrated to be used in a soundproof, or at least sound-deadened, room. This type of room not being available, it is necessary for those of us doing audiograms to select a room in the hospital which is as quiet as possible. Naturally, a room not opening on to a main corridor and if possible on the quiet side of the hospital would most nearly meet this condition. Another method of combating outside interference is the use of the binaural headset in place of the monaural earphone. This last suggestion has been adopted as standard procedure even in those clinics equipped with sound-treated rooms.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



The second problem is actual misuse of the autiometer during the tests. One of the most common mistakes is using what is termed the sliding technique in changing frequencies, as well as increasing or decreasing the intensity of the tone being transmitted. The technicians doing the tests should be cautioned never to move a dial on the audiometer without first cutting off the sound by use of the tone interrupter. This helps in two ways -- first, by preventing fatigue of the eighth cranial nerve and second, by preventing damage to the audiometer which, as we well know, is a delicately calibrated machine. It is well to note at this time that wherever possible the calibration of these machines should be checked every four to six months.

On several occasions audiometric readings have been seen which could not possibly be true. The only interpretation that can be made is that the technician performing the tests was confused by the readings on the intensity dial. It must be remembered that the white figures pertain to air conduction and the small red figures are for bone conduction. Wherever possible the use of the standard form as put out by the companies manufacturing audiometers should be used. This will aid very much in recording and simplifying the results of the audiometric tests.

In conclustion it is well to remember that even in the average sound-deadened rooms the noise level of about 15 decibels exists, so that in the interpretation of audiograms it must be borne in mind that outside interference will undoubtedly play a part in the final result in audiometric readings.

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XIV. Disability - Presented at the 49th General Hospital, Tokyo, Japan, by Dr. Earl D. McBride, Civilian Orthopedic Consultant

The subject of disability is one that is not taught in medical school. It seems that the doctor has to learn about court methods the hard way. We are taught in medical school that a bad result in fractures may be due to shortening or angulation or ankylosis, but we are not taught what the actual effect of such a bad result will be in relation to the loss of working capacity or loss of function in general to the individual.

In these modern times a great deal of the average doctor's practice consists of cases in which the results must show up in signed forms. It may be for the insurance company, Veterans Administration, crippled children's societies, or a vocational department of the government. It is quite necessary to be able to determine the extent of temporary healing period and the extent of permanent disability, especially in orthopedic practice. Furthermore, it is necessary to understand something of the legal aspects of testifying in court. In many instances there are wide variations in the evaluation of percentages of disability in compensation cases as expressed by the various examining doctors. The doctor examining the claimant may be accused of having too high a percentage and the doctor examining for the company may seem to have a very low percentage.

We are taught in medical school to develop a diagnosis through scientific reasoning. If those who evaluate disability and percentage could develop a scientific method of reasoning such disability claims, they would have fewer accusations of partiality. First of all, disability must have a basis of comparison with the normal. In compensation cases this comparison is with that of amputation. The law specifies a certain sum for amputations of certain limbs at certain levels. When the limb is disabled but not amputated the disability is expressed in a percentage of the whole. A further basis is often that of a specified occupation or that of ordinary manual labor. There is a great deal of difference whether the disability is applied to a specific vocation or to vocations in general. An individual might have a total permanent disability in respect to a vocation requiring expert function of the fingers, for example, whereas there would be a very moderate loss if the same disability were applied to any one of several hundred occupations.

A still different basis may occur in examinations for the Veterans Administration or for Army pension. This goal or basis on which to apply the disability must be determined preliminary to making the examination or final estimate.

In examining a case, much more must be done than simply obtaining the anatomical defects such as deformity or ankylosis. There are three factors which must be considered in evaluating disability. (1) The physiological effects of the abnormal changes. (2) The amount of rehabilitation that can be expected. (3) The extent of function as applied to occupational opportunities. The physiological effects of a deformity involve the subject of physics and geometry in respect to the extremities. For example, if the lower third of the humerus is fractured and a posterior angulation of severe degree occurs, then theoretically, from the standpoint of geometry, the elbow is in hyperextension when it is straightened and it can never reach the full extent of flexion. From the standpoint of physics, the effect of leverage has been pointed out. The pull on the biceps tendon, for

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



instance, has been transplanted backward. Likewise, the pull of the triceps is altered. In another instance, an inversion deformity of the ankle may occur as a result of a Pott's fracture, causing abnormal weight bearing on the inner side of the foot.

It is not enough to simply admit that this occurs. The examiner should have some idea of what the actual result of such a deformity will mean to the individual. We have estimated that if the foot is displaced laterally a distance of one inch, it will double the body weight on a line perpendicular to the inner malleolus. We can begin to see them what an angulation of this kind really means. Another problem has been estimated in that a man who must walk with his knee flexed to 60 degrees will double his body weight as it falls on the quadriceps muscle. If the examining doctor has some such understanding of what these problems in physics may mean to the crippled individual, than he can begin to evaluate the loss of function and the extent of disability to a much more intelligent degree.

In the rehabilitation of any case in which there is a claim, many factors of social importance are involved. The extent of education, the willingness of the individual, and the social opportunities are all important factors. The examining doctor should have a good conception of this phase of the individual's disability problem. Surgical reconstruction and improvement of the deformity is about all we usually think of. Psychotherapy may be an important factor in this phase of evaluating disability.

The only common basis which I have been able to find as a common denominator for evaluating disability is that of determining the extent of function in the disabled part. After the physiological and anatomical changes have been thoroughly considered and the possibilities of rehabilitation been given full consideration, then we are in a position to determine what the individual can do or cannot do in light of his crippling condition. What is function? What happens when a man uses his arm or leg for the purpose of carrying out certain occupational duties? If we study the word function, we find that it can be divided into several factors. If these factors are in turn given a relative percentage, then we may devise a measuring rod for determining the percentage of function. I have divided these factors as follows:

Quickness of action.....10%

Security.....10%

Coordination.....20%

Strength.....20%

Endurance.....20%

Bad Risk.....10%

Preemployment.....10%

Quickness of action is self-explanatory. Security is one's confidence in the injured limb. Coordination: When one does something suddenly and does not have to think about it. Strength: Strength is bound to be less if he does not have normal function. Endurance: May be able to work for a short time, but his strength will not last. Risk: If he is not safe to himself or to other men, risk must be questioned. Preemployment: What kind of work can he do after disability?

Take for an example an elbow which is limited from full extension to right angles. The main question is function: What can he do with his arm? We would rate him as follows:

| | |
|---|---|
| Quickness of action..... | 2% |
| Security..... | 2% |
| Coordination..... | 6% |
| Strength..... | 5% |
| Endurance..... | 10% |
| Risk..... | 1.5% |
| Preemployment..... | 2% |
| TOTAL DISABILITY..... | 28.5% |

The consideration of circumstances will apply to whatever the field may be.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



NV. Psychological Factors in Atomic Warfare - Colonel James P. Cooney, MC. (An Abstract)

Colonel James P. Cooney, MC, in his article "Psychological Factors in Atomic Warfare," published in the August 1949 issue of the American Journal of Public Health and The Nation's Health, set forth his ideas on this most important problem.

Since the advent of nuclear explosives in the so-called atom bomb, with its attendant ionizing radiations in massive amounts, unfortunate psychological reactions have developed in the minds of both the military and civilians. This reaction is one of intense fear and is directed against forces that cannot be seen, felt, or otherwise sensed. Colonel Cooney, in his article, states "I have observed the reactions of the military, who were not acquainted with the technical details, on two occasions, Bikini and Eniwetok, and the fear reaction of the uninitiated is appalling. The fear reaction of the uninitiated civilian is ever evident and is of such magnitude that it could well interefere with an important military mission in time of war."

The author's ideas on the psychological factors in atomic warfare are set forth in this article with the hope of stimulating thought and more careful consideration of this vital matter. His remarks are not to be interpreted as indicating anything less than the fullest respect for the phenomenon of radioactivity as a diabolical instrument of death and injury to man; however, he points out "we are justified in taking a rather hardboiled attitude toward this subject. Since we have no choice but to live with it, we must keep it in proper perspective."

He states "whenever living cells are affected by ionizing radiation, it is detrimental. It must be realized that nature has been always bombarding the populations of the world with ionizing radiation since the formation of the universe - by constant exposure to cosmic radiations and to radiations emanating from natural radioactive elements - such as radon and thoron.

"This kind of injury must be considered, not as standing by itself, but in connection with the total situation, i.e., weighed in relation to the objectives in view, both in regard to their importance under the circumstances and their probability of attainment. Unless we can thus integrate it with our whole philosophy of national defense, the atom bomb can prove a liability rather than an asset.

"With the publicity emanating from the atom bomb, the term 'Roentgen' has become a household word. A Roentgen is a term of physical measurement such as the 'centimeter' or the 'gram.' It is based upon one of the physical effects of certain types of electromagnetic waves that cannot be measured with a yardstick. The large step from such a physical measurement to expected biological behavior in human beings is based upon experimentation on lower animals, empirical observations, and clinical investigations. There are, however, many blank spaces in our experience and many superstitions have been introduced. Since it is impossible to stipulate all conditions of experimentation and observation in most of the articles written about radiation for lay consumption, an idea has evolved in many minds that any and all radiation exposure will cause immediate and mysterious injury or death. This reasoning is fallacious, but it is also plausible and has become contagious.

"The problem of radiation injury is not one which can be easily simplified. In fact, oversimplification of this danger may be the cause of a situation such as we are combating at this time. It seems desirable to explore radiation hazards more fully in relation to other hazards which are considered more common and acceptable.

"The permissible radiation dose is 0.2 or 0.1 r per day, or 0.3 r per week according to your authority. It should no longer be called the 'tolerance dose,' for no amount of radiation should be tolerated without good reason. One is willing however to name a dose so small that a person might be exposed to it every day of his life and suffer no observable injury or shortening of his life span.

"When one is dealing with radiation technicians or with industrial workers who are exposed to this hazard daily in their life's work, he can easily see how the maintenance of exposures at or below this level is a very desirable thing. Day-by-day contact with radiation or radioactive materials demands that a low limit of exposure be adhered to, if one is to avoid late complications of such chronic trauma. Similar occupational hazards exist in all branches of production - noxious gases and dust to the coal miner, the steel worker, and the chemical worker. It has been known for years that, if a miner is subjected to small amounts of dust containing silica, he eventually will develop silicosis, frequently complicated by tuberculosis, and perhaps leading to a fatal termination. For this reason, methods of counting and analyzing dust have been perfected, and forced ventilation systems

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



have been established to minimize the danger. This does not mean that if an individual makes a one day visit to a mine and inhales 100 times the daily minimal allowance for miners that he will develop silicosis. This tolerance limit has nothing in its definition which refers to acute exposure. Neither is the 0.1 r per day tolerance limit related to acute exposure in radiation.

"The total body dose of radiation received as an acute exposure is known from therapeutic experience to vary with the patient. This, and the lethal dose for man, have not received the same attention from rule-making bodies that the 'permissible dose' has had. We may take 450 r as the median lethal dose.

"Going further down the scale, one may consider a limit of 200 r, which may cause radiation sickness in 50 per cent of human subjects when delivered, as an acute dose of total body radiation. Some subjects may be quite sensitive to radiation and others quite resistant, so it is difficult to calculate the precise effects to be expected.

"It is not unusual to subject a patient to multiple x-rays of the skull, spine, long bones, gastrointestinal tract, kidneys, sinuses, etc., in a relatively short space of time, thus subjecting him to a dose of radiation which may well approach 25 r. These procedures are not used without purpose and the benefit from the information gained outweighs all fear as to the possible injury from radiation. Full body radiation in doses of the order of 25 r to 100 r have been given to patients for treatment of various conditions. Again, these exposures are prescribed for a purpose which outweighs the fear of radiation injury.

"It is not the purpose of this article to underestimate or understate the radiation hazard. But from a military standpoint the physical danger must be evaluated against the objective to be gained.

"War is fought with the knowledge that men will be killed. Campaigns are planned with expectation of losing so many thousand men. If you call these 'acceptable hazards' then it is obviously not wise to treat radiation hazards very differently. If acceptance of radiation hazard will lessen the other military hazards, then that is what one should accept. This can only be done, however, if the attitude of the men exposed is psychologically similar toward the two types of hazard. If they are going to be as much terrified by the knowledge that a recent atom bomb explosion has contaminated the ground they are walking over as they would be by seeing one in ten of their bodies fall by machine gun fire, one cannot apply the 'ideal' solution. What is dominant for actual percentage survival is the resultant of all the actual hazards. But for battle discipline and military effectiveness the dominant measure is not the hazard itself but the soldiers' estimation of the hazard.

"Men at war suffer many hazards, acute and chronic, besides bullets. Malaria, venereal disease, exposure to cold and wet, starvation, etc. Some of these, e.g., VD, are under-evalued by the doughboy. Others, e.g., filariasis, are grossly over-evalued. At present radiation is perhaps over-evalued worst of all, partly due to our great care in Operations Crossroads. That operation was conducted at the peacetime level of safety to personnel. Unless we had openly proclaimed immediate danger of war, the military level for hazardous training programs, such as we had actually adopted during the war, using live grenades and live ammunition in the machine guns, was not tolerable at Bikini. It must be emphasized that acceptable hazards in a peacetime operation, cannot be adhered to in wartime.

"Psychological training for the military level of acceptable radiation hazard is possible and should be prosecuted, even though operational field training does not permit this to be accomplished at the present time.

"We hear much about sterility as a result of exposure to ionizing radiation. It must be borne in mind that sterility results only from a large dose of acute radiation, or from smaller doses over a long period of time - a matter of years. Sterility also results from other accepted hazards encountered in war - venereal disease is one of the foremost causes of sterility. We are aware of hundreds of paraplegics resulting from spinal fractures, gun shot wounds of the cord, etc., during the last war who are not only sterile but impotent. Leukemia may be another late result in casualties from repeated radiation, but amebic dysentery and schistosomiasis carry a great delayed hazard, and so does the effect of beriberi, which was so prevalent among our prisoners-of-war."

Colonel Cooney further states that "I have knowledge of a death at Bikini caused by drinking wood alcohol. There were other deaths due to various types of accidents. At Eniwetok we had a death due to drowning, one due to a truck accident, and one due to a fracture of the skull encountered

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



in a fight. A sailor sustained a fracture of the cervical spine with severance of the cord by diving into shallow water. He will be paralyzed, sterile, and impotent as long as he lives. None of the above tragic deaths received national news publicity. However had we had a single death due to radiation, would it have been publicized? It would have received front page publicity throughout the country."

During August, 1946, Colonel Cooney interviewed and examined a large number of Japanese who had recovered from radiation sickness. He described them by saying "they appeared perfectly normal and were handicapped in no way toward pursuing their way of living. Such is not the case with thousands of our soldiers who participated in 'conventional' warfare in World War II. They are handicapped by loss of limbs and eyes. Neither is it true of many of the Japanese who received no radiation injury but received severe burns and traumatic injury as a result of the bombing. It has been estimated that from 5 to 15 per cent of the deaths at Hiroshima and Nagasaki were due to radiation. Why do we concentrate on the 15 per cent and forget the 85 per cent?" .

Referring to the development of the atomic bomb, Colonel Cooney states "the atomic bomb was developed as a blast weapon of war and strategically so used. The radiation effect was never considered to be the prime component of its effectiveness. The destruction attendant to the blast, heat, and secondary fires was paramount. In Japan there was no significant 'poisoning' of the ground by fission products or induced activity from neutron capture, and yet many believe that the bomb is primarily a weapon which destroys by mysterious radioactivity."

Having appeared before local defense agencies in many cities, Colonel Cooney finds that "they are preparing for defense against an atomic bomb attack - universally they are thinking only of radiation. Invariably they ask, 'Where will we get Geiger counters?' Geiger counters are not their only problem - fire-fighting equipment is many times more important, as are well organized rescue squads. 'But we have been told that we will not be able to go into a bombed city and rescue the injured.' Hiroshima and Nagasaki disprovesthis. The residual radiation from an air burst bomb is insignificant. The significant prompt radiation occurs in a matter of microseconds and does not extend beyond a 2,000 yard distance. Immediately after such a detonation, such as Hiroshima or Nagasaki, it is perfectly safe to enter into a bombed area and rescue the thousands whose injuries will be such that they will not be able to walk. Unless evacuation of these injured is effected, thousands will be burned to death by secondary fires. Such was the case at Hiroshima and Nagasaki. But how about an underwater or ground burst? In such cases certainly the residual radiation hazards would be increased many fold, but the blast and fire hazards and the prompt radiation hazard would be proportionately decreased, and in my opinion, the total number of casualties would be less.

"Much has been written about 'poisoned' water. In case the water supply of a city is contaminated by fission products or unfissioned material from an air burst of an atomic bomb, all the evidence on hand at present indicates that after passing through a modern filtration plant the water at the tap would be safe to drink. More work will be done to prove or disprove this statement. We do know from our experience at Bikini that the water from evaporators used on the ship is safe for drinking. Again we must not forget that frequent cases of typhoid fever still occur from drinking polluted water.

"If we are to live with this piece of ordnance and ever have to use it again in the defense of our way of living, we must acquire a practical attitude, not only toward its efficiency or limitations as a bomb, but also toward the possible effects and limitations of this 'mysterious' radiation.

"We must recognize that the casualties caused by the blast and burns from this weapon will be many times greater than the deaths caused by radiation. We must also dispel the erroneous idea that the rescue work of the injured will be impossible due to residual radiation."

Colonel Cooney stresses that "it is of the utmost importance that we recognize that the radiation hazards are ADDITIONAL hazards. They only add to the complexity and perhaps even the severity of the other hazards of total warfare. Therefore, we must not and cannot concentrate on this phase of atomic warfare to the detriment of other defensive preparations. Rather, we must know and understand the facts about ionizing radiations if we are to survive the other dangers."

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



XVI. Curare - Curarine - Intocostrin - d. Tubocurarine - Capt. Mary A. Younger, ANC, IVZnd Station Hospital, APO 547

The potential value of curare in medicine was discovered by Richard Gill, explorer, naturalist and author. During one of his early expeditions in the Ecuadorian jungles, as described in his book "White Water and Black Magic," he was thrown from a horse and suffered an injury that resulted in a spastic paraplegia. Temporarily incapacitated with the annoyances of the paraplegia, Gill chanced one day, in a discussion, to think about the possibilities of utilizing curare to relieve the spasticity. Upon further deliberation, he became enthused with the prospects of the satisfactory clinical application of the South American Indian arrow poison. Despite limiting physical infirmities, Gill organized another expedition into South America for the purpose of determining the source of curare and the methods of its extraction. After many months in the jungle during which time he gained the confidence of the Indians, Gill learned the various plants from which the curare was extracted. He learned also the secret methods by which the Indians brewed the crude mass with which they tipped their poison arrows. Gill brought back with him several botanical specimens which have since been deposited in the New York Garden and in the Arnold Arboretum at Harvard. He was confronted with considerable skepticism among manufacturing chemists as to the practicability of curare in clinical medicine, but, with a singleness of purpose that has characterized his whole experience with curare, he finally succeeded in interesting Dr. McIntyre, pharmacologist at the University of Nebraska, in developing the product. After initial experimentation in the laboratory by McIntyre and in the clinic by Bennett, the psychiatrist, the drug was turned over in 1939 to the E. R. Squibb laboratories for commercial preparation.

Intocostrin, the biologically standardized form of curare, prepared by E. R. Squibb and Company from the plant Chondodendron Tomentosum is one of the various trade names used for curare. The others, as mentioned in the title of this paper, trade marks of different companies, have a slight variation in their action, but all having curare-like effects, are defined as follows:

Curare: term used for an agent obtained as a crude extract from whatever source.

Curarine: denotes a relatively pure alkaloid from Strychnos toxifera.

d. Tubocurarine Chloride: refers to the crystalline, chemically pure, active material from the plant Chondodendron Tomentosum.

Intocostrin, a relaxant or muscle paralyzer, but not a pain relieving agent, is not a new anesthetic agent itself, but an adjunct to general anesthesia. It is made from purified Chondodendron Tomentosum (plant) extract in aqueous, sterile solution, supplied in 5 cc and 10 cc rubber capped vials. It is standardized by the rabbit "Head-Drop Crossover" test so that 1 cc is equivalent to 20 units - for intravenous and intramuscular administration. Intocostrin may be given with any type of anesthetic for any type of surgery, and is considered one of the greatest booms to successful anesthesia. Particularly useful in abdominal surgery, it produces contracted intestines and complete relaxation of the abdominal muscles, which is so important in these cases and so fully appreciated by the surgeon and so very heartening to the anesthetist.

The curare effect is the interruption of nerve impulses at the myoneural junction, so that the muscle will respond neither to injected acetylcholine nor to stimulation of its nerve. The action is entirely peripheral, so that a nerve bathed in curare will still conduct impulses.

Muscles are affected in the following order: first, those supplied by cranial nerves, followed by those of the trunk and extremities, and finally those of respiration; the diaphragm is the last muscle to be paralyzed. Subjectively, the effects of curare on an unanesthetized, unpremedicated patient are, in the order of appearance, weakness of the eyelids, strabismus with diplopia, weakness of throat and jaw muscles with inability to swallow or to cough, inability of the patient to raise himself, weakness of arms and legs, and finally respiratory paralysis. Recovery occurs, as in a too high spinal block, in the reverse order, so that the diaphragm and the intercostal muscles are the first to regain their functions. Under anesthesia, the only effect seen with a proper dose is the immediate relaxation of the abdominal muscles, with a large dose, respiratory depression.

INDICATIONS IN GIVING INTOCOSTRIN:

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



1. To soften convulsions in shock treatment of mental disease.

2. To secure muscular relaxation in surgery.

3. For relief of spastic and athetoid states.

4. For its relaxing effect in carrying out certain manipulative procedures.

5. As a diagnostic agent in Myasthenia gravis. (Myasthenia gravis is a syndrome of fatigue and exhaustion of the muscular system marked by progressive paralysis of muscles without sensory disturbance or atrophy. It may affect any muscle of the body, but especially those of the face, lips, tongue, throat and neck.)

CONTRAINDICATIONS FOR THE USE OF INTOCOSTRIN:

1. Myasthenia gravis.

2. Over-dosage which results in temporary respiratory paralysis.

3. The inability of the anesthetist to perform artificial respiration. The anesthetist must be certain, before administering curare, of his ability to care for the respiratory depression that may ensue by performing artificial respiration. The physiologic antidote for a toxic dose of curare is prostigmine 1 cc of a 1:2000 solution of the latter being injected intravenously. Controlled breathing of the patient is a necessary part of the anesthetist's armamentarium. If indicated, artificial respiration is best carried out in these cases where it is demanded, such as intermittent manual compression of the breathing bag on a gas machine, using either a tight face mask or an endotracheal tube.

ELIMINATION OF INTOCOSTRIN:

Intocostrin is partly destroyed by the liver and in part eliminated unaltered by the kidneys.

PHYSIOLOGIC ANTIDOTE:

Prostigmine 1:2000 solution- - -1 cc IV with the ability of performing artificial respiration and using oxygen under pressure. An adequate airway.

DOSAGE AND ADMINISTRATION:

1. In softening convulsions of shock therapy: 1/2 unit per pound of body weight, administered intravenously as a sustained 1 to 1-1/2 minute injection. Initial dose 20 units less than this.

2. In anesthesia: for muscular relaxation 20 to 60 units intravenously.

3. In spastic and athetoid states in children: 1/2 to 1-1/2 units per pound of body weight, administered intramuscularly at four-day intervals.

4. In manipulative procedures: Fractures and Dislocations - as in shock therapy or somewhat less.

5. In Myasthenia gravis: 1/15 to 1/5 of average adult shock therapy dose, IV.

6. In Tetanus: IV intermittently - 1 level above respiratory level.

TECHNIQUE OF ADMINISTRATION OF INTOCOSTRIN WITH NITROUS OXIDE---OXYGEN MIXTURE:

Patient receives the usual premedication with morphine and atropine. When the surgeon is ready to prepare the operative field, the initial dose of sodium pentothal is injected intravenously in an amount sufficient to produce narcosis to a level to produce analgesia. The inhalation of 2 liters of nitrous oxide and 2 liters of oxygen by the semi-closed carbon dioxide absorption technic is then started and is continued throughout the operation.

During the preparation of the operative field, small repeated doses of sodium pentothal

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



are given so that by the time the skin incision is made, the patient has reached the stage of surgical anesthesia. If necessary, a pharyngeal airway is inserted to establish an unobstructed airway. The total time from the start of anesthesia to the skin incision averages about three minutes.

When an incision is made, an initial dose of 20 to 40 units of Intocostrin should be given intravenously from a small syringe. This amount is usually sufficient to produce good relaxation in the average adult of good physical condition. Small initial doses are preferred for certain types of patients, for example, the aged, children. In some cases it is necessary to add additional 20 units when the peritoneum is opened. If the intraperitoneal portion of the operation is completed in twenty to thirty minutes, supplementary injections of Intocostrin are not usually indicated.

The character of respiration must be watched carefully for any change in rate, amplitude and for evidence of obstruction symptoms of an overdose of Intocostrin which is manifested by a decrease in the amplitude of the inspiratory and expiratory phases of breathing. The inspiratory phase of respiration becomes shorter and gasping in nature, developing with intercostal paralysis in the later states. Complete respiratory paralysis may ensue with overdosage of Intocostrin. Artificial respiration is accomplished by gentle manual compression of the breathing bag until spontaneous respiration is resumed.

THE USE OF INTCCOSTRIN IN METRAZOL SHOCK THERAPY AND ELECTRICAL SHOCK THERAPY:

Technique: When using Intocostrin to soften convulsions in metrazol shock therapy or electrical shock therapy, a dosage of 1/2 unit of Intocostrin per pound of body weight is an average dose. Nevertheless, as a precaution, a dose of 20 units less than this should be employed initially for adults. Intocostrin should be administered intravenously over a period of 1 to 1-1/2 minutes. Avoid rapid injection.

After the Intocostrin injection has been administered, the anesthetist should wait at least two minutes, until the patient can hardly raise his head, before giving the shock. If metrazol is used, tongue gag and hyperextension are not necessary; the hands are folded over the chest and the knees guarded against sharp flexion. As a precaution during electro-shock therapy, a soft folded dental roll or mouth gag is placed between the teeth just before the current is applied.

The recommended dosage is sufficient for patients with weak musculature. If the estimated dose fails to produce sufficient myoneural block, a time lapse of 24 hours is recommended.

If, with the first Intocostrin injection, the convulsion is mild and the patient shows a tendency to respiratory embarrassment, as evidenced by laryngeal strider, the dose of Intocostrin at the next administration should be reduced by approximately 10%.

Within two minutes after injection of Intocostrin, the physiologic effect should begin. The patient complains of haziness of vision. The anesthetist will observe bilateral ptosis with slight mystagmoid movements, relaxation of the face and heaviness, with relaxation, of the jaws. Later, the patient complains of tightness of the throat and huskiness of the voice, generalized heaviness and weakness of the neck muscles with inability to raise the head, followed by partial relaxation or complete paresis of the spinal muscles, legs and arms. Shallow respiration develops from partial relaxation of the intercostal and diaphragm muscles. The Intocostrin effect slowly recedes and should disappear in from 15 to 20 minutes. By the time the patient regains consciousness from the shock therapy, the effect has disappeared. Due to its central stimulation, metrazol has an action which appears to be partly antidotal to that of Intocostrin.

If respiratory failure should occur, artificial respiration should be instituted. Since the excretion of the drug is rapid, patients under artificial respiration spontaneously regain breathing power within a short time. The possible necessity for intubation should, however, be borne in mind, and an airway kept available on the tray for use in the event of obstructed breathing.

OPERATIVE PROCEDURES AND EXAMINATIONS AND TREATMENTS FOR WHICH RELAXATION WAS OBTAINED BY THE USE OF INTOCOSTRIN:

1. Plastic Surgery
2. Tonsillectomy
3. Cholecystectomy

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

4. Gastrectomy
5. Appendectomy
6. Hysterectomy
7. Gastric and Intestinal Resection
8. Perineal Resection
9. Rammstedt Operation
10. Laparotomy
11. Nephrectomy
12. Colectomy
13. Colostomy
14. Hernioplasty
15. Abdominoperineal Resection
16. Adrenalectomy
17. Bile duct exploration
18. Enterostomy
19. Closed Reduction
20. Open Reduction
21. Spastic Disease
22. Tetanus
23. Shock Therapy
24. Vaginal Examination
25. Laryngospasm
26. Prostoscopy
27. Cystoscopy
28. Hiccups

REFERENCES: 1. The Journal of The American Society of Anesthesiologists, September, 1947
2. Annual Convention of Anesthetists Institute, Berkley, Oakland and San Francisco, California, March 4 - 8, 1948

## XVII. Trichlorethylene Degreaser Hazard

The following extract from a Department of the Army letter, (AGAO-S 729.3 (2 Aug 49) CSGPA-M, AGAO-C, subject: Trichlorethylene Degreaser Hazard, dated 19 August 1949), received in General Headquarters, Far East Command, is published for the guidance of all concerned.

"2. The following is a digest of an article from 'Safety Briefs,' published by New Jersey State Safety Council, Inc.

a. A worker received first and second degree burns of the skin by cold vapors from an automatic trichlorethylene degreaser while attempting to recover a basket of small parts which had fallen to the bottom of the tank. The day before the worker entered the tank, the steam was turned off and the trichlorethylene removed through a drainage pipe on side of tank.

b. When the worker entered the tank the following day, the tank was cool and it was assumed that all trichlorethylene had been drained off. Shortly after entering

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



the tank the worker became unconscious and the foreman also collapsed when he came to his aid. Other workers nearby finally removed both men.

c. The foreman regained consciousness quickly and sustained apparently only a blister on one hand. The worker had several convulsions and did not regain consciousness until after admission to the hospital. He complained of double and blurred vision and a burning sensation of the skin.

d. Diagnosis of worker's condition was first-and-second degree burns of the skin, first-degree chemical burns of both conjunctivae, and corneal abrasion of the right eye. The examination of the injured's burns and investigation of all factors involved led to the conclusion that cold trichlorethylene vapor was the causative agent. Treatment consisted of pontocaine and penicillin ointment to the eyes, vaseline and compress bandages to the entire body and penicillin intramuscularly. The patient was discharged on the eleventh hospital day, and, after a total of 31 days lost, returned to work."

"3. a. Before entering such tanks a check should be made to insure that the liquid has been entirely drained and if flames of any kind are to be used in the tank, then it should be ventilated with forced draught, to free it of residual vapor before use of flame. If it is necessary for a workman to be exposed to concentrations of trichlorethylene vapors, as in the case of entering a degreasing tank, the customary precautionary air-line respirator is not sufficient. With safety line attached to the waist and a fellow-worker standing by in case of an emergency, it is essential that the workman wear impervious protective clothing and goggles.

"4. The inherent hazards of trichlorethylene as well as other degreasing agents as set forth herein should be brought to the attention of the commander of each installation where such operations are performed. It should be recognized that all of the solvents such as carbon tetrachloride, trichlorethylene and perchlorethylene commonly used by military personnel in many industrial operations such as degreasing spray painting, dry cleaning, paint removing, rust proofing and impregnating have a significant degree of toxicity when improperly used. Acute intoxication such as occurred in the case described is occasionally observed. Chronic intoxication due to prolonged exposure is more apt to occur because it is insidious in onset and does not invite the attention that sudden asphyxiation does.

"5. Responsible medical officer should familiarize himself with industrial operations on his post or installation and acquaint himself with the type of solvents in use and the nature of their toxic action. Many solvents are mixtures, and many are sold under trade names which do not indicate their composition. Information on the composition of these mixtures may be obtained by referring the inquiry to the Office of The Surgeon General, and stating the manufacturer's name and address."

## XVIII. Army Medical Department Internships

Each year the U. S. Army Medical Department offers internships to approximately 300 selected graduates of medical schools approved by the American Medical Association. This year, approximately 6,000 junior medical students have been apprised of the internship opportunities in the Army Medical Department and have been invited by Maj. Gen. R. W. Bliss, the Army Surgeon General, to visit Army General Hospitals in anticipation of applying for an internship for training beginning 1 July 1950. The selected candidates are commissioned in the Medical Corps Reserve, called to active duty, and assigned to Army General Hospitals for a 1-year rotating internship commencing each 1 July. Every consideration is given each candidate's preference of hospitals for assignment.

The 10 hospitals which will participate in the program of training interns have been approved by the Council on Medical Education and Hospitals of the American Medical Association and the Association of American Medical Colleges and are: Gorgas Hospital; Ancon, Canal Zone; Tripler General Hospital, Oahu, T. H.; Percy Jones General Hospital, Battle Creek, Michigan; Brooke General Hospital, San Antonio, Texas; Fitzsimons General Hospital, Denver, Colorado; Oliver General Hospital, Augusta, Ga.; Letterman General Hospital, San Francisco, Calif.; Madigan General Hospital, Tacoma, Wash.; Walter Reed General Hospital, Washington, D.C., and Valley Forge General Hospital, Phoenixville, Pa.

Among the various fields of medicine in which the new intern in the Army will receive

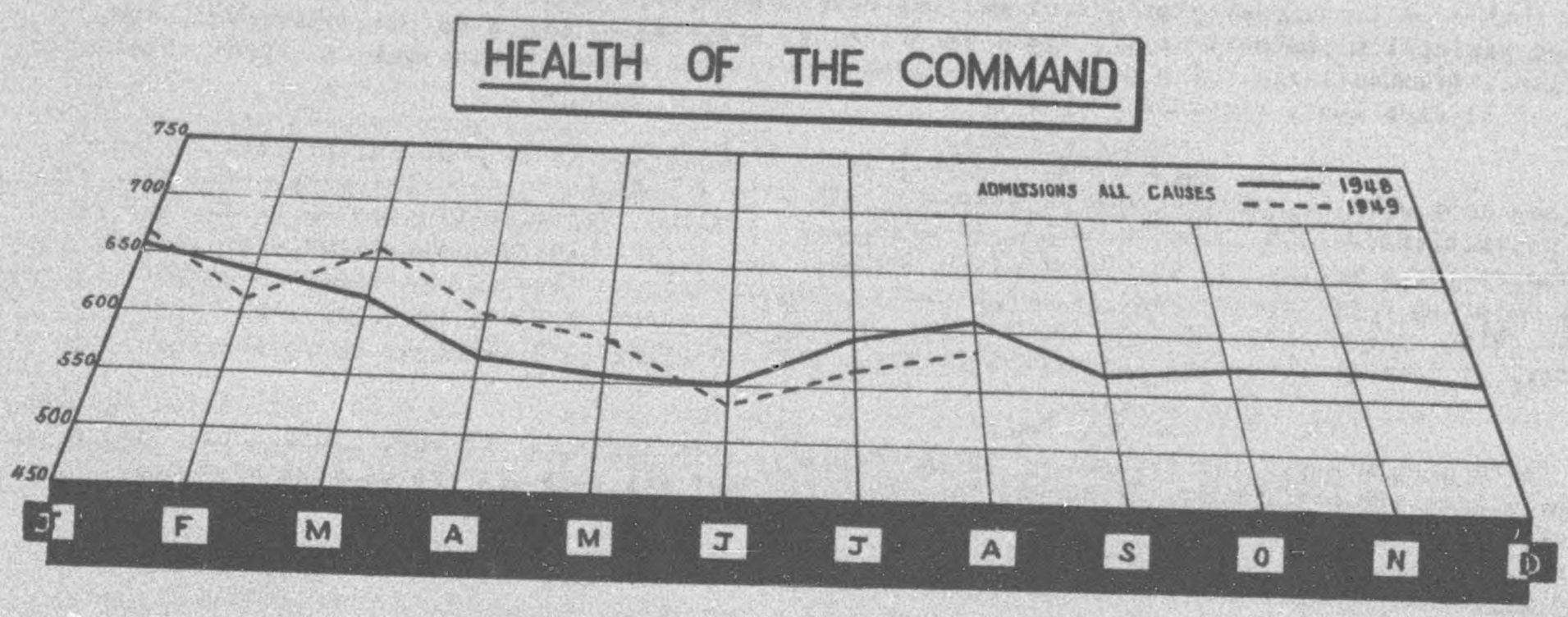
DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



training are: Surgical Service including Urology and Orthopedics; Medical Service including Pediatrics and Contagious Disease; Neuropsychiatric Service; Obstetrical and Gynecological Service; Ophthalmology and Otolaryngology, and Laboratory Service.

## PART III

## STATISTICAL




Admission rates per 1000 troops per annum for the four-week period ending 26 August 1949 were as follows:

| | FEC | JAPAN | MARBO | PHILCOM | RYCOM |
|---|---|---|---|---|---|
| All Causes | 577 | 610 | 257 | 487 | 638 |
| Disease | 528 | 556 | 210 | 447 | 605 |
| Injury | 50 | 53 | 48 | 39 | 33 |
| Psychiatric | 12 | 13 | 14 | 17 | 1.2 |
| Common Respiratory Diseases and Flu | 40 | 48 | 10 | 66 | 13 |
| Primary Atypical Pneumonia | 4.0 | 5.3 | 0 | 0 | .61 |
| Common Diarrhea | 2.7 | 2.6 | .93 | 1.9 | 4.3 |
| Bacillary Dysentery | .49 | .22 | 0 | 5.6 | .61 |
| Amebic Dysentery | .24 | .11 | 0 | 3.8 | 0 |
| Malaria, new | 4.5 | 4.8 | .93 | 1.9 | 5.5 |
| Infectious Hepatitis | 6.0 | 3.4 | 1.9 | 3.8 | 24 |
| Mycotic Dermatoses | 5.9 | 8.0 | 0 | 0 | 0 |
| Rheumatic Fever | .57 | .66 | 0 | 1.9 | 0 |
| Venereal Diseases | 185 | 178 | 27 | 152 | 342 |

The general health of the Far East Command for the month of August continues excellent. There was a slight increase in the rate for "all causes" over the rate of 569 cases per 1000 personnel per year for the previous month, to 577 this month. The increase for the month of August is chiefly attributable to the minor increased incidences of infectious hepatitis in RYCOM and Japan and venereal diseases among Air Force personnel.

The non-effective rate for August decreased from 21 per 1000 per day for July to 17. This is an unusual and unprecedented low non-effective rate. This low rate is affected favorably by the procedure of treating practically all venereal diseases on out-patient status. However, the seasonal contribution should not be overlooked. The rate for August 1948 was the same as July of this year, 21.

Diseases: The Far East Command admission rate for "all diseases" increased from 515 in July to 528 in August. This rate is lower than the rate for the same period last year which was 556.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Common Respiratory Diseases and Influenza: The Far East Command rate for common respiratory diseases and influenza remained essentially the same as last month, being 40 this month and 41 for July. However, it is to be expected that there will be increases in respiratory diseases as the winter season approaches.

Malaria: Malaria continues to decrease throughout the command, dropping from a rate of 13 in July to 10 this month. PHILCOM has continued to decrease from a rate of 19 in July of 1948 to 0 in July 1949. There was 1 case in August making a rate of 1.9 as compared to 13 for August of 1948. RYCOM showed an increased rate from 2 for July to 5.5 for August; however, this remains very favorable when compared to the same periods a year ago, which had rates of 44 and 52 respectively.

Infectious Diseases of the Central Nervous System: 26 cases of poliomyelitis with 1 death was reported for the month of August as compared to 19 cases and 1 death for the previous month. Eighteen of the cases and the 1 death occurred in Japan. The other 7 cases were in RYCOM. In August of 1948, 27 cases and 1 death were reported, 22 of which were in Japan, 1 in Korea, 2 in RYCOM and 2 in PHILCOM, including the 1 death. For this year through August, there have been 58 cases of poliomyelitis with 2 deaths, as compared to 79 cases and 6 deaths for the same period in 1948. Through the month of August, there have been 4 confirmed cases of Japanese B encephalitis reported this year. Three of the cases occurred in RYCOM during the month of June. The fourth case, which was the first to be reported in Japan, occurred in August. This is coexistent with the increased incidence of Jap B among Japanese nationals during the same period. One suspected case was reported in Japan in August but as yet has not been confirmed. In comparison with the same period in 1948 there were 28 cases and 5 deaths, all of which occurred in Japan. The above statistics on central nervous system diseases include all occupation personnel.

Venereal Diseases: The consolidated venereal diseases rate for this command for August increased from 181 for the previous month to 185. The total Army rate was the same as for July, 182. The total Air Force rate increased from 178 to 197.

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Evacuation:

Tabulated below are the number of patients evacuated from the major commands to the ZI during the four report weeks in August and the number of patients awaiting evacuation as of 26 August 1949:

| | BY AIR | BY WATER | TOTAL | PNTS AWAIT EVACUATION |
|---|---|---|---|---|
| JAPAN | 49 | 213 | 262 | 152 |
| MARBO | 22 | 4 | 26 | 4 |
| PHILCOM | 16 | 2 | 18 | 7 |
| RYCOM | 40 | 59 | 99 | 36 |
| | 127 | 278 | 405 | 199 |

Evacuations of military personnel per thousand strength for the period of 30 July to 26 August were as follows:

| | | | |
|---|---|---|---|
| JAPAN | 2.1 | PHILCOM | 1.9 |
| MARBO | 1.5 | RYCOM | 4.4 |
| FEC | 2.3 | | |

Hospitalization:

The bed status as of 26 August 1949 was as follows:

| | Total T/O Beds Auth. | Total T/O Beds Establ. | Total T/O Beds Occupd. | % Auth. T/O Beds Occupd. | % of Establ. Beds Occupd. |
|---|---|---|---|---|---|
| JAPAN | 4,650 | 4,330 | 1,671 | 36 | 39 |
| MARBO | 775 | 450 | 75 | 10 | 17 |
| PHILCOM | 1,250 | 1,250 | 826 | 66 | 66 |
| RYCOM | 750 | 443 | 292 | 39 | 66 |
| FEC | 7,425 | 6,473 | 2,864 | 39 | 44 |





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Capt. Vincent I. Hack, Editor

NO. NOV 1949 NOTICE

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



# IN THIS ISSUE


| | PAGE |
|---|---|
| Army Medical Department Internships | 18 |
| Curare - Curarine - Intocostrin - d. Tubocurarine | 14 |
| Disability | 9 |
| Hospital Administration Course | 3 |
| Mass Transfer of 3700 Medical Department Officers to USAF Completed | 4 |
| Modified Installation of Medical Department Item 6-124-300, Processing Assembly, Radiographic Darkroom, Field | 6 |
| New Training Program for Psychiatric Social Workers | 4 |
| Organization of the Medical Section | 1 |
| Physical Requirements for Officer Candidates | 8 |
| Psychiatric Evaluation Prior to Referral to Boards | 1 |
| Psychological Factors in Atomic Warfare | 11 |
| Recent Department of the Army and FEC Publications | 7 |
| Reserve Medical, Dental and Veterinary Officers Offered Short Term Tours | 3 |
| Senate Approves Employment of Civilian Doctors, Dentists | 3 |
| Some Suggestions for Successful Audiometry | 8 |
| Statistical | 19 |
| Trichlorethylene Degreaser Hazard | 17 |
| Utilization of Medical Service Corps Officers | 1 |
| WACs Train as Nurses' Aides | 4 |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

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# MED. SEC. GHQ. FEC.

VOL IV NO 9
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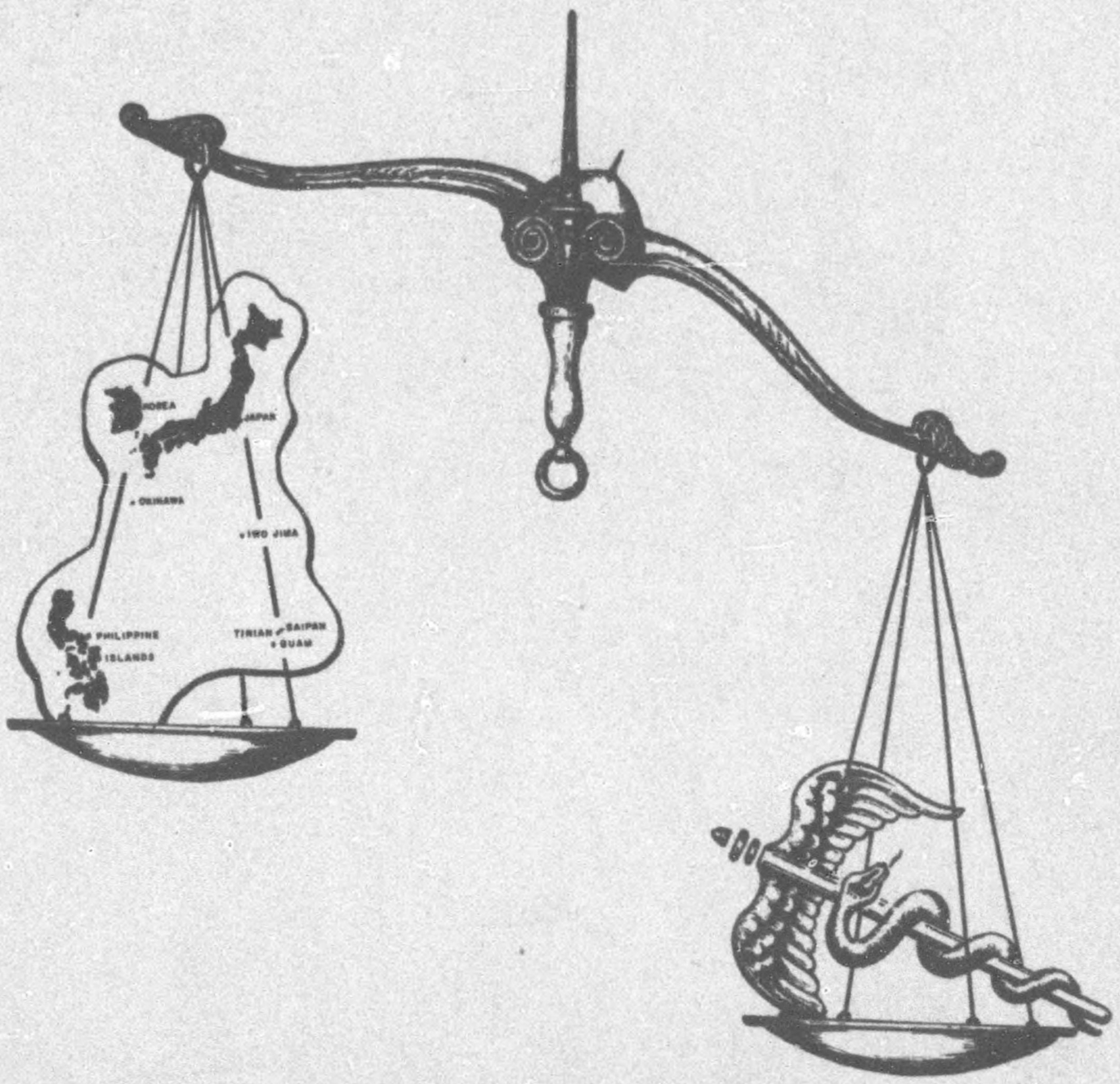



A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

# SURGEON'S CIRCULAR LETTER

RESTRICTED

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



## Organization of the Medical Section, GHQ, FEC

The following is a list of commissioned personnel currently assigned or attached to the Medical Section:

| | |
|---|---|
| Major General Edgar Erskine Hume | Chief Surgeon |
| Colonel Richard H. Eckhardt, MC | Deputy Surgeon |
| Major James L. LaCombe, MSC | Executive Officer |

### ADMINISTRATIVE DIVISION

| | |
|---|---|
| Lt. Elvis E. Bates, MSC | Director |
| WOJG Ernie L. Barker | Administrative Assistant and Chief Clerk |

### PLANS AND OPERATIONS DIVISION

| | |
|---|---|
| Lt. Col. Allen J. Blake, MSC | Director |
| Captain Vincent I. Hack, MSC | Publications Officer |
| Lt. Maurice F. Watson, MSC | Plans & Operations Officer |
| WOJG A.H.McIntire | Administrative Assistant |

### SUPPLY AND FISCAL DIVISION

| | |
|---|---|
| Lt. Col. E. W. Partin, MSC | Director |
| Major Glenn C. Irving, MSC | Deputy Director |

### PERSONNEL DIVISION

| | |
|---|---|
| Lt. Col. Charles Raulerson, MSC | Director |
| Captain Vernon H. Loisel, MSC | Deputy Director |

### CONSULTANTS DIVISION

| | |
|---|---|
| Colonel Irby J. Pollard, VC | Veterinary |
| Colonel Robert E. Blount, MC | Medical |
| Lt. Col. A. P. Long, MC | Preventive Medicine |
| Lt. Col. Harlan H. Taylor, MC | Surgical |
| Major Mildred I. Clark, ANC | Chief Nurse |
| Major Kermit E. Jones, MSC | Sanitary Engineer |
| Captain E. T. Brown, MSC | Statistics |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON'S CIRCULAR LETTER APO 500

NUMBER. . . . . 9 1 September 1949

PART I

ADMINISTRATIVE


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Organization of the Medical Section. . . . . | I | 1 |
| Physical Inspections of Troops . . . . . | II | 1 |
| Dissolution of Ad Hoc Committee on Medical and Hospital Services of the Armed Forces. . . . . | III | 2 |
| Military and Civilian Intern Programs. . . . . | IV | 2 |
| White Hospital Uniform for Women Officers of the ANC and WMSC. . . . . | V | 2 |
| Employment of Civilian Physicians in the Far East Command. . . . . | VI | 3 |
| Physical Evaluation; Hospitalization; Disposition - For Officers . . . . . | VII | 4 |
| Plasma, Normal Human, Dried (Medical Stock Nos. 1-607-100 and 1-607-104) . . . . . | VIII | 5 |
| Recent Department of the Army and FEC Publications . . . . . | IX | 5 |
| Index. . . . . | Inside Back Cover | |


## I. Organization of the Medical Section

Departure from the Medical Section, General Headquarters, Far East Command: Captain James D. Grindell, MSC, completed his overseas tour of duty and has departed to the ZI for assignment in the Office of the Surgeon General.

## II. Physical Inspections of Troops

Routine monthly physical inspections of troops required by AR 615-250 were discontinued by Department of Army order on 28 August 1948. The instructions to the major commands in the Far East implementing this order included the statement, "pending issuance of further instructions, you will conduct such inspections as conditions in your area require". This contemplates the accomplishment of such physical inspections of troops as are considered necessary by responsible commanders and medical officers in the fulfillment of their obligations and responsibilities in the maintenance of the health and well-being of the troops.

The principal purposes of these inspections are to determine the physical status of those concerned and to detect unsatisfactory conditions of personal hygiene and overt evidence of the presence of unrecognized or unreported communicable and infectious diseases, vermin infestations and skin disorders. Inspections of this nature, while preferably accomplished by a medical officer, may, when necessary, be done by non-medical personnel. Officers of the Medical Service Corps and non-commissioned officers of the Medical Department should be utilized in this capacity when available. When this cannot be done and a troop physical inspection is indicated, the unit surgeon or other officer of the Medical Department should provide the necessary instructions to the non-medical department officers called upon to conduct the inspection. This instruction need not be extensive but should provide sufficient fundamental information to ensure that the inspection is carried out in an orderly systematic fashion and that the necessary observations are made. In the instructions, it should be emphasized that the inspection is not a diagnostic procedure and that all questionable findings are to be referred to a medical officer for further observation.

The type of physical inspections discussed above should not be confused with those which are required by AR 40-210 for known contacts of communicable diseases such as diphtheria, scarlet fever, septic sore throat, measles, mumps, etc. Such inspections should be conducted by a medical officer.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



III. Dissolution of Ad Hoc Committee on Medical and Hospital Services of the Armed Forces

By order of the Secretary of Defense, Louis Johnson, the Ad Hoc Committee on Medical and Hospital services of the Armed Forces was dissolved 6 July, the date Dr. Raymond B. Allen assumed his duties as Director of the Medical Services Division. As a further step in unifying administration and operation of the Armed Forces Medical Services, Secretary Johnson established a Medical Services Division within his own office for the purpose of establishing and controlling general policies, standards and programs for the medical services of the three military Departments and related National Military Establishment agencies. The members of the Ad Hoc Committee which had been established in December 1947 have been released from any obligation to serve after its dissolution, however, Dr. Allen will no doubt develop a close working relationship with the three Surgeons General and will rely on them heavily for advice and counsel.

The Ad Hoc Committee on Medical Hospital Services had as its members Dr. Paul R. Hawley who served as Chairman until his resignation on 27 January 1949; Major General Raymond W. Bliss, the Surgeon General of the Army and Chairman since 11 February 1949; Rear Admiral Clifford A. Swanson, Surgeon General of the Navy; Major General Malcolm C. Grow, the Air Surgeon of the Air Force, and Rear Admiral J. T. Boone as Executive Secretary.

The Committee was given the mission of making a thorough, objective and impartial study of the medical services of the Armed Forces with a view to obtaining at the earliest possible date the maximum degree of coordination, efficiency and economy in the operation of these services.

A comprehensive study of the medical hospital services of the Armed Forces has been completed by the Committee. Many of the Committee's recommendations have been implemented and others are in process of implementation. Some of the areas on which the Committee conducted studies included hospitalization; standardization of preventive medicine practices and procedures; medical research; professional services; medical supply; standards of medical nomenclature; and aviation medicine. The National Military Establishment will benefit greatly by these and other studies of the Ad Hoc Committee on Medical and Hospital Services of the Armed Forces.

IV. Military and Civilian Intern Programs

Of the 486 medical school graduates and senior medical students selected by the Surgeon General of the Army for the Military Intern and Civilian Intern programs, 231 medical school graduates of the Military Intern program have been assigned to Army general hospitals and 255 senior medical school seniors chosen for the Civilian Intern program have been assigned to civilian hospitals.

V. White Hospital Uniform for Women Officers of the ANC and WMSC

Special Regulations No. 600-37-1, contains the following information concerning white hospital uniforms for women officers of the Army Nurse Corps and Women's Medical Specialist Corps:

"The white hospital uniform for members of the Army Nurse Corps and Women's Medical Specialist Corps is authorized for wear immediately, but will not be required for wear prior to 1 July 1950. This uniform will not be available from the Quartermaster Corps until such time as it becomes the required uniform, but may be purchased commercially. Personnel purchasing the white uniform will be held responsible that the uniform conforms to United States Army specification.

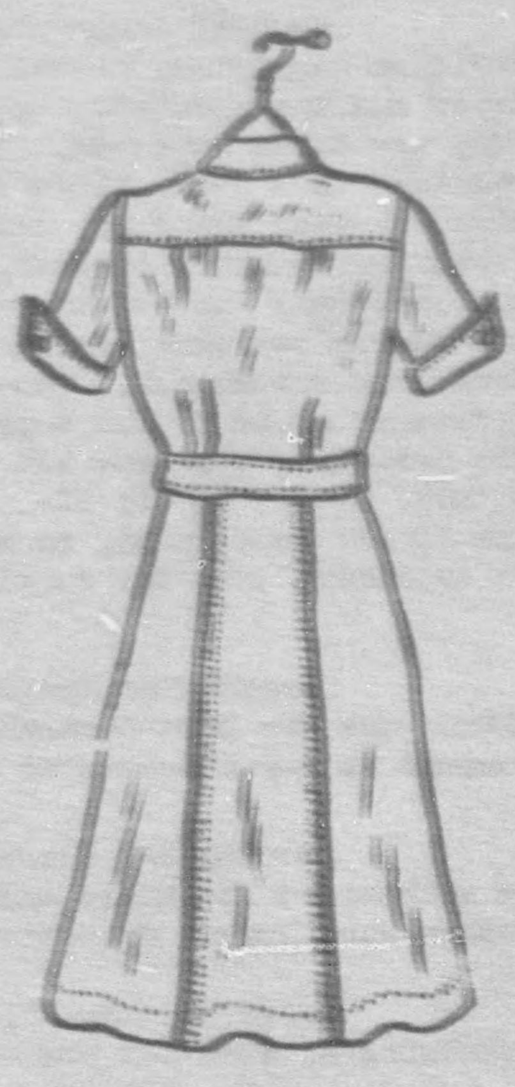
"Design - (1) Cap, cotton, white, nurses' (fig 1):

Of adopted design, a one-piece hospital cap with self-lacing in the back.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

(2) Uniform, cotton, white, nurses"(Figs. 2 and 3):

Of adopted design, a one-piece, open-front style with shoulder yoke; set-in waist band; tailored, notched lapel collar; waist closing with three 30-ligne pearl buttons; a separate belt, 2½ inches in width, fastening with two 30-ligne pearl buttons; a false breast pocket on the left side; long sleeves with French cuff, or short sleeves with pointed cuff, both fastening with plain gold or pearl cufflinks; seven-gore skirt, the fly front closing with small removable buttons; and two pockets set into the skirt panels.



"Adopted standards of cloth - (1) Fabrics: Two-ply combed cotton poplin, 4-ounce; or 2/1 combed cotton twill, 5-ounce: (2) Color: White.

"Insignia: Insignia of grade and insignia of the Army Nurse Corps or Women's Medical Specialist Corps will be worn on the white hospital uniform as shown in figure 2.

## VI. Employment of Civilian Physicians in the Far East Command

Due to the critical shortage of Medical Corps officer personnel in the FEC, the Commander-in-Chief, Far East, has announced a new policy for the employment of civilian physicians to fill vacancies considered appropriate by the Surgeons of the major Commands. The major commands have been authorized to requisition civilian physicians from the ZI through Civilian Personnel channels and to accept for civilian employment non-regular Medical Corps officers scheduled to return to the ZI for separation from the service upon expiration of their current category commitments. It is believed that the recruitment of civilian medical personnel will materially alleviate the heavy medical workload in the FEC and assist in maintaining the high standard of medical service as established by the Medical Department.

Civilian physicians are subject to the rules and regulations applicable to Department of the Army civilian personnel serving in this command. Civilian Personnel officers in the headquarters of the major commands are familiar with these rules and regulations and should be consulted concerning details of employment, tenure of contracts, transportation agreements, etc. In general, the following criteria will govern.

Non-regular medical officers scheduled to return to the ZI for separation from the service upon expiration of their current category commitments may:

(a) Be separated from the service in their present station overseas and accept employment as civilian physicians. Such employment may be in their present positions, or any other suitable positions, as determined by the Surgeon of the major command.

(b) Be separated from the service in their present station overseas and transfer to any other major command within the FEC for duty as civilian physicians. Such transfer may be ac-

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



complished from any, to any, or within any of the major commands in the FEC.

Medical Corps officers who have converted to a civilian physician status and any other civilian physicians travelling to the FEC to fill positions in any major command must execute contract and transportation agreements for the minimum period applicable to the major command in which they are to be employed. Therefore, an individual who travels from the ZI to Japan for duty in response to a requisition submitted by a major command, through civilian personnel channels, will sign a 2-year contract; whereas an individual travelling from the ZI to Guam for duty will sign a 1-year agreement. However, if a non-regular Medical Corps officer, who has completed his tour of overseas duty and his current category commitment, desires to convert to civilian physician status and remain overseas in his present station he may execute a contract agreement for a period of not less than six months. Should he desire to transfer from one major command to another, such contract agreement would be for a period not less than 1 year. It should be borne in mind however that the two preceding provisos are applicable only when a service individual converts to civilian status without return to the ZI. If an officer indicates a desire for civilian employment but returns to the ZI for separation, no matter for how short a period, the length of his contract agreement will be dependent upon the regulations governing the major command in which he is to be employed.

Coordinated travel of dependents of civilian physicians from the ZI to any major command within the Far East Command is authorized. In addition such travel is authorized from one major command to any other major command within the FEC, providing housing is available.

Coordinated travel of dependents of civilian physicians travelling from the ZI to the FEC is authorized for those employed in Japan or the Philippines. It is anticipated that in the near future such travel from the ZI will be authorized for those employed in Guam and Okinawa.

Salaries range from $6235 (P-5) for practitioners, general duty, and $7432 (P-6) for specialists, plus the overseas differential which has been established for the various major commands.

In addition to the procurement of civilian physicians for duty with the Medical Department, FEC, the following provisions have been established to retain non-regular Medical Corps officers on duty in the Medical Department, Army-wide:

Non-regular medical officers who have completed their tour of overseas duty and their current category commitment and are scheduled to depart the FEC for the ZI for separation from the service may submit a request through channels to CINCFE for extention of category commitment and request transfer to a specific locality, provided they agree to extend their tour of service for an additional year.

(1) Such officers may extend their category commitment and continue to serve in their present locality overseas.

(2) Such officers may extend their category commitment and transfer to another major command within the FEC.

(3) Such officers may extend their category commitment and request transfer to another overseas command, i.e., from the FEC to the European Command, via travel through the United States.

(4) Such officers may extend their category commitment and request assignment to a ZI station hospital or a non-teaching hospital.

(ED's NOTE: Authority for the above provisions is contained in a letter from the Office of the Surgeon General, dated 25 April 1949. Copies of the letter were dispatched to the Surgeons of the major commands, FEC. See Surgeon's Circular Letter, Vol IV, No. 7, 1 July 1949.)

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VII. Physical Evaluation; Hospitalization; Disposition - for Officers

Information and procedures relative to the hospitalization, physical evaluation to determine physical fitness and disposition of officers and the disposition of cases of this type are contained in SR 605-240-1-AFR 36-13. Physical fitness includes both physical and mental capacity for

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



active military service. The regulations apply to all Army and Air Force commissioned and warrant officers on active duty, both Regular and Reserve, except reservists on active duty training tours under the training program for Reserve components.

VIII. Plasma, Normal Human, Dried (Medical Stock Nos. 1-607-100 and 1-607-104)

Department of the Army Circular 88 and Air Force Letter 160-26, dated 24 June 1949 is quoted below for the information of personnel concerned:

"Pending receipt of new or reprocessed stock Nos. 1-607-100 plasma, normal human, dried, 250 cc, and 1-607-104 plasma, normal human, dried, 500 cc, installation medical personnel are authorized to use stocks on hand, even though the expiration date on the label or package has passed, provided the rubber stopper and tubing are in good condition and mixture with solution is satisfactorily effected.

"Medical supply depots are authorized to issue outdated stocks of these items provided physical appearance is satisfactory, after exhaustion of stocks bearing an unexpired date, pending receipt of new or reprocessed stocks.

"Unsatisfactory stocks of these items will be handled as directed in current instructions from the Surgeon General's Office for disposal of excess Red Cross items.

"The above instructions apply to zone of interior Army and Air Force installations and oversea commands."

IX. Recent Department of the Army and FEC Publications

AR 40-605, 20 Jun 49 - Medical Service, Neuropsychiatry

AR 40-530, 11 Jul 49 - Medical Service: Hospitalization and Evacuation

DA CIR 83, 15 Jun 49 - Medical Dept Officers - Promotion upon Relief from Active Duty, Sec IV

DA CIR 88, 24 Jun 49 - Plasma, Normal Human, Dried (Medical Stock No. 1-607-100 and 1-607-104) - (See Sec. VIII, above)

DA CIR 89, 1 Jul 49 - Rates for Treatment in Army Medical Facilities during Fiscal Year 1950. Sec VII

DA G.O. 30, 27 Jun 49 - Medical Installation Discontinued

DA G.O. 32, 6 Jul 49 - Sec II. Army Institute of Pathology, Washington 25, D.C. Redesignated Armed Forces Institute of Pathology, an Independent Activity Under Control of Surgeon General, DA, etc.

JAAFAR 1-11-65, 29 Jun 49 - Implementation of Programs for Hospitalization in the Armed Forces and for Improvement in the Utilization of Existing Hospital Facilities in Alaska

SR 725-10-2, 8 Jun 49 - Issue of Supplies and Equipment. Processing Requisitions

SR 40-590-75, 10 Jun 49 - Medical Service: Ward and Mess Attendant Training for Civilian Personnel

SR 715-5-20, 13 Jun 49 - Procurement of Supplies and Equipment: Small Purchases Procedure

SR 325-10-1, 16 Jun 49 - C-3: List of Approved Recurring Reports. Page 10, Medical Dept

SR 40-530-1, 17 Jun 49 - Medical Service: Medical Regulating within Army Areas

SR 40-10-5, 30 Jun 49 - C-1: Utilization of Personnel and Treatment Facilities

SR 40-506-10, 1 Jul 49 - Medical Service: Civilian Medical Attendance for Air Force Personnel

SR 40-515-1, 1 Jul 49 - Hospitalization of Army Patients in Naval Medical Facilities

SR 40-510-10, 1 Jul 49 - Medical Service: Civilian Dental Attendance for Personnel of the Air Force

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



SR 40-1715-10, 1 Jul 49 - Medical Service: Blood for Transfusion and Other purposes - provisions applicable to Air Force Installations, activities, hospitals or personnel

SR 140-210-10, 1 Jul 49 - ORC; Active Duty - Periods less than 30 days - Certain Medical Department Officers

SR 350-110-10, 1 Jul 49 - Education and Training: Common subjects Branch Advanced Courses, School Year 1949-50. Medical, Page 6

SR 605-60-41, 8 Jul 49 - Officers: Dental Officer Procurement - Senior Student Program

SR 40-590-43, 11 Jul 49 - C-1: Admission and Treatment of Merchant Seamen in Medical Facilities of Department of the Army outside Continental U.S.

SR 730-5-1, 15 Jul 49 - Oversea Supply: Distribution

SB 38-7, 13 May 49 - C-4: Regulated Items. Par 3 c. Addition

T/O&E 11-25, 3 Jun 49 - Signal Construction Battalion. Sec III. Page 6. Medical

GHQ FEC CIR 34, 7 Jul 49 - Casualty Reports: Seriously Ill; Death; Line of Duty; Casualty Symbols. Rescinds FEC CIR 13, 31 Jan 47 and FEC CIR 96, 1 Oct 47

## PART II

## TECHNICAL


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Penetrating Wounds of the Abdomen. . . . . | X | 6 |
| Observations on External Otitis. . . . . | XI | 9 |
| Program for Trachoma Control, Kyoto Prefecture, Honshu, Japan, 1948-1949 . . . . . | XII | 10 |
| Hemorrhagic Teratoma of the Right Ovary Complicated by Appendicitis in a Three Year Old. . . . . | XIII | 15 |
| Administration of Oxygen . . . . . | XIV | 17 |


X. Penetrating Wounds of the Abdomen - Lt. Col. Harlan H. Taylor, MC, Surgical Consultant, GHQ, FEC

One of the most vulnerable regions of the human body is the abdominal cavity. Prior to the introduction of gunpowder and firearms there were relatively few cases of penetrating abdominal injuries although wounds of the abdomen have occurred since the early days of lances, swords, daggers and arrows.

In the evolution of our modern civilization, penetrating wounds of the abdomen with a resultant high mortality rate have occurred not only from our advanced deadly weapons and high velocity missiles, but from the very tempo of our every day lives. Although the diagnosis and treatment of early abdominal wounds would be of interest, this paper will be confined to the subject of abdominal wounds as of the present time.

The factor of great importance in the cutting down and lowering the mortality rate from the previously high figures of only a few years ago is the establishment of a more precise pre-operative diagnosis in these cases. In pre-operative diagnosis of intra-abdominal injury, wounds of chest, the back, the perineum, and the thighs, must also be evaluated. For this reason an orderly method of diagnosis should be carried out.

The greatest aid to diagnosis is the determination of the course of the missile. These steps are evaluation of the general condition and complaint of the patient. A rapid survey of the patient's shock condition, the condition of heart and lungs, and the sensorium is made. Urine and stomach contents are examined grossly for blood. The rectum is digitally examined in all wounds of the lower abdomen, pelvis or buttocks, and the presence or absence of blood is noted. An x-ray for localization is made as soon as possible.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



After this routine has been carried out we then ask ourselves the questions: (1) Has the peritoneal cavity been perforated?, (2) Is there a possibility that some intra-abdominal catastrophe has occurred?, (3) What structures, intraperitoneal or adjacent are or could be involved?.

By being able to trace the course of the missile one may gain more information than by any other means. Actually, no place on the body is completely exempt as a possible wound of entrance into the abdomen.

In the main, it can be assumed that all missiles maintain a straight course through soft tissues. Bony structures may deflect a missile but it is surprising how frequently the fragment passes directly through bone, maintaining its course unaltered.

When velocity is completely lost, the fragment may come to rest at the most dependent portion of a serous cavity. The attitude of the patient's body at the time of injury has always been very important in arriving at a diagnosis and finding.

In perforating wounds, it is well to know which is the wound of entrance and which the wound of exit. There is nearly always more tissue damage on exit, both to the deeper structures and to the skin. Hence, the wound of exit is larger and there is a greater probability of visual damage in its vicinity.

Among the factors influencing the appearance of the patient are the number and severity of the wounds, the amount of hemorrhage and shock, the time elapsed since injury or time lag, as it is called, and prior treatment. Therefore, the condition of a patient with no abdominal injury may appear critical in contrast to that of a patient who, although appearing well, has definite intra-abdominal pathology. As the patient responds to treatment for shock, one gathers more information. His statements concerning abdominal pains are then worth considering but must be weighed along with all other findings. Yet complaint of abdominal pain does not necessarily point to intra-abdominal pathology, for wounds of the abdominal walls on adjacent structures may be extremely painful and simulate intra-abdominal injury.

For a wounded patient, palpation of the abdomen is important chiefly for the demonstration of rigidity. Nearly every abdomen containing appreciable amounts of free blood or free gastrointestinal contents will demonstrate rigidity. Nearly all wounded patients have received morphine prior to admission to the hospital. Rigidity, however, is not affected by narcosis to the same degree as is tenderness. Thus, tenderness and rebound tenderness are valuable but depend on the time factor, the damage to the abdominal wall and adjacent structure and the individual's personal equation more than does rigidity. The renal region should be palpated, but tenderness there does not in itself signify renal damage. Few abdominal signs or symptoms may be present with hemorrhage or spillage retroperitoneally or into the lesser amental cavity. It is not at all unusual to find a badly lacerated spleen in a patient in whom abdominal examination has shown nothing significant. Severe abdominal rigidity may occur without any intra-abdominal pathologic change. This is particularly true in wounds which damage the hip, the pelvis or the spine. Therefore, abdominal rigidity is a very important factor in diagnosis but not in itself conclusive.

I only want to mention digital examination of the rectum in that it also is an important diagnostic aid as rectal palpation contributes a great deal of information. A tear of the rectal wall or an adjacent foreign body may be palpable. If the course of the missile suggests rectal damage, the pressure of blood on the palpating finger is confirmatory evidence.

Catheterization gives valuable information for any wound which may involve the genito-urinary organs. The gross and microscopic appearance of the urine aids in diagnosing injuries of the bladder and kidneys. Hematuria is evidence of damage to the genito-urinary tract, but its absence does not eliminate such damage. When there is a doubt concerning a laceration of the bladder, the bladder may be emptied by catheter, after which a measured amount of sterile isotonic saline is introduced to determine whether it can all be immediately withdrawn.

Auscultation of the abdomen - the presence or absence of peristaltic sounds has considerable significance, though there is no absolute rule. When sounds are present there is not likely to be any perforation of a hollow viscus, though intestinal rumblings and sounds may be heard, when there is a small hole in the pelvic or sigmoid colon. Yet absence of sounds is very suggestive of perforation of hollow viscera, but auscultation should be repeated at frequent intervals, especially if there is no rigidity and if other signs - such as those of hemorrhage - are absent. A blow in the stomach, or exposure to blast, may cause peristalsis to cease for an hour or so, after which it starts again.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



The x-ray is another valuable adjunct in the diagnosis and treatment of this type of wound in locating the foreign body, or the course of the missile can be studied and treated accordingly.

Thus summing up the diagnostic steps as to what procedure one should follow as I have briefly tried to do, I would say the prime consideration is plotting the course of the missile, inspection, palpation and auscultation. Then comes the all-important question in the minds of the surgeon, "When to operate". Everyone agrees that patients with abdominal wounds need operation as early as possible if they are to have the best chance, but too literal an interpretation of that phrase "as early as possible" may result in bad judgment if a thorough pre-operative diagnosis is not done and all signs, symptoms and diagnostic aids carefully evaluated. Jully, in his book Field Surgery in Total War states that "today there can be no excuse for conservative treatment of abdominal gunshot or penetrating injuries" and that surgical intervention is therefore advised in all cases except (1) The one in which general peritonitis is well advanced; (2) Those failing to show evidence of hollow viscus perforation and in which there is not encugh blood loss to endanger life; (3) The moribund cases.

Proved sound surgical principles nowhere find greater application than in the technical problems usually encountered in the treatment of abdominal wounds.

While exploring the peritoneal cavity, an attempt is made to retrace the course of the missile. Radical shifts in position of viscera, particularly small bowel, that may occur subsequent to passage of the missile through the peritoneal cavity should be kept constantly in mind. If there has been severe hemorrhage rapid search is made for its course and the bleeding vessels ligated. Any apparent gross perforation of the colon is isolated as completely as possible in order to minimize contamination. If small bowel perforation is likely, the entire intestine is systematically explored from proximal jejunum to terminal ileum. Each perforation is tagged with an Allis's forceps and careful count is kept. Finding an "odd" number of perforations must be explained. Careful search is made for perforations between the leaves of the mesentery which are likely to be overlooked and are troublesome to close. The ascending and descending colons are mobilized and their posterior surfaces inspected if perforation from behind is at all likely. In the same way the duodenus is mobilized by lateral incision and retracted medially to expose its posterior surface. The posterior surface of the stomach is exposed through the avascular gastrocolic omentum or through the transverse mesocolon. I mention these sites as they are the most likely overlooked areas.

Time does not permit describing the difficult operative procedures within the abdominal cavity, therefore only a few important procedures will be mentioned briefly. With perforation of the small bowel I prefer an end-to-end anastomosis chiefly because it can be done more rapidly; an open, two layer anastomosis by use of nonabsorbable sutures in the serovascular layers and, I think this is important, to remove a greater portion of the bowel at the antimesenteric border as this gives a lumen of a greater size.

Dealing with the large bowel is somewhat different. First, it is known that contamination of the peritoneum by colon contents is the single most lethal factor producing death in abdominal wounds. Thus the principle of exteriorization of lacerations of the colon is particularly adaptable to this type of wound, even the smallest perforation of the colon is usually surrounded by an area of ecchymosis which, when seen in the exteriorized loop, invariably undergoes necrosis and sloughs to the very margin of the ecchymotic area. The difficulties of estimation of the extent of this necrosis make simple closure of these lacerations hazardous. In addition, exteriorization accomplishes decompression.

With penetrating and lacerating wounds of the liver first, of course, control excessive hemorrhage either by hot sponges or use of a piece of muscle taken from the abdominal wall. If at all possible do not pack with gauze to control hemorrhage for it has been shown that these packs become a medium of infection, forming a sinus, and are very difficult to remove. Also, secondary hemorrhage may follow their removal. To my mind, regardless of the size of the lesion, the most important consideration is drain the bile, to the outside, as bile in the peritoneal cavity is a serious type of peritonitis and makes for a serious complication and many times death.

I only want to mention one striking feature of wounds of the spleen. The penetrating or gunshot wounds of the spleen differ from the usual closed traumatic rupture of the spleen in that, unless there is a penetration of the great vessels near the hilum of the spleen they do not continue

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



to bleed and no satisfactory explanation for this has yet been given. In extensive lacerations, fragments of the spleen in the thorax or free in the peritoneal cavity are sometimes seen. There is usually considerable free blood in the peritoneal cavity, but the spleen itself at operation is either not bleeding at all or gently oozing.

In summarizing I will give the important factors in the management of these penetrating wounds of the abdomen as they are agreed upon by the recent literature from civilian sources as well as the observations during recent World War II. The improvement in the mortality rate is largely explained by the following factors:

1. The treatment of shock and the availability and use of plasma and blood.

2. A more precise pre-operative diagnosis in these cases.

3. Improved surgical methods and techniques which also should include the improved facilities for the preoperative and postoperative treatment in these cases, such as the improved method of gastrointestinal drainage and decompression by the Miller-Abbott, Levine and Wangensteen tubes, also a better understanding of the importance of a proper fluid and electrolyte balance.

4. The judicious use of chemotherapeutic agents.

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XI. Observations on External Otitis - Lt. Col. Harlan H. Taylor, MC, Surgical Consultant, GHQ, FEC and Capt. Max J. Fischer, MC, Chief, EENT Section, 49th General Hospital, Tokyo, Japan

During the past six weeks an increasing number of patients, all with the same complaint of external otitis, have been seen in EENT Clinics. It has frequently been observed that a great many of these patients had been seen previously in their unit dispensary and had received their primary therapy at that level. This primary treatment usually consisted of aural irrigations, local therapy with resatin drops or salicylic acid in alcohol drops, and in many cases I.M. penicillin. Apparently this form of therapy had not been completely satisfactory because it allowed the external auditory canal to remain moist.

A routine has been started at the 49th General Hospital for the treatment of External Otitis with very favorable results. The following is an outline of the proposed therapy.

1. The canal is wiped dry with small cotton applicators.

2. A small cotton wick of cresatin (Metacresylacetale) is placed in the ear canal and allowed to remain for 24 hours.

3. After the cresatin wick is removed the canal is again wiped dry and then dusted with a powder made up of 50% penicillin crystals and 50% sulfanilamide crystals, not Sulfa Powder.

4. The dry wipes and dusting is repeated at 48 hour intervals over a period of about one week or until the infection is controlled.

5. The patient is cautioned to keep the ear dry as we believe this is of prime importance.

6. There is only one exception to this S.O.P. If on the first visit the ear canal is edamatous and swollen shut a cotton wick of 1% Silver Nitrate is placed in the canal and allowed to remain for 24 hours. Then the standard routine as outlined above is begun.

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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



XII. Program for Trachoma Control, Kyoto Prefecture, Honshu, Japan, 1948 - 1949 - Captain John D. Gliesmann, MC

Early in 1948, the Japanese Department of Health of the Prefecture of Kyoto began work on plans for a state-wide drive against trachoma. Kyoto Prefecture, a population area of 1,700,000 people, like every other prefecture of post-war Japan, is under the supervision of an American Civil Affairs Team. The Japanese departments of health come within the scope of Civil Affairs operations and are under the direct supervision of American military or civilian medical officers. The trachoma program as with any other major program was a joint planning effort of Japanese and American personnel.

Japanese physicians have for years been aware of the high incidence of trachoma among their people. For the nation as a whole an incidence of five to ten percent is commonly estimated, but it was well known that certain areas of every major city were infected at levels approaching one hundred percent.

The better educated classes of Japan, as would be expected, have an intelligent concept of this disease, but among their less fortunate countrymen, superstition is the rule. "Trä-hom" (as it is pronounced in Japan) is considered by many to be the direct result of eating meat from a cat, dog, or horse. Among the ETA class (the fourth or lowest class of Japanese society), trachoma is so common that it is considered a characteristic stigma of the class itself. In one of the northern prefectures of Japan, a god had been erected to this disease, and cure was said to result when the finger of the patient was wiped first across his own eye and then across the eye of the god. The god apparently did an excellent business until the health department, over the protests of the populace in general and the priests in particular, put an end to his activities some years ago.

In organizing a program of trachoma control, community action under the direction of the health department was to be the theme. Professors, school principals and teachers, municipal and prefectural authorities, private physicians, PTAs, opthalmologists, welfare officials, and private citizens were contacted. The aims of the committee on trachoma control, which was organized out of these various groups, was (1) to provide a method by which trachoma could eventually be eliminated from this prefecture and (2) to suggest a pattern which might be of value on a national scale.

With severely limited finances, it was obvious that the prefectural government could not expect to finance the treatment of even a small percentage of the estimated 180,000 cases. It was therefore determined that a full scale program would be conducted in one representative primary school of each of the twenty-four health center districts*(1). Each of these drives would be designed to achieve the maximum advertising and educational value possible, with the intention of increasing the interest and understanding of the private citizen and private physician.

In addition to the educational aspects of each individual program, state-wide education was planned. The professor of opthalmology of the Kyoto Prefectural Medical College prepared a paper on the clinical symptoms of trachoma, including a description of MacCallum's classification of the disease, for distribution to physicians throughout the prefecture. Among the educational measures aimed at the general public were (1) a trachoma-slogan contest which was sponsored in the schools, (2) six thousand posters on trachoma, printed by the health department for distribution to schools, health centers, bath hourse, and food distribution points, (3) articles on trachoma in newspapers, medical journals, and children's magazines and (4) street broadcasts, radio broadcasts, and film strips.

The three trachoma drives which are the subject of this report were conducted in the following manner: (1) In the schools selected for survey and treatment, the school faculty in conjunction with the district health center prepared the local educational program. The local PTA groups were extremely valuable in this regard. (2) A trachoma team, consisting of ophthalmologists, nurses, and clerks from the Kyoto Prefectural Medical College, conducted the examination of children and general citizens on specified days as arranged by the school authorities. (3) School nurses, hospital nurses, and health center nurses were enlisted to supervise the use of the medicines.

The following protocol considers the results achieved in the first three schools selected for this work:

*(1) comparable to county divisions

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



PROTOCOL

1. Sonobe Primary School, Sonobe Town, Funai-gun*(1), Kyoto Prefecture
2. Yosei Primary School, Sakyo District, Kyoto City, Kyoto Prefecture
3. Yoshiwara Primary School, Maizuru City, Kyoto Prefecture

A. Results of Survey
B. Drug and Method of Use
C. Results of Treatment

In results of survey (A) and results of treatment (C), itemized percentages are recorded in nearest one-tenth of one percent. In total percentages, fractions of one percent are not recorded.

In results of treatment only those cases who conscientiously reported for observation are considered.

I. Sonobe Primary School, Sonobe Town, Funai-gun, Kyoto Prefecture

A. Results of Survey:

| | Total | | Pre. School | | School | | Adults | |
|---|---|---|---|---|---|---|---|---|
| Number of Examinations | 2,104 | | 605 | | 1,349 | | 150 | |
| Diagnosis | No. | %/2104 | No. | %/605 | No. | %/1349 | No. | %/150 |
| Tr. Dubium | 46 | 2.2 | 12 | 2.0 | 22 | 1.6 | 12 | 8.0 |
| Tr. Acutum | 3 | 1 | 1 | .2 | 2 | .1 | 0 | .0 |
| Tr. I | 53 | 2.5 | 19 | 3.1 | 22 | 1.6 | 12 | 8.0 |
| Tr. II(a) | 39 | 1.9 | 3 | .5 | 25 | 1.9 | 11 | 7.3 |
| Tr. II(b) | 10 | .5 | 1 | ..2 | 5 | .4 | 4 | 2.7 |
| Tr. III | 15 | .7 | 1 | .2 | 5 | .4 | 9 | 6.0 |
| Tr. IV | 22 | 1.0 | 0 | .0 | 0 | .0 | 22 | 14.7 |
| Total | 188 | 9% | 37 | 6% | 81 | 6% | 70 | 47% |

(NOTE: The adults examined in this survey were parents and relatives of infected children.)

B. Drug and Method of Use:

American Sulfathiozole (Squibb and Sons)

*(1) synonymous with "county"

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



0 - 2 years. . . . . .0.5 gm / pt / day
3 - 4 years. . . . . .1.0 gm
5 - 10 years . . . . . .1.5 gm
11 - 13 years . . . . . .2.0 gm
14 - 16 years . . . . . .2.6 gm
Over 17 years . . . . . .3.0 gm

Sulfathiozole was given in divided doses every four (4) hours with equivalent amounts of soda bicarbonate and liberal fluids (6-10-2-6-10-2). Medication was given for one week alternating with a week of rest, until a total of three weeks of treatment had been given.

C. Results of Treatment:

| Diagnosis | Total Treated | Cured | | Marked Effect | | Slight Effect | | No Effect | |
|---|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | No. | % |
| Tr. Dubium | 37 | 14 | 37.9 | 10 | 27.0 | 2 | 5.4 | 11 | 29.7 |
| Tr. Acutum | 3 | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 0 | 0.0 |
| Tr. I | 42 | 16 | 38.1 | 16 | 38.1 | 2 | 4.8 | 8 | 19.0 |
| Tr. II(a) | 34 | 11 | 32.4 | 16 | 47.1 | 5 | 14.7 | 2 | 5.9 |
| Tr. II(b) | 4 | 2 | 50.0 | 2 | 50.0 | 0 | 0.0 | 0 | 0.0 |
| Tr. III | 10 | 1 | 10.0 | 3 | 30.0 | 5 | 50.0 | 1 | 10.0 |
| Tr. IV | 1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 100.0 |
| Total | 131 | 44 | 34% | 50 | 38% | 14 | 11% | 23 | 18% |

Cured.....34%
Marked Effect.....38%
Effective Rate.....72%

II. Yosei Primary School, Sakyo District, Kyoto City, Kyoto Prefecture

A. Results of Survey:

| | Total | | Pre. School | | School | | Adults | |
|---|---|---|---|---|---|---|---|---|
| Number of Examinations | 3,047 | | 63 | | 1,501 | | 1,483 | |
| Diagnosis | No. | %/3047 | No. | %/63 | No. | %/1501 | No. | %/1483 |
| Tr. Dubium | 142 | 4.7 | 2 | 3.2 | 91 | 9.1 | 49 | 3.3 |
| Tr. Acutum | 7 | 0.2 | 1 | 1.6 | 5 | 0.3 | 1 | 0.1 |
| Tr. I | 335 | 11.0 | 24 | 38.1 | 103 | 6.9 | 208 | 14.1 |
| Tr. II(a) | 160 | 5.2 | 14 | 22.2 | 76 | 5.1 | 70 | 4.7 |
| Tr. II(b) | 124 | 4.1 | 4 | 6.5 | 48 | 3.2 | 72 | 4.9 |
| Tr. III | 347 | 11.4 | 1 | 1.6 | 32 | 2.1 | 314 | 21.2 |
| Tr. IV | 135 | 4.4 | 0 | 0 | 0 | 0 | 135 | 9.1 |
| Total | 1,250 | 41% | 46 | 73% | 355 | 24% | 849 | 57% |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



B. Drug and Method of Use:

Neo-gerison (P-amino-sulfonamide), a sulfanilamide manufactured by the Yamanouchi Drug Company was used. Dosages were the same as those used at Sonobe, though in this case the daily quantity was divided in five (5) portions (6-10-2-6-10). Again the drug was given for one (1) week, alternating with a week of rest until a total of three (3) weeks of treatment had been given.

C. Results of Treatment:

| Diagnosis | Total Treated | Cured No. | Cured % | Marked Effect No. | Marked Effect % | Slight Effect No. | Slight Effect % | No Effect No. | No Effect % |
|---|---|---|---|---|---|---|---|---|---|
| Tr. Dubium | 73 | 42 | 57.5 | 11 | 15.1 | 5 | 6.8 | 15 | 20.5 |
| Tr. Acutum | 5 | 2 | 40.0 | 2 | 40.0 | 0 | 0.0 | 1 | 20.0 |
| Tr. I | 143 | 58 | 40.6 | 30 | 21.0 | 20 | 14.0 | 35 | 24.4 |
| Tr. II(a) | 65 | 11 | 16.9 | 42 | 64.6 | 3 | 4.6 | 9 | 13.8 |
| Tr. II(b) | 37 | 14 | 37.8 | 21 | 56.8 | 1 | 2.7 | 1 | 2.7 |
| Tr. III | 26 | 3 | 11.5 | 9 | 34.6 | 3 | 11.5 | 11 | 42.3 |
| Tr. IV | | | | | | | | | |
| Total | 349 | 130 | 37% | 115 | 33% | 32 | 9% | 72 | 21% |

Cured.....37%
Marked Effect.....33%
Effective Rate.....70%

III. Yoshiwara Primary School, Maizuru City, Kyoto Prefecture

A. Results of Survey:

| Number of Examinations | Total 394 | School Children Only |
|---|---|---|
| Diagnosis | Number | %394 |
| Tr. Dubium | 35 | 9.0 |
| Tr. Acutum | 0 | 0.0 |
| Tr. I | 88 | 22.3 |
| Tr. II(a) | 39 | 10.0 |
| Tr. II(b) | 13 | 3.3 |
| Tr. III | 18 | 4.6 |
| Tr. IV | 0 | 0.0 |
| Total | 193 | 49% |

B. Drug and Method of Use:

Salsol tablets, a Japanese sulfathiozole manufactured by Takeda Pharmaceutical Company, was used in the following manner:

| | | |
|---|---|---|
| (Four times daily at 8-12-4 and 8) | 1st - 2nd grades | 1.0 gm/pt/day |
| | 3rd - 4th grades | 1.5 gm/pt/day |
| | 5th - 6th grades | 2.0 gm/pt/day |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



The children received two (2) weeks of treatment followed by one (1) week of rest and another week of treatment. The course of therapy was originally scheduled for three (3) consecutive weeks, but because of a large number of minor reactions (88), i.e., fever, headache, rash, a week of rest was given following the second week of treatment. All reactions cleared spontaneously with withdrawal of the drug. For reasons unknown, soda bicarbonate was not used in this program.

C. Results of Treatment:

| Diagnosis | Total Treated | Cured No. | Cured % | Marked Effect No. | Marked Effect % | Slight Effect No. | Slight Effect % | No Effect No. | No Effect % |
|---|---|---|---|---|---|---|---|---|---|
| Tr. Dubium | 35 | 32 | 91.4 | 3 | 8.5 | 0 | 0.0 | 0 | 0.0 |
| Tr. Acutum | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Tr. I | 88 | 64 | 72.7 | 20 | 22.7 | 2 | 2.3 | 2 | 2.3 |
| Tr. II(a) | 39 | 15 | 38.5 | 16 | 41.0 | 6 | 15.4 | 2 | 5.1 |
| Tr. II(b) | 13 | 3 | 23.1 | 9 | 69.2 | 1 | 7.7 | 0 | 0.0 |
| Tr. III | 18 | 6 | 33.3 | 8 | 44.4 | 3 | 16.7 | 1 | 5.6 |
| Tr. IV | 0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Total | 193 | 120 | 62% | 56 | 29% | 12 | 6% | 5 | 3% |

Cured.....62%
Marked Effect.....29%
Effective Rate.....91%

In evaluating charts and figures it is necessary to remember that they are a product of the Japanese system of medicine. To translate accurately the details of "criteria of cure" is not within the scope of this paper. Suffice to say, the Japanese ophthalmologists responsible for this work are well trained conscientious practitioners, who have had a wealth of experience in dealing with this disease. It should be noted, however, that the available American literature regarding the treatment of trachoma with sulfa preparations, is not overly optimistic concerning anticipated results in Stages II and III.

No statistics are available at the present time on the number of cases which have relapsed or been reinfected six (6) months or one (1) year following treatment. Nor has the efficacy of sulfa in conjunction with other accepted forms of therapy (douches, expression of follicles etc.) been investigated to any considerable extent in this prefecture.

DISCUSSION

1. Trachoma is a prevalent disease in all areas of this prefecture, having its highest incidence in the crowded areas of the principal cities (Kyoto and Maizuru) and its lowest incidence in the more rural areas.

2. No conclusions can be drawn from this study as to its incidence in the various age groups, though it is probable that in areas such as Yosei over 90% of the population have the disease sometime during their lives.

3. The largest incidence of cases was found in Stage I. This perhaps would not be the case in accurate sampling of the general population and is attributed to the preponderance of primary school children included in the surveys.

4. Although the total incidence of infection at Yosei and Yoshiwara was forty-one (41) and forty-none (49) percent respectively, it is probable that the Sonobe incidence of nine (9) percent more accurately presents the average condition in this prefecture.

5. Type of drug used, whether American sulfathiozole, Japanese sulfathiozole or Japanese sulfanilamide apparently made very little difference. The effective rate of treatment (cured, plus

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



marked effect) was in fact higher at the Yoshiwara Primary School where Japanese sulfathiozole was used. Two factors should be considered in the marked improvement shown at Yoshiwara:

a. Only school children were considered in the survey, consequently the patients could be more effectively controlled.

b. Sulfathiozole was given for 2 consecutive weeks followed by a week of rest at Yoshiwara, whereas in the other programs it was given on alternate weeks. American literature recommends three consecutive weeks of treatment.

6. Better results might have been expected had dosage been calculated on a weight basis rather than on an age or grade basis, i.e., one third to one half grain per pound of body weight per day.

7. Although the best results were achieved in the early stages of the disease, it is effective to some extent in Stage III. It is of considerable interest that in many cases well developed follicles disappeared or were considerably reduced.

| Stage III | Cured | Marked Effect | Effective Rate |
|---|---|---|---|
| Sonobe | 10.0% | 30.0% | 40.0% |
| Yosei | 11.5% | 34.6% | 46.1% |
| Yoshiwara | 33.3% | 44.4% | 77.7% |

With cases in the early stages of the disease, rates of cure of from 40 to 60% can be expected, with rates of effectiveness of 70-90%.

8. To consolidate the gains and insure permanent continuation of this program, this prefecture is establishing opthalmology clinics in various health centers. At the present time two (2) such clinics are in operation in Kyoto City.

## CONCLUSIONS

Sulfa preparations are effective in the treatment of trachoma up to and including Stage III. The aim of such a program should be the education of the general public and improvement of overall attention to diseases of the eyes. On the basis of this report, the following points are emphasized:

a. On a mass basis the treatment of school children is much more effective since they can be more effectively controlled.

b. Japanese sulfa is quite as effective for the treatment of trachoma as the more expensive American preparations.

c. Sulfa should be given in dosages approximating one-third to one-half grain per pound of body weight per day. Three weeks of continuous therapy is recommended, and apparently the administration of sulfa in 4 equal quantities per day (8-12-4-8) is quite as efficacious as the "around the clock" schedule. Liberal fluids and equivalent amounts of soda bicarbonate should of course be used.

Trachoma control is a legitimate and essential public health program and provides a unique opportunity for prefectural health departments to coordinate the energies of various private and governmental organizations in a worth while community effort. This program serves to stimulate the interest of the general public, not only in trachoma control but in public health activities in general, and is secondarily of considerable value in enhancing the prestige of the prefectural department of health and its health center system.

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## XIII. Hemorrhagic Teratoma of the Right Ovary Complicated by Appendicitis in a Three Year Old

Lt. Col. Sanford W. Frenoh, III, MC, and Capt. William J. Hills, MC, 118th Station Hospital

This case is an unusual one and is being reported because of the fact that the presence of a large palpable mass in the abdomen of a three year old white female obscured and caused a delay in the making of a proper diagnosis of acute appendicitis.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



CASE REPORT

CHIEF COMPLAINT: The patient is a three year old white female dependent who entered the 118th Station Hospital on 16 June 1949 with the chief complaint of pain in the abdomen of three days duration.

PRESENT ILLNESS: On 13 June 1949, three days before admission to this hospital, patient developed cramping pains of an intermittent character located in the suprapubic region. This was accompanied by anorexia, but the patient had had no fever nor had she vomited. The following day the patient continued with her intermittent abdominal pains, she ate fairly well, had no fever, but cried a lot. The following day, which was the day before she entered the hospital, she began to vomit and vomited some material which looked like undigested food. During the remainder of the day, she vomited four times.

PAST HISTORY: Patient has had none of the usual childhood diseases, but a cavernous hemangioma was removed from her scalp at the age of eight months with Radium and Carbon Dioxide snow. At birth the patient had a rather severe scleroma which lasted for about two weeks.

FAMILY HISTORY: Mother has diabetes. No other familial diseases.

CLINICAL COURSE: On admission to the hospital the patient was a well developed, well nourished, white female child three years of age in no acute distress. Physical examination was essentially negative with the exception of a globular mass about the size of an orange which was easily palpable in the mid line of the lower abdomen just about the pubis. This mass was slightly tender but could not be moved. On rectal examination the mass was easily palpable between the rectal finger and the examining hand on the child's abdomen. Her temperature was 99.2°, respirations 24 and pulse rate 100. RBC was 2,850,000; Hb, 8.5; WBC, 12, 700 with 62% polys. There was no vomiting and the child spent a rather comfortable night. However, on the day after admission, her temperature had risen to 100.2°, and she was vomiting and quite irritable. That afternoon under drop ether anesthesia this mass was palpated and it appeared to be in the position of the uterus and it was thought by one examiner that from both superolateral poles there were appendages coming off the mass. It was decided at the time that an exploratory laparotomy was in order. She was transfused on the next day with 300 cc of whole blood and spent a rather comfortable day. However, late in the evening the temperature had risen to 102.4°, with a RBC of 3,700,000; Hb, 11.5; WBC, 11.500 with 76% polys. The child was very restless, crying frequently and holding her lower abdomen, and seemed to be in much pain. The febrile reaction was thought to be due to the manipulation of the mass under anesthesia, and the patient was placed on penicillin, 50,000 units every three hours. On this day, a barium enema revealed no defects of the large bowel, and the patient's evacuation film showed a suggestion of a circular mass in the suprapubic region. This mass was easily seen on fluoroscopy and seemed to lie anteriorly within the abdomen. She was scheduled for laparotomy on the morning of 21 June 1949, which was five days after admission to the hospital. In the interval she received an intravenous pyelogram which revealed both kidneys to be in their normal position with normal excretion of the dye. On 21 June, laparotomy was carried out through a right rectus incision under open drop ether anesthesia. When the peritoneal cavity was opened, the first thing that attracted our attention was a large suppurative appendix which appeared to be in a subsiding state. The large mass previously palpated was seen to come off of the right ovary and was about the size of an orange. The mass along with the right tube and ovary were then resected in one piece. The appendix was then removed and the wound closed in layers with interrupted cotton sutures. After the operation, the large mass was opened and was found to contain about 250 cc of old dark blood and a tricuspid tooth, thus confirming the diagnosis of a dermoid cyst. The patient had an uneventful convalescence from her operation and was discharged from the hospital on 6 July 1949.

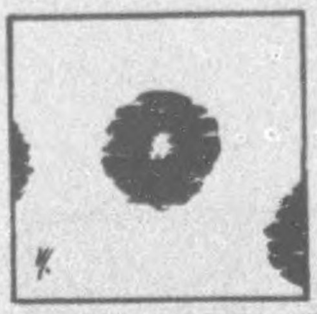
In retrospect we believe that this child had her symptoms and was brought to the hospital because of an acutely inflammed appendix and that the findings of the mass on physical examination was an incidental finding but was of such nature to delay a correct diagnosis from being made at that time. The anemia present on admission is thought to be due to hemorrhage into the cyst. Had the mass not been present, this patient would have been operated on sooner than she actually was, but, as her symptoms were thought to be due to the mass, operation was deferred until her general physical condition could be made as well as possible.

Karsner classifies dermoid cysts as cystic dermoids and classifies the solid dermoids as teratomas. This mass which was removed was partly solid and partly cystic so that either term would be acceptable. On pathological examination, no evidence of malignancy was found.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



XIV. Administration of Oxygen - 1st Lieut. Edna B. Hamel, ANC, 28th Station Hospital



There are three common methods of administrating oxygen: (1) Tent; (2) Mask; (3) Catheter.

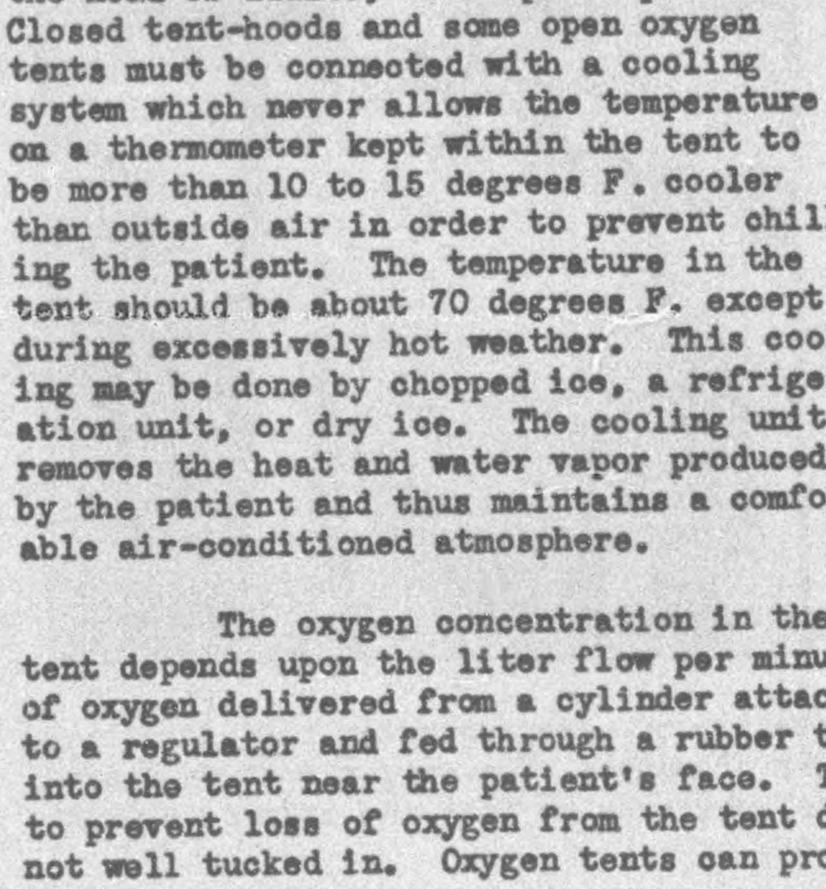
USE OF AN OXYGEN TENT

The patient's head is enclosed by a tent in which the prescribed concentration of oxygen and a confortable degree of temperature and humidity are maintained.

There are also open box tents or canopies of the type that enclose the whole body of infants and small children, or only the head of adults, the top is open. Closed tent-hoods and some open oxygen tents must be connected with a cooling system which never allows the temperature on a thermometer kept within the tent to be more than 10 to 15 degrees F. cooler than outside air in order to prevent chilling the patient. The temperature in the tent should be about 70 degrees F. except during excessively hot weather. This cooling may be done by chopped ice, a refrigeration unit, or dry ice. The cooling unit removes the heat and water vapor produced by the patient and thus maintains a comfortable air-conditioned atmosphere.

The oxygen concentration in the tent depends upon the liter flow per minute of oxygen delivered from a cylinder attached to a regulator and fed through a rubber tube into the tent near the patient's face. The concentration also depends upon close nursing supervision to prevent loss of oxygen from the tent due to leakage through the mattress or because the canopy is not well tucked in. Oxygen tents can provide an atmosphere containing up to 60% oxygen concentration.

Every canopy tent is accompanied by a set of instructions issued by the manufacturer and these should be carefully read and applied. Some tents are operated electrically and have a motor blower unit to circulate the oxygen as well as a refrigeration unit. The atmosphere of the tent must be periodically tested to determine the oxygen and carbon dioxide content.



SEMI-OPEN INHALER

ADMINISTRATION OF OXYGEN BY A MASK

The mask method permits the patient to breathe from a face inhaler, and provides the patient with a high oxygen tension (100%, if necessary). Nasal masks covering only the nose are suitable for conscious patients who can eat and talk, while oronasal masks which cover both the mouth and nose are better for unconscious individuals. A cylinder, reducing valve, and flow meter are necessary. No humidifier is used. A breathing bag is attached to the mask, and the oxygen flow must be adequate at all times to prevent to bag from entirely collapsing. The mask must fit properly and be kept firmly strapped to the face.

High concentrations must be avoided over a long period of time. Occasionally a positive pressure mask which has a special expiratory valve is necessary, particularly in the

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



treatment of pulmonary edema, or in the presence of respiratory obstruction as in severe asthma. Here, a tight fitting mask and leak proof system are imperative for success.

ADMINISTRATION OF OXYGEN BY A CATHETER

Administration of oxygen by a catheter is a simple and practical means of increasing alveolar oxygen. The disadvantage is that children or delirious or otherwise uncooperative patients may not tolerate the catheter, and it does not provide high oxygen tension (over 60%).

In introducing the oropharyngeal catheter it is essential that the tip of the catheter be accurately placed in the oropharynx. The tip is first perforated with a number of small holes by running a red hot needle through the terminal one-half (1.25 cm) of the catheter. The proper depth for the catheter can be roughly ascertained by measuring the distance from the ala of the nose to the tragus of the ear. With the oxygen running at 6 liters to the minute, the lubricated catheter is passed into the nose and pharynx until the patient swallows a bolus of oxygen during deglutition. The catheter is then withdrawn to a point at which the gas is not swallowed. It is then firmly fastened to the skin of the nose and that of the forehead or cheek with adhesive tape.

At least every twelve hours the catheter should be withdrawn, cleaned, and inserted on the opposite side. If mucus collects on the catheter or the patient is uncomfortable the catheter must be cleansed more frequently.

The oxygen may be passed through water to moisten it or not, depending on whether the secretions are scanty and dry or plentiful and fluid.

Distilled water is used in the humidifier; the amount should never be higher than the indicated water level or, if there is no water level indicator, the bottle should never be more than half full. Too high a water level may result in a fatality by spraying water into the lungs. The humidifier must be more than just a tube extending into a jar of water. The oxygen must be passed through a diffusion head made of felt, porous metal or some like substance so that the oxygen is broken up into tiny bubbles and thoroughly saturated with water vapor.

Equipment for oxygen therapy is intricate and expensive. Proper care of this equipment is essential if it is to be kept in good working order and potential hazards avoided.

Commercial and medical oxygen are identical chemically except for the cleanliness of the containers and the price.

Because of the very high pressure used in filling all oxygen cylinders, a cylinder must never be dropped or allowed to fall over, for breaking the valve and releasing the gas under enormous pressure can cause fatalities or a disastrous explosion. Oxygen expands with heat so the cylinders must be stored in a cool dry room and be kept away from radiators, hot pipes, or any combustible materials.

Oxygen precaution cards must be hung on the outside of the door of each room where oxygen therapy is stored or in use, and oral warnings must be given as printed signs are not sufficient. Because of the fire and explosion hazard with oxygen, no smoking, sparking devises such as motors, suction machines, switches, heating lamps, alcohol, lamps, heating pads, candles, or cautery are permitted in the vicinity of the oxygen equipment. For the same reason, oil, which is combustible with oxygen, must never be used on oxygen regulators, or alcohol rubs administered in oxygen tents. Inflammable materials such as alcohol, etc., may undergo spontaneous combustion when coming in contact with oxygen. Static electricity as a result of friction from motion of people, gases, blankets, bags, tables, must not be overlooked. Unlike flames, the static spark is not evident and is often remembered too late.

Static charges are developed by friction of two substances against each other. This may occur in removing a blanket, especially woolen blankets, opening and closing the valve of a machine

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



or from the friction caused by the flowing of dry gases through tubing. Other potential static generators are articles of silk rayon, (nurses are the greatest offenders) or rubber, rubber-soled shoes, woolen trousers (uniforms), etc.

No x-ray or physical therapy equipment can be permitted until the oxygen in the room is reduced to atmospheric concentration. Tents or other devices delivering a high concentration of oxygen must not be used in wards or other places where precautionary measures cannot be rigidly enforced.

A reducing valve or regulator is essential to reduce the high pressure of the gas in the cylinder to a safe delivery pressure. This regulator contains two gauges in addition to the reducing valve. One gauge indicates the amount of oxygen in the cylinder, while the other gauge or flow meter, which is calibrated in liters, shows the rate of flow of oxygen per minute to the patient.

No regulator or reducing valve should be attached to the cylinder without first opening the cylinder valve sharply and briefly while the outlet is pointed away from any individual present. This blows out any dust, dirt, or small metallic particles which may be lodged in the cylinder outlet, which might be an explosion hazard, or obstruct or damage the regulator. A fiber nut must be used at this connection if medical cylinders are employed.

Before opening the valve of the oxygen cylinder, always be absolutely certain the flow-adjusting screw of the regulator is released. This is accomplished by turning it to the left until it is loose. Failure to observe this precaution may result in a broken regulator, a fire, or an explosion.

Whether the administration of oxygen will be of value to the patient can be determined only by direct experiment. The most reliable physical sign is the pulse rate, but color, breathing (dyspnea), temperature, respiratory rate and blood pressure may also facilitate the decision. Repeated observation of the pulse rate should precede exposure to a high concentration of oxygen; a flow of from 6 to 8 liters per minute is adequate when oropharyngeal methods are in use. The maximm fall in pulse rate is noted. This figure then becomes the criterion by which further administration is regulated. To determine the minimum flow of oxygen which is adequate, reduce the flow by half. If the pulse rate does not rise, a further similar reduction may be undertaken. Should the pulse rate rise after the reduction, the previous higher flow should be restored. By this method, waste of oxygen is eliminated, and the point at which the administration may be discontinued is automatically determined.

Any machine designated for the administration of gaseous anesthetics can be used for oxygen therapy. A simple assembly of a facial or nasal mask and a breathing bag serves the purpose. Provision must be made for the elimination of expired carbon dioxide ether by discharge through an expiration valve or by chemical absorption in a canister of soda lime.

REFERENCES: LIVINGSTONE, Huberta M., MD - Administration of Oxygen Therapy, AJN, Vol 48, No. 2, February, 1948, p. 88

GRAY, Willis J. - Oxygen Therapy. The First Resort in Modern Medicine. The Modern Hospital, Vol 64, No. 6, October 1947, p.62

BARACH, Alvin L. - Increased Effectiveness for Oxygen Therapy. The Modern Hospital, Vol. 67, No. 6, December 1946, p. 90

SUBCOMMITTEE ON ANESTHESIA - Explosions from Contact of Oxygen with Fats or Oils. Hazards in the Use of Oxygen, Inhalation Therapy. Fundamentals of Anesthesia, An Outline, 1942, pp 187, 160, 157

BONICA, John H., Capt, MC - Fires and Explosions, Course in Anesthesia, 1946, pp 115, 116

## PART III - STATISTICAL

**Evacuation:**

1. Tabulated below are the number of patients evacuated from the major commands to the ZI during the five report weeks in July and the number of patients awaiting evacuation as of 29 July 1949:

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



| | BY AIR | BY WATER | TOTAL | PNTS AWAIT EVACUATION |
|---|---|---|---|---|
| JAPAN | 38 | 341 | 379 | 232 |
| MARBO | 46 | 8 | 54 | 0 |
| PHILCOM | 14 | 0 | 14 | 13 |
| RYCOM | 40 | 11 | 51 | 17 |
| FEC | 138 | 360 | 498 | 262 |

2. Evacuations of military personnel per thousand strength for the period of 25 June to 29 July were as follows:

| | | | |
|---|---|---|---|
| JAPAN | 3.0 | PHILCOM | 1.5 |
| MARBO | 3.1 | RYCOM | 2.2 |
| FEC | 2.8 | | |

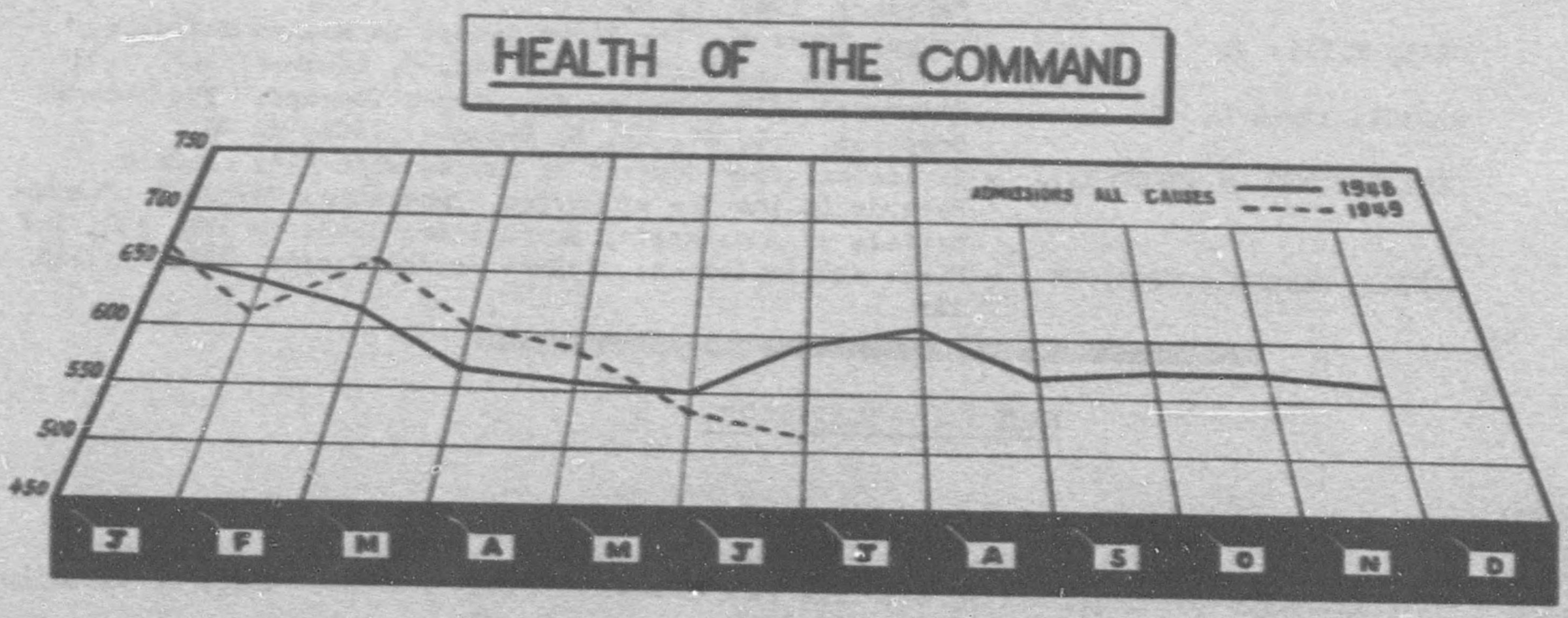
**Hospitalization:**

1. The Bed Status Report as of 29 July 1949 was as follows:

| | Total T/O Beds Auth. | Total T/O Beds Establ. | Total T/O Beds Occupd. | % Auth. T/O Beds Occupd. | % of Establ. Beds Occupd. |
|---|---|---|---|---|---|
| JAPAN | 4,650 | 4,368 | 1,944 | 42 | 45 |
| MARBO | 775 | 450 | 89 | 11 | 20 |
| PHILCOM | 1,250 | 1,250 | 927 | 74 | 74 |
| RYCOM | 750 | 443 | 182 | 24 | 41 |
| FEC | 7,425 | 6,511 | 3,142 | 42 | 48 |

2. Admission rates per thousand troops per annum for the five week period ending 29 July 1949 were as follows:

| | FEC | JAPAN | MARBO | PHILCOM | RYCOM |
|---|---|---|---|---|---|
| All Causes | 515 | 540 | 253 | 538 | 556 |
| Disease | 466 | 490 | 196 | 476 | 519 |
| Injury | 50 | 50 | 56 | 62 | 37 |
| Psychiatric | 11 | 12 | 9.0 | 21 | 8.5 |
| Common Respiratory Diseases and Flu | 41 | 48 | 25 | 81 | 0 |
| Primary Atypical Pneumonia | 5.1 | 4.9 | 0 | 0 | 11 |
| Common Diarrhea | 2.3 | 2.5 | .70 | 5.9 | .50 |
| Bacillary Dysentery | .26 | .09 | 0 | 2.9 | .50 |
| Amebic Dysentery | .13 | 0 | 0 | 2.9 | 0 |
| Malaria, new | 6.5 | 8.5 | 0 | 0 | 2.0 |
| Infectious Hepatitis | 2.2 | 2.6 | 0 | 5.9 | 0 |
| Mycotic Dermatoses | 5.2 | 6.9 | .70 | 1.5 | 0 |
| Rheumatic Fever | .45 | .53 | 0 | 1.5 | 0 |
| Venereal Diseases | 181 | 166 | 15 | 126 | 294 |




1. The general health of the troops in the FEC remained good during the month of July 1949. The admission rate for "all causes" continued to decline, from a rate of 539 per 1,000 per annum in June, an all time low for this command, to 515 for July.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



2. Diseases: (a) The FEC admission rate for "all diseases" decreased to 466 in July from 487 in June. This is attributed to the notable decrease in "all diseases" in Japan as shown by the decreased rate of 547 in June to 490 for July.

(b) Malaria: There continues to be little evidence of transmission of malaria in Japan, most of the cases occurring among troops having had recent service in Korea. RYCOM again shows a substantial decrease in recorded cases of malaria. Only 4 new cases with a rate of 2.0 were reported for RYCOM in July as compared to 10 cases at a rate of 5.9 for the previous month, and 36 new cases or a rate of 18 for July 1948.

(c) Infectious Diseases of the Central Nervous System: There were 14 cases of poliomyelitis with 1 death reported in the month of July. All of these were from Japan. In July 1948, there were 30 cases reported with 3 deaths. Twenty-four of the cases and 2 of the deaths were reported from Japan at that time. Only 1 case suspected of being Japanese B encephalitis was admitted during July. This case, not yet confirmed, was an enlisted man from RYCOM. The 2 suspected cases of this disease in RYCOM as reported in the June report have now been confirmed, bringing the total number of confirmed cases of Japanese B encephalitis to 3, all from RYCOM. Cases of infectious diseases of the central nervous system discussed here include those reported on both military and civilian occupation personnel.

(d) Venereal Diseases: The total rate of venereal diseases for the FEC increased from the rate of 147 in June to 131 in July. Increases were noted in all major commands except MARBO. Surprise physical inspections conducted in both Japan and RYCOM probably account for at least a part of the increased reported incidence.

(e) Diarrhea and Dysentery: Diarrhea and dysentery continued to occur with low incidence during the month, the rate being 2.7 as compared with 2.4 for June and 21 for July 1948.

3. Non-Battle Injuries and Deaths: The rate for non-battle injuries in the FEC decreased from 52 in June to 50 in July. This decrease is attributed to a general decrease in all commands. During the five report weeks in July, 24 deaths due to non-battle injuries were reported in Army and Air Force military personnel of the FEC. There were 8 deaths due to diseases reported for the same period.

# IN THIS ISSUE


| | PAGE |
|---|---|
| Administration of Oxygen | 17 |
| Dissolution of Ad Hoc Committee on Medical and Hospital Services of the Armed Forces | 2 |
| Employment of Civilian Physicians in the Far East Command | 3 |
| Hemorrhagic Teratoma of the Right Ovary Complicated by Appendicitis in a Three Year Old | 15 |
| Military and Civilian Intern Programs | 2 |
| Observations on External Otitis | 9 |
| Organization of the Medical Section | 1 |
| Penetrating Wounds of the Abdomen | 6 |
| Physical Evaluation; Hospitalization; Disposition - For Officers | 4 |
| Physical Inspections of Troops | 1 |
| Plasma, Normal Human, Dried (Medical Stock Nos. 1-607-100 and 1-607-104 | 5 |
| Program for Trachoma Control, Kyoto Prefecture, Honshu, Japan, 1948-1949 | 10 |
| Recent Department of the Army and FEC Publications | 5 |
| Statistical | 19 |
| White Hospital Uniform for Women Officers of the ANC and WMSC | 2 |

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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

The Chief Surgeon extends an invitation to all personnel of the Medical Department to prepare and forward, with view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted. Copy should be forwarded so as to reach the Medical Section, GHQ, FEC, not later than the 10th of the month preceding the issue in which publishing is desired.

Capt. Vincent I. Hack, Editor

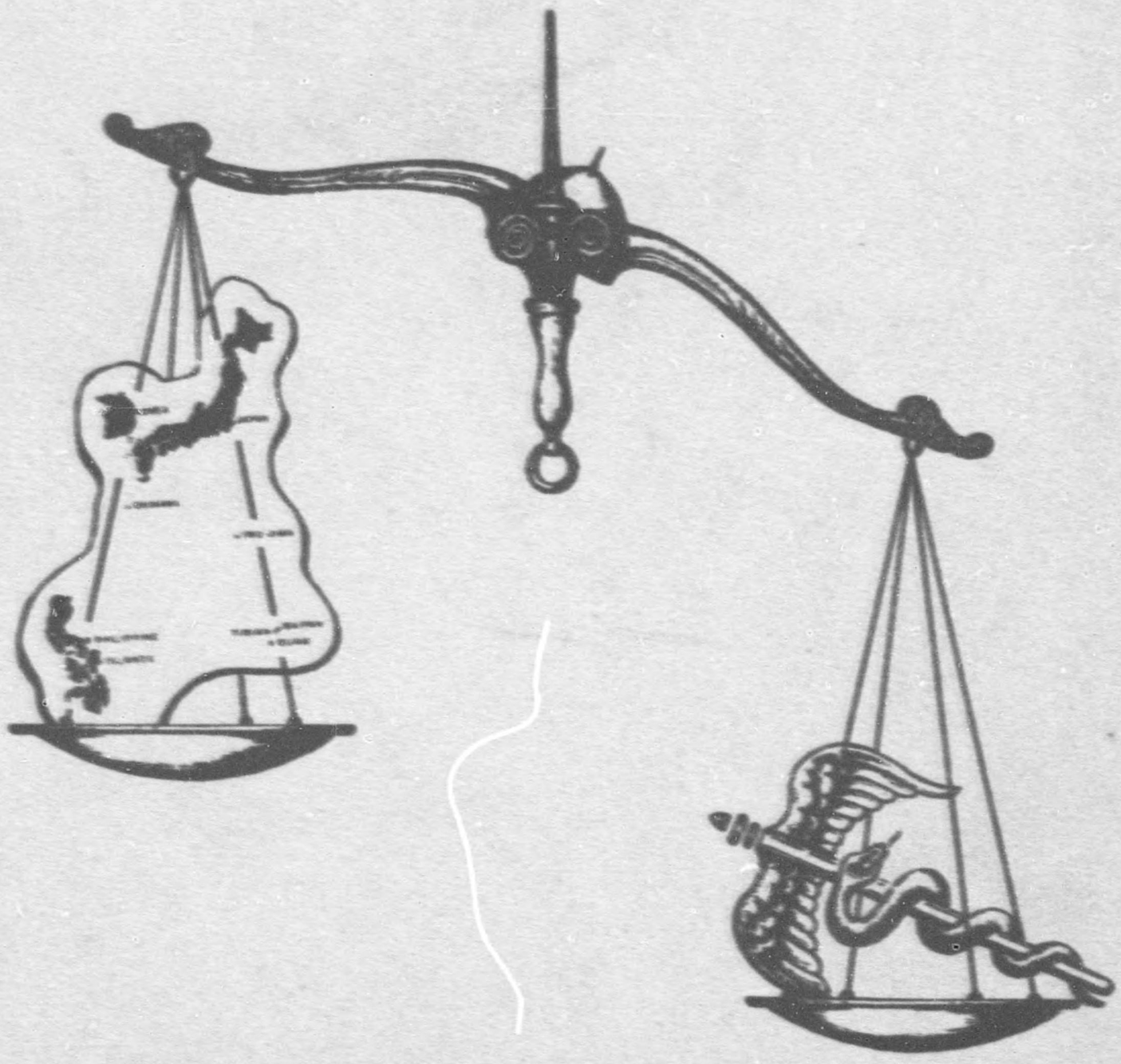
DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

Tokyo

RESTRICTED

# MED. SEC. GHQ. FEC.

VOL IV NO 7
1 JUL 1949



A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

# SURGEON'S CIRCULAR LETTER

RESTRICTED

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



GENERAL HEADQUARTERS
FAR EAST COMMAND
APO 500

TO: All Personnel of the Medical Department, Far East Command

Before departing from this command 11 July 49, I wish to express my appreciation to all members of the Medical Department for their loyal co-operation and support during the past three years.

The splendid health record of the occupation personnel is a testimony to the success of your endeavor. Your devotion to duty and your cheerful acceptance of somewhat trying conditions will always be remembered.

I wish each and every one of you happiness and continued success in your life's mission of making this world a better place in which to live.

James A. Bethea

JAMES A. BETHEA
Major General, MC, U. S. Army
Surgeon

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



GENERAL HEADQUARTERS
FAR EAST COMMAND
MEDICAL SECTION

SURGEON'S CIRCULAR LETTER

NUMBER. . . . . 7

APO 500

1 July 1949

PART I

ADMINISTRATIVE

SUBJECT


| | SECTION | PAGE |
|---|---|---|
| Organization of the Medical Section. | I | 1 |
| Dependents to Accompany Medical Corps and Dental Corps Officers Overseas | II | 1 |
| Quotas Set for Doctors of Medicine and Dentistry | III | 1 |
| Medical Personnel Shortage | IV | 2 |
| Medical Corps - Voluntary Extensions | V | 2 |
| Establishment of the Medical Services Division | VI | 2 |
| National Guard MC Officers to Participate in Army Graduate Study Program | VII | 3 |
| Reserve Army Nurse Corps and WMSC on Inactive Status Can Receive Annual Retirement Credits | VIII | 3 |
| Medical Records. | IX | 4 |
| Control of Mosquito-Borne Diseases - New DA Film | X | 4 |
| Penicillin Storage | XI | 5 |
| Fluorescent Lamps - Warning. | XII | 5 |
| Medical Department of the Air Force. | XIII | 5 |
| Charges for Medical Care | XIV | 6 |
| Recent Department of the Army and FEC Publications | XV | 6 |
| Index. | XVI | 20 |

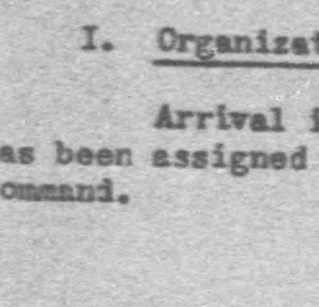

## I. Organization of the Medical Section

Arrival in Medical Section. WOJG Ernie L. Barker; formerly with the 35th Station Hospital, has been assigned to the Administrative Division, Medical Section, General Headquarters, Far East Command.

## II. Dependents to Accompany Medical Corps and Dental Corps Officers Overseas

Due to the critical shortage of Medical and Dental officers the Department of the Army (Department of the Army (TAG) (AGAO-C) message WCL 47337 dated 10 June 1949) now authorizes coordinated travel of Medical and Dental officers and dependents to all overseas commands and further, that upon request, Medical and Dental officers already in overseas commands without families are to be granted constructive credit under priority system sufficient to qualify for inclusior in the next priority list submitted to The Adjutant General.

## III. Quotas Set For Doctors of Medicine and Dentistry



Quotas have been set for each of the forty-eight states in the Armed Forces Emergency Medical - Dental Procurement Program, Secretary of Defense Louis Johnson reported. Requirements range from three each for Nevada and Wyoming, to 716 for New York. Total quota is 3,578. Of this number only 272 have volunteered, leaving 3,306 physicians and dentists still to be procured. Just prior to leaving office, former Secretary of Defense James Forrestal wrote a personal letter to physicians and dentists who received all or part of their professional training at Government expense but who did not take a direct or active part in the war. In the letter he appealed to these men to volunteer for service.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Secretary Johnson stated that many in the above category have not volunteered. He further stated that he had hopes that many of these young professional men would reconsider their decision "in view of their moral obligation to their country." Mr. Johnson asked that physicians and dentists who were deferred during the war, so that they might complete their professional education notify him in writing if and when they would volunteer for active duty.

The need for Medical and Dental Corps officers is still urgent despite procurement efforts.

IV. Medical Personnel Shortage

Major General Raymond W. Bliss, Army Surgeon General, recently advanced one possible solution to alleviate medical personnel shortage in the Army. General Bliss stated that he was seeking part-time volunteer service of medical men and that if 5,000 officers would volunteer their services for an average of three days a month, this would furnish the man-hours in a year equivalent of the services of 600 officers.

He further stated that he was forwarding to 14,300 physicians, 5,548 dentists and 1,372 veterinarians questionnaires asking if they would be available for volunteer duty with the Army for from one to twenty-nine days a month. Those volunteering would be assigned to general and station hospitals in their area.

V. Medical Corps - Voluntary Extensions

In connection with the program to interest Medical Corps officers who are completing category and required service period to extend voluntarily their period of service, a letter was received on 25 April 1949 from the Chief, Personnel Division, Office of the Surgeon General, informing that a policy has been established within that office to permit these officers to be assigned to a specific locality upon their request, provided they agree to extend their tour of service for an additional year.

Due to critical shortage of Medical Corps officers in overseas commands it has been requested that efforts be made to have officers extend in overseas commands or to request a tour overseas. However, if a prospective applicant is not interested in an overseas assignment vacancies also exist in zone of interior station hospitals and non-teaching hospitals. Vacancies in "teaching general hospitals" are practically non-existent and none are anticipated in the near future.

Copies of the letter were dispatched to the Surgeon of each of the Far East Command major commands on 11 May 1949 by letter of transmittal from the Surgeon, Far East Command, containing the information that any such requests be submitted to the Commander-in-Chief, Far East Command, for necessary action.

The letter of transmittal further informed that applicants should recognize that the Surgeon General can not make positive commitments for particular assignments in overseas commands.

There is currently under study in the Far East Command a plan to locally employ a limited number of physicians and dentists in a civilian status from among AUS medical officers upon completion of their current tours of active duty. Further details in connection with this study will be announced at a later date, however, applications for this type duty are currently being honored.

Command surgeons are advised to discuss this with all officers under their jurisdiction who fall within this category.

VI. Establishment of the Medical Services Division

The Office of The Secretary of Defense has issued a memorandum on the establishment of the Medical Services Division. The following directive for the Director of the Medical Services establishes the Medical Services Division within the Office of the Secretary of Defense and describes the authority and responsibilities of the Director of Medical Services.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



"DIRECTIVE

"FOR DIRECTOR OF MEDICAL SERVICES

"1. Pursuant to the authority vested in me by the National Security Act of 1947 (Public Law 253, 80th Congress) there is hereby established, within the Office of the Secretary of Defense, a Medical Services Division with a Director of Medical Services as the head thereof.

"2. The Director of Medical Services shall be appointed by the Secretary of Defense. He may be a civilian or an officer of one of the armed services.

"3. Under the direction of the Secretary of Defense, he shall have the authority and responsibility for, and shall perform the following duties:

a. Establishment and control of general policies, standards and programs for the medical services of the three military departments and appropriate agencies of the National Military Establishment.

b. Exercise general direction, authority and control over administration and utilization of personnel and facilities of the medical services of such departments and agencies through the heads thereof.

c. Such other duties with respect to the medical services of the National Military Establishment as the Secretary of Defense may direct.

"4. The Secretary of Defense shall provide the Director of Medical Services with such personnel, facilities and other administrative services as the Secretary may determine to be required by the Director for the performance of his functions. Military personnel required shall be furnished by each of the three armed services in approximately equal numbers.

/s/ Louis Johnson

Appendix"

JCS Info Memo 649

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VII. National Guard MC Officers to Participate in Army Graduate Study Program

National Guard medical officers will take part in the regular Army's Graduate Professional Education Program under arrangements recently completed with the Surgeon General of the U. S. Army.

The initial quota assigned to the National Guard is ten residencies in orthopedics and three in physical medicine. The courses start on 1 July 1949 and will involve a full year of graduate professional training at Army General Hospitals at full pay and allowances.

Plans are currently under study for expanded participation of National Guard medical officers in the Army program of graduate medical study, which provides approved training in the various fields of medical and surgical specialities.

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VIII. Reserve Army Nurse Corps and WMSC on Inactive Status Can Receive Annual Retirement Credits

All qualified graduate nurses of the Army Nurse Corps and those eligible for reserve appointments in the Women's Medical Specialist Corps are urged to make direct application to officer in charge of reserve affairs in their major command.

The requirements for 20-year retirement are as follows:

1. A Reservist must attain the age of 60.

2. Must have completed 20 years of satisfactory active federal service as a member of the Reserve.

3. Must meet standards of performance which require her to be active in the Reserve.

4. A Reservist must also hold membership in the Officers Reserve Corps.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



All graduate nurses interested in the Army Nurse Corps Reserve should submit application according to provisions of DA Circular 210, July 1948 and DA Radio 44551, February 1949. (All applications will be processed through The Adjutant General's Office.) Fifty qualifying points are required annually for credit toward 20-year retirement. These points may be earned by:

1. Correspondence courses are available through the Medical Field Service School, Fort Sam Houston, Texas. All correspondence courses should be directed through the local officer in charge of reserve affairs.

2. Attendance at medical meetings and nurses's educational seminars at Army hospitals. Upon satisfactory attendance at these meetings, a certificate will be awarded. The Reserve nurse will receive one copy; two will be forwarded by the certifying officer (the principal chief nurse, or in her absence, the assistant chief nurse) to the officer in charge of reserve affairs; and one will be kept on file in the office of the chief nurse. The number of hours necessary to earn a qualifying point is a minimum of two hours. Not more than one point may be earned daily. Courses conducted by Reserve affairs officers are available to Reserve nurses on inactive duty to earn credit for retirement.

3. "On-the-job" training refresher work is offered in medical and surgical nursing at the local Army hospitals. A maximum of four hours duty is required in either of the above departments. General nursing including new drug therapy and specialized techniques will be included in the period of training. The complete duty uniform of the school, including caps, may be worn. Educational courses as outlined by WD Circular No. 5, dated August 1947, are also available.

All necessary arrangements for this specialized work should be made by contacting the principal chief nurse of the Army hospital in your area, or the officer in charge of reserve affairs.

For determining Reserve retirement credit, the present calendar year is as follows: 29 June 1949 to 28 June 1950. On and after 29 June 1948, a "year" will be computed from 29 June to 28 June, inclusive, of each following year for persons who are members of a reserve component of the Armed services on that date. For persons who entered or reentered the services after 29 June 1949, the "year" will be the annual anniversary of such entry or reentry. Renewal of a commission, warrant, or enlistment will not constitute reentry if reappointment or reenlistment is effective on the day following termination or discharge.

A certificate of satisfactory completion will be awarded applicants who complete the necessary training and may be reproduced locally at each hospital when needed. (FEC AGO Form No. 190, 29 March 49)

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## IX. Medical Records

Department of the Army Special Regulations 345-920-1, "Records and Reports, Records Administration - Disposition of Records," 15 March 1949, is a consolidated, detailed directive for the maintenance and disposition of records. This regulation is of utmost importance to each medical installation, including laboratories and dispensaries.

The attention of hospital registrars is particularly invited to the new procedure prescribed in chapter 12 for the maintenance and disposition of clinical records. Clinical records closed after 30 April 1949 will be maintained alphabetically on a bimonthly basis, cut off on the last day of each even numbered month, and a new file established on the first day of each odd numbered month. Each bimonthly file will be held six additional months from the closing date of the file and then retired in a group. In accordance with the provisions of Circular 29, GHQ, FEC, 21 August 1948, all records retired by Far East Command installations should be forwarded to Central Records Depot No. 4, Boeki Building No. F 121-1, APO 343, for processing and transshipment to the zone of interior.

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## X. Control of Mosquito-Borne Diseases - New DA Film

TF 8-1495 "Control of Mosquito-Borne Diseases." (19 minutes - unclassified) Synopsis: A

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



training film showing how the Army, Navy and Air Forces are constantly cooperating in the control of eradication of Anopheles, Culex and Aedes mosquitoes which are carriers of Malaria, Dengue, Brain Fever and Filariasis diseases. Part of the movie reveals how research personnel, laboratory technicians, doctors and mosquito control teams cooperate with the individual soldier to obtain this end. In the field, control teams are constantly at work eliminating breeding places and destroying the carriers by spraying, but the individual soldier must do his part too, by constantly taking precautionary measures in disease infested areas. The proper use of mosquito netting, protective clothing, repellents and sprays is shown to avoid infection of these mosquito borne diseases.

Use: General Army-wide distribution and for "required" showings in areas where mosquito-borne diseases exist. Related Material: TF 8-953, TF 8-1378, TF 8-2057, Misc. 157, Misc. 1035, Misc. 1046, FB 195, FS 8-64.

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## XI. Penicillin Storage

Crystalline Penicillin G in oil and wax, as well as straight Crystalline Sodium or Potassium Penicillin G, should be kept at room temperature. Instructions on each package contain the remarks "Do not heat," and "Do not refrigerate."

Recent inspections have shown it still to be the common practice in both dispensary and ward for the penicillin preparations to be stored in the ice box. This results in the P.O.B. becoming so viscous that excessive heating is required to liquefy the preparation.

Commanding officers and chiefs of services should take the necessary steps to discontinue refrigeration of the undiluted penicillin preparations.

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## XII. Fluorescent Lamps - Warning

A warning against the careless handling of fluorescent lamps has been published by industrial health engineers. Cuts from broken fluorescent lamps may be dangerous, as the tubes are internally coated with a powder called phosphor, which may contain beryllium. If beryllium-covered glass particles get under the skin, the substance may delay the healing of wounds and lead to chronic inflammation and skin lesions.

A recent case of this kind involved a twelve-year-old boy who was cut by an old fluorescent tube that he had been using as a bat. The initial cuts appeared to heal, but eight weeks later painful lumps developed beneath the scars. Three months later these lumps had to be removed by surgery.

It is recommended that great care be taken in handling burned-out fluorescent lamps; discarded tubes should be taken to a waste disposal area and should there be broken. Persons breaking the tubes should wear full protective goggles and should avoid breathing the dust and vapors.

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## XIII. Medical Department of the Air Force

The establishment of a Medical Department for the Department of the Air Force has been authorized pursuant to authority contained in Joint Army and Air Force Adjustment Regulations No. 1-11-62 dated 16 May 1949. Personnel necessary to meet the requirements of the Air Force Medical Service were authorized to transfer on a voluntary basis from the Department of the Army to the Department of the Air Force. Transfers were to be completed prior to 26 July 1949 on which date enabling legislation expires.

A radiogram from the Department of the Army, prior to receipt of JAAFAR 1-11-62, required that all commanders take immediate action to notify all Medical Department officers (RA, AUS, or civilian components) on active duty of all available details of the new Air Force Medical Department and further required each Medical Department officer to state in an official letter whether he did or did not desire transfer to the Department of the Air Force.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



For general information, the following Army medical installations and activities are those which will be jointly staffed by Army and Air Force medical personnel and will currently provide medical service to the Army and Air Force under provisions of JAAFAR 1-11-62, 16 May 1949:

Named general hospitals.
Army Industrial Hygiene Laboratory.
Army Institute of Pathology.
Army Medical Center.
Army Medical Library.
Central Dental Laboratories.
Medical general laboratories.
Medical general dispensaries.
Recruiting main stations.
Medical Nutrition Laboratory.
Distribution of medical supplies through depots in the United States (by branch medical depots and medical sections of general depots).
Development and computation of supply requirements (as now performed by the Requirements and Stock Control Branch, Supply Division, SGO).
Training pipeline in both military and civilian facilities.
Professors of military science and tactics (at dental, medical veterinary, and pharmacy schools).

XIV. Charges for Medical Care

On center page sheet of this issue is reproduced a chart on medical care charges effective 1 July 1949. Chart is unclassified and may be withdrawn for posting.

XV. Recent Department of the Army and FEC Publications

AR 40-210, C-9, 22 Apr 49. Prevention and Control of Communicable Diseases of Man. Par 10 g (ADMED) Certification of Immunization. Supersedes Sec III, DA Cir 67, 1947.

AR 40-950, 29 Apr 49. Medical Service: Veterinary Meat and Dairy Hygiene - General. These Regulations together with SR 40-950-1, 29 Apr 49, supersede AR 40-2150, 9 Oct 42.

AR 40-1715, C-1, 19 May 49. Blood for Transfusion and Other Purposes.

AR 605-246, 19 May 49. Officers: Retiring Boards. These regulations supersede AR 605-250, 16 Jan 48 and DA Cir 304, 1948.

Catalogs: Army-Navy Catalog of Medical Materiel, Apr 49. Spare Parts Section, 3-095-100. Pamphlet No. 11.

Catalogs: Army-Navy Catalog of Medical Materiel - Standard Price Supplement, July 49 Supersedes supplement dated July 48.

Dept of the Army and the Air Force Bulletin 11, 16 May 49. Transfer Order 36. (Sec II.) Order Transferring From Department of the Army to the Department of the Air Force Certain Functions Relating to the Medical Department, United States Army.

DA Memo 40-590-15, C-1, 25 Apr 49. Report of Treatment of Pay Patients.

GHQ FEC Cir 27, 20 May 49. Personnel Reporting and Accounting. Rescinds Sec II, FEC Cir 80, 1947 and Sec I, FEC Cir 53, 1948; Assignment of Hospital Patients; Transfer of Personnel Upon Completion of Hospitalization.

GHQ FEC Cir 30, 8 June 49. Construction Policy for Japan. Rescinds GHQ FEC Cir 9, 1948, and changes.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



JAAFAR 1-11-82, 16 May 49. Transfer from Department of the Army to Department of the Air Force of Certain Functions Relating to Medical Department, United States Army.

RT 8-75N-26, 29 Apr 49. Armored Medical Battalion (Active Army).

RT 8-77N-20, 29 Apr 49. Company Armored Medical Battalion (Active Army).

SR 310-20-5, 1 Jan 49. Index of Administrative Publications. Sec I - List of Current Regulations and Changes. Sec II - Recissions Supersessions, Etc. Sec III - Alphabetical Index. These regulations supersede AR 1-5, 1 Jan 46 and AR 1-10, 1 July 48, and parts of FM 21-6, 10 Oct 48.

SR 310-20-6, 1 Jan 49. Index to Blank Forms and Military Classification Tests. Supersedes parts of FM 21-6, 1 Oct 48.

SR 40-590-44, 30 March 49. (Corrected Copy). Medical Service: Admission to and Treatment in Medical Facilities of Department of the Army in Continental United States of Members of United States Soldiers Home. Par 6 ac of AR 40-590 Rescinded, Not pars 6 a and 6 c.

SR 40-110-1, 14 Apr 49. Medical Service Standards of Medical Examination for Flying. Supersedes AR 40-110, 12 Dec 44 and C-1, 12 Apr 45.

SR 325-10-1, 19 Apr 49. List of Recurring Reports. Pages 75 - 81, Medical Reports. Rescinds SR 325-10-1, 7 Feb 49.

SR 600-335-10, 27 Apr 49. Personnel: Summary of Changes in Status of General Prisoners Confined in Guardhouses, General Hospitals, and Overseas Installations. Supersedes Par 18 c (1) AR 600-375, and Sec IX, WD Cir 248, 1947.

SR 40-950-1, 29 Apr 49. Medical Service: Veterinary Meat and Dairy Hygiene - General. See reference to AR 40-590, 29 Apr 49.

SR 600-500-5, 29 Apr 49. Personnel: Psychiatric Evaluation Prior to Referral to Boards.

SR 605-60-40, 16 May 49. Officers Medical Service Corps Allied Scientist Procurement - Senior Psychology Student Program.

SR 40-590-11, 18 May 49. Medical Service: Hospital Fund Reports.

SR 40-590-20, 18 May 49. Medical Service: Report of Patients on Seriously Ill List.

SR 40-590-60, 19 May 49. Medical Follow-up Card. (To enable Medical Officers to follow-up clinical course of patients with diseases and/or injuries of unusual professional interest.)

SR 40-590-45, 23 May 49. Medical Service: Admission to and Treatment in Medical Facilities, Department of the Army, of Active, Reserve, and Retired Personnel of Navy and Marine Corps. Supersedes pars 6 g; 11 b (13); 12 a (1)(a) 14, 15, 16, 17 and (b) 3 and 4, AR 40-590, 21 Jan 46.

T/A 10-100-5, 18 March 49. Special Allowances of Quartermaster Expendable Supplies for Medical Units and Installations of United States Army and United States Air Force.

T/O&E 11-15N, 6 Apr 49. Signal Battalion, Corps. Sec III Medical.

T/O&E 19-55, 11 Apr 49. Military Police Battalion. Sec III Medical.

T/O&E 8-317, 12 May 49. Medical Ambulance Company (Separate).

## PART II

## TECHNICAL


| SUBJECT | SECTION | PAGE |
|---|---|---|
| Low Sodium Diet. . . . . | XVII | 8 |
| Results of Dental Examination of 15,000 Philippine Scouts. . . . . | XVIII | 9 |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013




| SUBJECT | SECTION | PAGE |
|---|---|---|
| Infectious Diseases of the Central Nervous System. . . . . | XIX | 13 |
| Penicillin and Streptomycin Team Established at Army Hospitals (Part Two). . . . . | XX | 14 |
| Pentothal Tray . . . . . | XXI | 17 |
| Tetanus and Typhoid Immunization Procedure . . . . . | XXII | 18 |


XVII. Low Sodium Diet by Colonel Robert E. Blount, MC, Consultant in Internal Medicine, Medical Section, GHQ, FEC

Low sodium diets are exceedingly useful in the management of edematous states such as may occur in congestive heart failure, nephrosis, the toxemias of pregnancy, and in cirrhosis of the liver with ascites. Many authorities find that the low sodium diet is helpful in arterial hypertension. The common animal protein foods, meat, eggs, milk and cheese have a high sodium content. Consequently maintenance of protein nutrition with sodium restricted diets has been difficult. Use of a low sodium milk (LONALAC, Mead Johnson and Company) combined with limited amounts of meat, eggs and low sodium cereals, vegetables and fats, allows the clinician and dietitian to provide a nutritionally adequate diet containing as little as 200 - 400 mgm of sodium daily. This is in comparison to the average daily dietary intake of about 8 grams of sodium. Lists of the sodium values of foods will be distributed shortly to the chiefs of the medical services of the various hospitals in the Far East Command.

In the preparation of a low sodium diet precautions must be taken to avoid medicinal as well as dietary sources of sodium. Important sources about which the patient must be warned are summarized as follows:

1. Salt, both on the tray and in the preparation of food.

2. Commercially processed foods to which salt has been added, such as smoked, salt cured and processed meats such as ham, bacon, salt pork, salt fish, sausage, corned beef, canned meats and fish, bouillon cubes and meat extracts.

a. Other commercially processed foods which must be avoided are:

(1) Cheese.

(2) Olives, pickles, catchup, sauces, salad dressings, prepared mustard, and other pickled and spiced products.

(3) Canned soups, vegetables, fish and meats.

(4) Salted fats, including butter and margarine.

(5) Soda crackers and other ordinary bakery goods.

(6) Prepared cereals.

(7) All other foods to which salt has been added, such as salted nuts, popcorn, potato chips, pretzels, and most candy bars and candies.

3. Meat, eggs, milk and cheese, which have a high natural salt content. Eggs and meat may sometimes be taken in limited quantities if milk is replaced by Lonalac.

4. "Soda" products, such as baking powder and baking soda (sodium bicarbonate), and self-rising flours, including biscuit, muffin, pancake and cake mixes; also remedies containing "salts," including the various laxatives.

5. Water with a natural high sodium content (containing in general 5 mg. or more per 100 cc), or water treated by water-softening equipment.

It must be remembered that excessive sodium depletion of the patient is possible.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Therefore the physician must be alert for symptoms of sodium deprivation such as general weakness, exhaustion and abdominal cramps, particularly when sweating is profuse. In patients with impaired renal function the use of a low sodium diet may entail danger.

Paragraph 10 of DA Special Regulation 30-2210-50 dated 11 January 1949 grants authority for the purchase of Special Supplementary Items for use in hospitals. Lonalac is considered as one of these items and can be obtained by special requisition on the local Quartermaster Depot.

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XVIII. Results of Dental Examination of 15,000 Philippine Scouts November 1948 to April 1949 by Lt. Colonel Stuart M. Mitchell, DC, 10th General Hospital, APO 1105; and Major Bernard H. Bernstein, DC, 8149th Service Unit, APO 900

On November 3, 1948, the 8149th Service Unit, Processing and Training Center, was established to implement the discharge of the Philippine Scouts. As a part of this procedure a Medical Processing Unit was inaugurated to provide physical and dental examination of the Scouts prior to discharge. It was realized that an excellent opportunity presented itself to study the dental health of a large homogeneous group of young adult Filipino males who had been subjected to unusual living conditions in their teens and early twenties. These conditions, of course, were their presence in an active theater of war and subjection to the Japanese occupation of the Islands. The findings in this report were all the more remarkable because of the evident lack of effect of these environmental conditions.

The mean age of Scouts examined was approximately twenty-four years with an average of about three years service. There were however, some older "career" Scouts with twenty to thirty years service. It should be remembered that most of the men reported were young and had been exposed to Army dentistry for three years.

The examination was made by a Dental Officer using a mouth mirror and explorer with good artificial light. The findings were called out to an enlisted technician who then marked the dental chart paragraph 26 of Standard Form 88 accordingly. It is apparent that there were several sources of error. The examiner might call out the wrong numbered tooth, might miss caries or call intact stained teeth as carious. The enlisted man could also mark the chart erroneously. The examination had to be made rapidly but it is believed the errors made were minimal and insufficient to influence the whole picture. One officer and one enlisted man did 90 percent of the examining and charting and became most proficient as a team. The results with explanatory remarks are as follows:

Classification:

Class I - Cases where one or more teeth required extraction.

Class II - Cases where one or more teeth exhibited caries. This was further broken down into (a) cases with multiple caries (b) cases with only one or two caries.

Class III - Cases where there were less than the minimum number of teeth considered necessary to masticate the Army ration or where for esthetic or phonetic reasons replacements were deemed necessary.

Class IV - Cases currently requiring no dental treatment.

The dental classification guided by the above criteria is as follows:

Class I - 372 comprising 2.48% of total.

Class II - 3,719 comprising 24.79% of total.

a. 1,562 or 42% of Class II had multiple caries.
b. 2,157 or 58% of Class II had one or two caries.

Class III - 85 comprising 0.57% of total.

Class IV - 10,824 comprising 72.16% of total.

# Medical Care Charges Effective 1 July 1949

(This chart is not intended as an authority for admission to treatment. It is designed to serve as a convenient reference for the medical charges to be assessed persons authorized treatment and commonly present in the FEC. Brief instructions for the collection of charges and disposition of funds have been included. For qualification of persons for treatment, see references cited in column 3. For charges furing FY 1949 (1 July 1948 to 30 June 1949) see Cir 16, GHQ, FEC, 1949.)

| 1 | 2 CATEGORY OF PATIENTS | 3 FURNISHED TREATMENT UNDER AUTH OF(See Note 5) | 4 HOSPITALIZATION CHARGE PER DIEM (See Note 7) | 5 OUTPATIENT CHARGE, PER VISIT | 6 COLLECTION & DISPOSITION OF FUNDS (See Notes 8 & 9) |
|---|---|---|---|---|---|
| 1. | NONPAY PATIENTS: | Per fol par FEC Cir 16, '49: | | | |
| a. | Enlisted Pers of U. S. Army or Air Force | 5a(1) | None | None | Not applicable |
| b. | TC Civ Marine Pers (Seamen - including officers) of U. S. Army TC vessels (see notes 1 & 2). | 5a(2) | " | " | Not applicable |
| c. | Employees, paid from Army or AF nonappropriated funds, injured in performance of duty (see note 3). | 5a(3) | " | " | Not applicable |
| d. | Prisoners - others in custody or confinement | 5a(4) | " | " | Not applicable |
| e. | Army and Air Force commissioned officers and warrant officers. | 5b(1) | $1.20 | " | Collect & deposit locally |
| f. | Employees pd fr Army or AF apropd funds & entitled to ret trans. (See Note 1) | 5b(2) | $1.20 | " | " |
| g. | Employees pd fr Army or AF nonappropriated funds & entitled to return trans. This includes PX employees, Service Club hostesses, certain librarians & teachers, & employees of Motion Picture Service, Central Purchg Office & TI&E (AFRS, Stars & Stripes, AEP Instrs) | 5b(3) | $1.20 | " | " |
| h. | Employees of ARC & similar welfare orgns on duty with Armed Forces, other than indigenous pers. | 5b(4) | $1.20 | " | " |
| i. | Retired Army & AF mil pers & retired Navy & Marine Corps officers. | 5b(5) & SR 40-590-45, 23 May 49 | $1.20 | " | " |
| j. | Accredited technical observers, operations analysts & consultants whose duties are as per par 2, FM 30-27. | 5b(6) | $1.20 | " | " |
| k. | Visiting dignitaries individually approved for med care under provs par 6ae, AR 40-590 by either DA or CINCFE. | Par 6ae, AR 40-590 | $1.20 | " | " |
| l. | Entertainment pers on tour in FEC. This includes USO pers & other authorized entertainment pers. | 5b(7) | $1.20 | " | " |
| m. | Authorized dependents of Army, AF & Navy mil pers. | 5c(1) & 5c(2) | $1.75 | " | " |
| n. | Authd dependents of Army or AF employees entitled to ret trans. | 5c(3) | $1.75 | " | " |
| o. | Authd dependents ARC pers included in category lh above | 5c(4) | $1.75 | " | " |
| 2. | PAY PATIENTS: | | | | |
| a. | PAY PATIENTS FOR WHOM COLLS ARE MADE BY DA: | | | | |
| (1) | Beneficiaries of Federal Security Agency, Bureau of Employees' Compensation. (Any Fed employee paid fr apropd funds who contracts an injury or disease as a direct result of employment.) | 6a(1)(a) | $10.75 | $1.75 | Make no colls locally. Rpt direct to SG as rqd par 7e(1) FEC Cir 16, '49 |
| (2) | Pers of Fed agencies (other than DA & DAF) authd med care at the expense of the agency responsible for them. This category includes: | 6a(1)(b) | | | |
| (a) | Navy & Marine Corps pers as fols: | SR 40-590-45 23 May 49 | $10.75 | None | Make no colls locally. Rpt |
| 1. | Mil pers on active duty. | | $10.60 | " | ea category patients sep, (ex |
| 2. | Ret enl pers & inactive enl pers trfd to Fleet Reserve after 16 or more years sv. | SR 40-590-42 15 Mar 49 | $10.75 | $1.75 | cept that all |
| (b) | Beneficiaries of U.S. Public Health Service as fols: | | $10.75 | $1.75 | PHS beneficiar- |
| 1. | Officers of PHS on active duty. | | $10.75 | $1.75 | ies may be list |
| 2. | U. S. Coast Guard mil pers. | | $10.75 | $1.75 | ed on same rpt) |
| 3. | U. S. Coast & Geodetic Survey offs & vessel crew members. | | $10.75 | $1.75 | direct to SG as |
| 4. | In U. S. & possessions only, seamen employed on vessels of U.S. Registry and enrollees in U.S. Maritime Sv on active duty. | | $10.75 | $1.75 | rqd by re in |
| 5. | PHS civ employees in fld sv when ill in line of dy (See Notes 1 & 2) | Par 2,a,b & c, | $10.75 | $1.75 | colm 3 opposite |
| (c) | Others. | | | | cat of patients |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

The following information was received from Department of the Army in radio WCL 23385, 1 July 49, subsequent to the printing of the chart for medical care charges and should be added thereto as note no. 10:

10. The following additional rates are applicable to pay patients (see par 2 of above chart) effective 1 July 1949:

a. Physical Examination Rate: A rate of $7.00 is established as the charge for a physical exam, including all necessary procedures and immunizations required in connection with the physical exam, except that physical exams rendered a beneficiary of the civilian components of the Army or Air Force will be at the rate of $1.75.

b. Immunization Rate: A charge of $1.00 will be made for each immunization dose or injection, except for those immunizations furnished as an actual part of inpatient treatment (hospitalization), outpatient treatment or a physical examination. In such cases, the applicable rate of $10.75 per diem for hospitalization, $1.75 per outpatient visit or $7.00 per physical exam will be charged.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

| | | | | | |
|---|---|---|---|---|---|
| b. EMPLOYEES OF CPFF CONTRACTORS | DA Cir 176, 48<br>6a(2)(a) & DA Memo 40-890-16 (AFL 160-156) | $10.75 | $1.75 | Coll locally & fwd thru Surg, GHQ, per par 7f Cir 16, FEC '49 |
| c. MISC PAY PATIENTS FOR WHOM COLLS ARE MADE BY GHQ, FEC (See Note 6): | | | | |
| (1) In Japan, mil & civ pers of BCOF. This does not include pers of UNLM or other missions. | 6a(2)(g) | $10.75 | $1.75 | Rpt to CINCFE as rqd par 7h, Cir 16, FEC, '49 |
| (2) In Korea, MARBO, PHILCOM & RYCOM, Japanese National crew members of SCAJAP ships (emerg trmt only). | FEC rad ZX 39834, 11 Feb 49 | $10.75 | $1.75 | Rpt to CINCFE as rqd FEC rad ZX 39834, 11 Feb 49 |
| d. MISC PAY PNTS FOR WHOM COLLS ARE MADE BY MED INSTLS CONCERNED. (See Notes 4 & 6) | | | | |
| (1) Civ employees of U. S. Fed depts, agencies & commissions (other than DA & DAF) who are not authd med care at public expense. This includes civ employees of State Dept, Commerce Dept, Navy Dept, U.S. Public Roads Adm, U.S. Fish & Wildlife Adm, U.S. Civil Aeronautic Adm, U.S. Weather Bureau, U.S. Veterans Adm, U.S. Reparations & Restitution Del, Foreign Broadcast Info Sv, Foreign Liquidations Com, Atomic Bomb Casualty Com, Economic Cooperation Adm and other U.S. fed employees (except DA & DAF) who cannot present an auth for med care at the expense of the Fed Agency responsible for them. (See Note 1) | Per fol par FEC Cir 16, 1949: 6a(2)(b) | $10.75 | $1.75 | Coll locally & fwd thru Surg, GHQ, per par 7g, Cir 16, FEC '49 |
| (2) Dependents of Civ employees of U.S. Fed agcys other than DA & DAF | 6a(2)(c) | $10.75 | $1.75 | " |
| (3) Merchant seamen other than those included in cats 1b & 2a(2)(b)4, above. | 6a(2)(d) | $10.75 | $1.75 | " |
| (4) Visiting dignitaries & their dependents who are not individually approved for med care under provs par 6ae, AR 40-890. | 6a(2)(e) | $10.75 | $1.75 | " |
| (5) Members of recognized religious missions who are U.S. citizens. | 6a(2)(f) | $10.75 | $1.75 | " |
| (6) In Japan, mil & civ pers of allied or neutral govt agencies & their dependents, except BCOF pers. | 6a(2)(g) | $10.75 | $1.75 | " |
| (7) In Japan, Korea, Mariana, Bonin & Ryukyu Islands, authd coml entrants of U.S., allied & neutral nations, reps of U.S. coml orgns who are U.S. citizens & their dependents. This may inc accredited correspns, traders and reps of coml airlines, oil companies (Petroleum Advisory Group members), & other business firms such as Philco Radio Corp, Radio Corp of America, Comms Inc, Coca Cola, Pepsi Cola, International Dairy, Coml SS Lines, Etc. | 6a(2)(h) | $10.75 | $1.75 | " |
| (8) In Japan, tourists of authd conducted tours. | 6a(2)(i) | $10.75 | $1.75 | " |
| (9) Other individuals determined by the maj commander to be in his comd primarily in furtherance of the missions of the CINCFE. | 6a(2)(j) | $10.75 | $1.75 | " |
| (10) Emerg patients not elsewhere classified, furnd med care to save life or prevent greater suffering. | Par 6ad, AR 40-890 | $10.75 | $1.75 | " |

NOTES:

1. These persons are eligible for benefits from the Federal Security Agency, Bureau of Employees' Compensation. When injury or disease for which being treated was incurred in the performance of duty or is a direct result of their employment, charges should be billed as provided in category 2a(1), above. See references cited therein and AR 40-560.

2. When injury or disease is a result of individual's own misconduct, patient should be treated as a miscellaneous pay patient and charges collected direct from the individual. See par 7g, Cir 16, FEC, 1949.

3. Does not apply to enemy nationals.

4. With the exception of category 2d(10), it is not intended that indigenous personnel will be included in these categories.

5. Unless specifically stated otherwise, all references pertain to paragraphs of Cir 16, GHQ, FEC, 1949.

6. In addition to the per diem and per treatment rates stated herein, miscellaneous pay patients will be charged for "unusual expenses" at actual cost. See paragraphs 7c(3) and 7a(6), Cir 16, GHQ, FEC, 1949.

7. The prescribed hospitalization per diem charge will be collected for all hospitalized dependents, except that no charge will be made for a new-born infant patient as long as the mother is also a patient in the hospital. See par 7a(1) and (2), Cir 16, GHQ, FEC, 1949.

8. Department of the Army medical installations will forward reports to the Surgeon General, Department of the Army, Attn: Fiscal Division. Department of the Air Force medical installations will forward reports to the Surgeon General, United States Air Force. Channels of submission will be as prescribed for the category of patients covered.

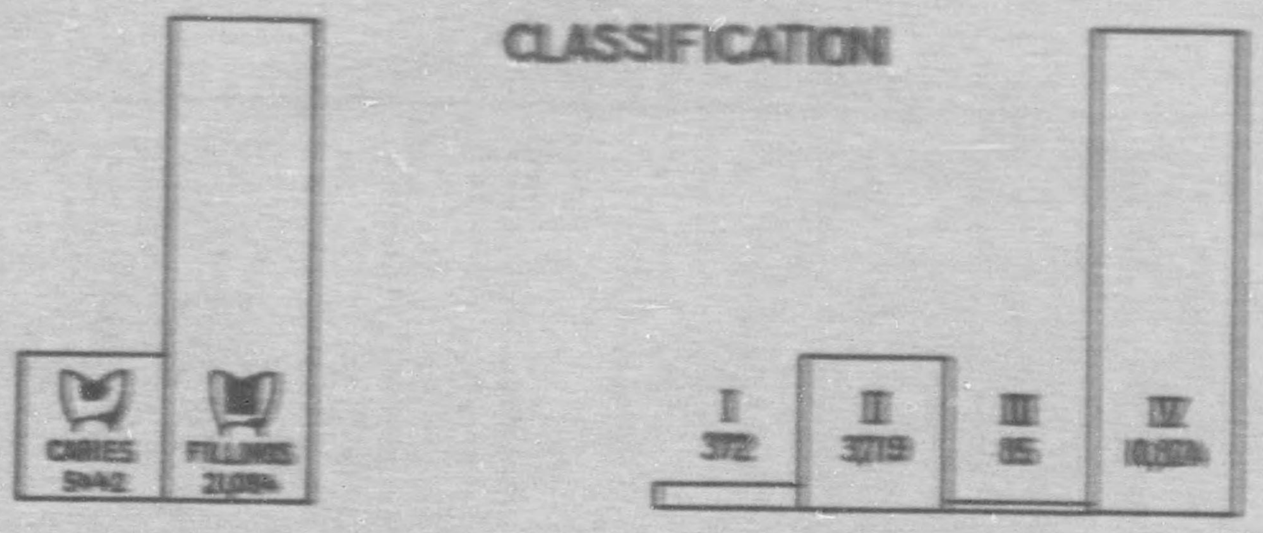
9. Delinquent accounts should be forwarded to CINCFE in accordance with the provisions of par 8, Cir 16, GHQ, FEC, 1949.

Prepared by Medical Section GHQ FEC

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013

RESTRICTED




The totals in Class I and Class IIII were remarkably low. It became apparent that most of the men in Class I were those who had evaded dental service. These men were afforded the opportunity at time of examination to have further dental service and almost all of them fulfilled to appear. The total in Class III was extremely low because very few Scouts had required multiple extractions and most of those who had multiple extractions presented themselves for denture service.

Class II cases comprising 24.79% of the total was in itself not surprising. The remarkable aspect was that 58% in this class had only one or two caries and were obviously in Class IV at some time. The remaining 42% had three or more caries and were bona fide Class III cases.

A total of 10,824 men of the 15,000 were in Class IV and required no further dental treatment. Of this number 1,869 men had what we call "intact dentition" i.e. all thirty-two teeth present, no caries, no fillings or prosthesis. It must be borne in mind that a large number of men in Class IV also had no fillings but did not have intact dentitions due to the lack of one or two teeth or the presence of a crown. This of course lowered the ratio of "fillings per man."

The number of carious teeth found (5,442) divided by the number of men examined (15,000) gives a figure of .36 caries per man.

The fillings totaled 21,084 or 1.40 fillings per man. As stated above the extraordinarily large number of men who exhibited no fillings bring this figure down. If the number of fillings was divided by the number of men who have received dental service, this figure would be much greater.

The missing teeth totaled 42,315 or an average of 2.82 per man. From these three figures the DMF rate (decayed, missing, filled teeth) for this group of Filipino males was 4.38 per man, average age twenty-four years.

FIG. 1

Only visible impactions were recorded as it was not feasible to radiographically examine each man. The total number of visible impactions was 985. The most common type encountered was where the mandibular third molars were tipped mesially, the dental portion of the crown abutting the second molar (Fig 1). Mandibular impactions predominated and were bilateral in most cases. Mostly non-symptomatic with an occasional pericoronitis.

The 15,000 men exhibited 989 bridges. An interesting feature was that most of these bridges, and individual crowns were evidently constructed by civilian Filipino dentists and many had been made for decorative purposes only at the wishes of the patient. The crowns were "fancy" usually being open faced crowns, the open part being in the form of a star or heart(Fig 2). Many bridges were constructed where the pontic was placed in front of a tooth that was in lingual version (Fig 3). Frequently the six upper anterior teeth were crowned apparently for decorative rather than for restorative purposes.

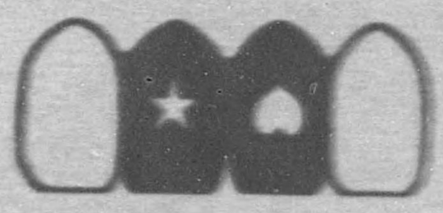


FIG. 2

FIG. 3



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DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



There were 589 partial dentures present, 344 upper and 215 lower. Most of these appeared to be Army dentures and were about equally divided between anterior and posterior.

A total of 62, 40 upper and 22 lower full dentures were seen and were almost in every case in the older "career Scouts." No fully edentulous cases were observed.

Malocclusion was recorded in only 152 cases. It is obvious that only the more extreme cases were counted since time did not allow for thorough studies of occlusion.

Periodontal conditions were practically nil due mostly to the youth of the group and to the better than average oral hygiene practiced by this group. There were 93 cases of gingivitis recorded and only 52 cases of periodontoclasia, again mostly in the older 25 and 30-year men.

FIG. 4

One striking peculiarity, rather common in this group, was the presence of great many "geographic markings." These markings on the lingual surfaces of the upper incisors appeared as very fine light brown lines criss-crossing on surface of the enamel. (Fig 4)

In conclusion it may be stated that the dental health of this group of 15,000 young adult Filipino males was excellent, showing little deleterious effect from the impact of war and Japanese occupation. Large numbers of men in this group had never required dental treatment of any kind. Another large number had received dental treatment in the Army and were in good dental health. A small number were in need of treatment but had obviously avoided it. The 1,868 "intact dentitions" were amazing as such a condition in an American national of the same age group is most uncommon. No vincents stomatitis present and gingivitis minimal. A general observation was that the average individual had had a minimal amount of dental treatment rendered in civilian life and that it consisted primarily of extractions, practically no operative dentistry, but an unusually large amount of prosthesis consisting of anterior bridges, solid and open faced gold shell crowns, many of the latter being for decorative purposes.

DENTAL CLASSIFICATION
EXAMINATION 15,000 PHILIPPINE SCOUTS

| CLASS I | CLASS II | CLASS III | CLASS IV |
|---|---|---|---|
| 372 | 3,719 | 85 | 10,824 |

| | | | |
|---|---|---|---|
| Caries | 5,462 | Full Dentures | 62 |
| Filling | 21,080 | Upper | 40 |
| Intact Dentition | 1,868 | Lower | 22 |
| Impactions | 985 | Gingivitis | 93 |
| Bridges | 939 | Periodontoclasia | 58 |
| Partial Dentures | 589 | Malocclusion | 152 |
| Upper | 344 | | |
| Lower | 215 | | |

## XIX. Infectious Diseases of the Central Nervous System

Infectious diseases of the central nervous system occur among Far East Command personnel with sufficient frequency to be of considerable significance. In 1948, there were 107 cases of poliomyelitis with 11 deaths. Of these, 56 cases and 4 deaths were among military personnel. While July, August and September were the months of highest incidence, sporadic infections occurred throughout most of the year. A total of 23 confirmed cases of meningitis were reported, 12 in military and 11 in non-military personnel. Of this total, 8 were meningococcal infections, 9 were reported as due to other bacteria, 2 were considered to be non-bacterial and in 4 the etiology was not specified. Five deaths occurred from this disease.

Japanese B encephalitis was confirmed in 31 instances among Far East Command personnel in 1948, 29 cases occurring in Japan and 2 in Okinawa. Five of these cases were fatal. Of the 31 total cases, 26 cases and 4 deaths occurred among military personnel, including Navy. In addition, infectious encephalitis, etiology undetermined, was reported 31 times during 1948.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



From these incidence figures, it is apparent that infections of the central nervous system do not constitute a major cause of illness and death in the Far East Command. However, because of their nature, they do at times assume a significance far out of proportion to their actual incidence and their occurrence in a command or a community frequently leads to considerable apprehension and alarm. For these reasons and in order that factual information may be available concerning the nature and actual extent of occurrence of these diseases, particularly accurate and detailed reporting of each case is highly desirable. In the past, data on these cases have varied considerably with respect to completeness and detail and, at times, repeated requests for more definitive information has been necessary.

In order to simplify the reporting of these cases to the greatest extent consistent with the collection of the necessary data, specific instructions concerning the information desired have been sent to the major commands. These instructions are presented below for the information and guidance of medical officers in their collection and recording of case histories.

Initial radio reports should be dispatched by hospital commanders as soon as it has been determined that a case or suspected case of infectious disease of the central nervous system has been admitted. This report should be addressed to CINCFE, Attn: Surgeon, with information copies to the Surgeon of the major Army and/or Air Force numbered command concerned, to the CO, 406th Medical General Laboratory and to the patient's immediate commanding officer for his unit surgeon, if applicable. To assure clarity, initial radio reports have been divided into nine parts as follows:

Part 1: Name and age of patient.
Part 2: Rank and serial number of patient, if applicable.
Part 3: Organization, station and place of residence of patient, to include APO number. If patient is a dependent, the organization of the patient's principal should be furnished.
Part 4: Date patient was admitted.
Part 5: Diagnosis, in accordance with the provisions of SR 40-1025-1. If the diagnosis is suspected only, that fact should be stated.
Part 6: The pertinent clinical and laboratory data available, including the cardinal symptoms of patient.
Part 7: The general date of onset of these symptoms.
Part 8: The possible place of contraction of the disease if other than is indicated by the organization or residence of patient.
Part 9: The date and type of each immunization received by the patient within four months prior to the onset of the current illness.

Upon a change in diagnosis or confirmation of a suspected diagnosis, a similar follow-up radio report should be made, giving such additional information as is indicated by laboratory, clinical or epidemiological findings. When final disposition of the patient is accomplished or the patient is evacuated to the zone of interior, a final report should be made giving type of disposition, date of disposition and the final diagnosis of patient.

The above reports are subject to reports control symbol MED-16, which should be cited in each report. They should not be confused with any casualty reports which may be required in addition to these reports.

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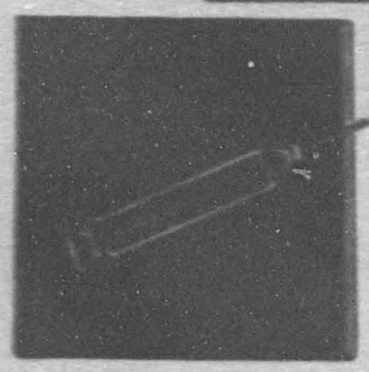
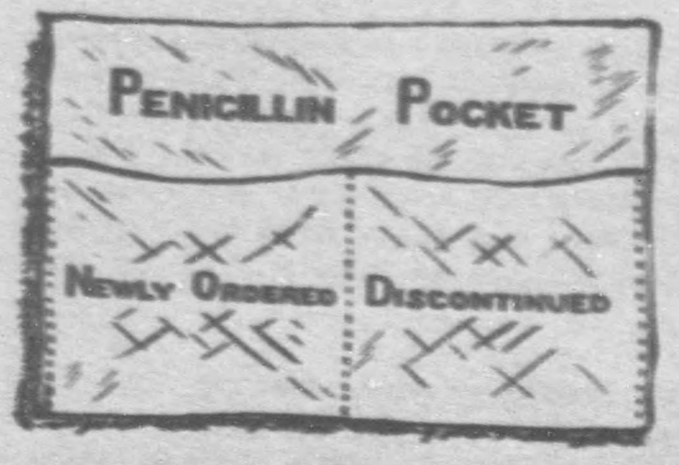
XX. Penicillin and Streptomycin Team Established at Army Hospitals by Major Mildred I. Clark, ANC, Chief Nurse, Far East Command (In two parts - Part II - See June 1949 issue, Surgeon's Circular Letter, for Part I this article.)



Prescription forms should be placed in the penicillin pocket on the personnel bulletin board on the ward. This pocket is constructed of X-ray film, 11 inches wide - 7 inches high separated by stitched seams in the center and clearly labeled as follows.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013






The prescription will be picked up by the technician and the therapy started on the next scheduled round by the team.

In certain cases where immediate therapy is desired, the prescription will be dispatched to central supply by special messenger and the therapy will be started immediately. All other dosage will be started on the hours indicated on the prescription request by the medical officer.

Technique for Administering Therapy: All penicillin dosages should be prepared in central supply service using strict aseptic technique. The hands should be thoroughly washed before the procedure. Enough sterile syringes and needles should be on hand to allow a separate preparation for each dosage. A saturated alcohol sponge should be used to cleanse the top of the penicillin vial. (The dry needle is used to withdraw the fluid out of the vial. An amount of air equal to the amount of solution to be removed should first be drawn into the syringe so that this air may be injected into the vial to replace the fluid that will be withdrawn. This avoids the creation of a partial vacuum within the hermetically sealed bottle.) The puncture in the top of the vial seals itself automatically when the needle is withdrawn.

All syringes containing dosages for the specific hour should be placed by the technician on a sterile field on a tray and dispensed to the wards immediately.

The following items should also be placed on the tray:

1. Sterile syringes with needles containing accurate amount of penicillin as shown in diagram B.
2. A card showing the name of patient, ward number, bed number, and dosage as A.
3. A jar with sterile alcohol sponges as C.
4. A receptacle adjacent to dosages of penicillin for contaminated syringes and needles as D.

Penicillin is usually administered intramuscularly and deep intramuscular injections due to the slow absorption of the drug. The muscles of the arm are used for ordinary intramuscular injections. Deep intramuscular injections are made into the gluteal or lumbar region.

Crystalline penicillin G in oil-beeswax (P.O.B.) is also administered by the team. The preparation (P.O.B.) should be stored at room temperature and should be injected intramuscularly into the upper outer quadrant of alternate buttocks. A separate syringe should be used for each patient in compliance with the provisions of TB MED 76.

The site chosen for injection is first aseptically cleaned with alcohol (70-95%). For ordinary intramuscular injections, the syringe is held at an angle of about 45 degrees while making the injection. The patient should assume one of the following positions for deep intramuscular injections: a prone position, lie on the opposite side to the site of the proposed injection, stand up, sit down, or lean forward over the end of a table. The prone position is considered best, as relaxation of the buttock can be obtained. The size of the needle will depend upon the site of injection. The site of injection should be chosen to avoid any possibility of striking a bone or of depositing irritant material on the periosteum or near the roots of a nerve. Abscess formation and induration may be caused by leakage and deposition of the fluid. To avoid this, great care must be taken. The needle should be thrust into an alcohol-soaked gauze sponge and the syringe carried so

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



that there is no pressure on the piston. The left hand is placed flat upon the buttocks and with firm pressure the superficial tissue is drawn downward. The needle is then introduced to its full length by a single stroke. The piston must be controlled by pressure of the right thumb against it. The needle must not enter a vein or capillary. If the slightest amount of blood enters the syringe, it should be withdrawn and the procedure repeated one centimeter or more from the site of the first puncture. When it is apparent that no blood can be aspirated, the right hand holding the syringe should maintain the proper angle while the contents are slowly injected with a firm and continuous pressure on the piston.

The flow of the fluid should be free and easy. As the needle is withdrawn by the right hand, the left hand quickly pushes back the tissues to their normal position. The valve-like action thus caused by the slipping back of superficial tissues over the deeper tissue layers considerably reduces the risk of leakage of the fluid into the subcutaneous tissues. Immediately following use, contaminated syringe should be placed in the receptacle of green soap solution.

Precautions to be observed: 1. Be assured that the syringe and needle are sterile and the field has been disinfected.

2. Take every measure to save the patient from pain, remove fears and doubts, and establish confidence.

Recording: 1. To facilitate safeguarding penicillin and the auditing and inspection of the Register in the hospital, a uniform method of maintaining and recording penicillin administered should be used.

a. The penicillin register will be maintained in a permanently bound ledger - the pages accomplished as shown:

| Penicillin Register; Strength 40,000; | | | | | 64 Station Hospital, APO 6 | | |
|---|---|---|---|---|---|---|---|
| Date M/Y | Name of Patient | Time | Amt. Admin. to pt. | 24 hr total | Ordered by | Given by | On hand |
| 26 May 1944 | Frank P. James | 0900 | 30,000 units | 240,000 U. | Capt. J. Smith MC | 1st Mary Sims | 600,000 units |
| 27 May 1944 | ... Received from Pharmacy - 600,000 units ... | | | | 1st Vera Doe ANC | | 1,200,000 units |
| 22 May 1944 | Audited & found Correct by Capt. Joseph M. Starr, M.C. | | | | | Balance | 1,200,000 Units |

2. The penicillin register when not in use will remain under lock with the penicillin.

3. The same regulations apply to the safeguarding and auditing of penicillin as governs narcotics, in accordance with existing regulations. The following data will be incorporated on the top of each page of the penicillin register: a. Name of hospital. b. Strength of solution. c. All data to be complete with date, month, and year of each entry (figure not to be used for months). d. Name of patient in full. e. Amount of drug received from pharmacy. f. Time and amount administered in each dose. g. Total amount given each patient every twenty-four hours. h. Balance on hand at 2400 hours each day. i. Ordered by (name, rank of medical officer). j. Given by (name and rank of person administering drug).

4. Each supply received from pharmacy will be entered on an unused line. Name of medical officer requisitioning the penicillin from the pharmacy will be entered in the column "Ordered by;" signature of the person receiving the penicillin from the pharmacy will appear on the next unused line.

5. Each time the register is audited, the auditing officer will certify thereto by suitable entry and signature on next unused line.

6. All patients who are receiving penicillin therapy should have colored signal tables placed in their kardex unit during course of therapy. The administration of streptomycin should also be under the supervision of this team.

Summary: By establishment of a penicillin team in an Army hospital, the following is accomplished:

1. Conservation of the drug.

2. Assurance of proper administration and accurate dosage.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



3. Proper recording of the drug.

4. Conservation of time, effort, and equipment.

5. Allows ward-duty personnel more time to care for the patients.

6. With the eight-hour-duty system in effect at hospitals in the Far East Command, the establishment of a penicillin and streptomycin team is considered highly important to increasing the efficiency of the nursing service.

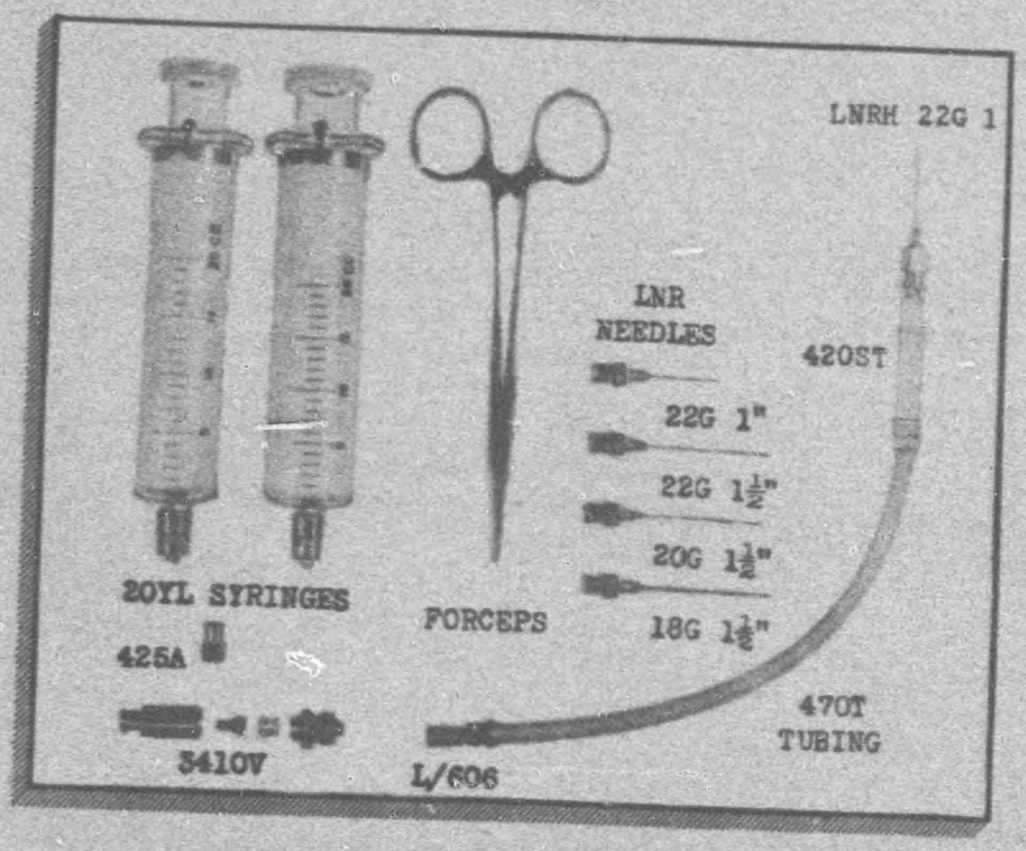
References:
1. Essentials of Nursing by Helen Young.
2. The Art and Science of Nursing by Ella A. Rothweiler, MA, RN.
3. TB MED 230, Chapter 2, paragraph 9.

XXI. Pentothal Tray by Hazel J. Peterson, RN. EXTRACT FROM: The Journal of the American Association of Nurse Anesthetists - Volume XVII, February 1949, Number One.

Early in 1940 when I first began to use pentothal sodium, we had no special equipment available for its administration. In order for the anesthetist to observe the patient properly and carefully, it was necessary to have someone hold the syringe constantly and give the pentothal sodium as directed.

The Gilson one-way valve, manufactured by Becton, Dickinson & Company, came to my attention in 1941, and it has since proved a most satisfactory answer to my problem. It is a simple, compact, efficient, and inexpensive piece of equipment.

Our sets for administration of pentothal sodium are kept in 6 by 10 inch trays with covers, sterilized and ready for use. A tray contains the following equipment:




2 20 cc. Luer-Lok syringes
1 Gilson valve set-up, with rubber tubing and observation glass and needle attached
2 Needle caps
1 18 mixing needle
1 20 1½ in. needle
1 22 1½ in. needle
1 22 1 in. needle
Preparation sponges and a forceps

The anesthetists clean and put up the sets for administration of pentothal sodium and therefore always know the needles are sharp and that everything is in good working order. Several sizes of needles are included in each set to give the individual anesthetist her preference. Personally, I prefer a 1½ inch 22 Huber point needle.

We use a 2½ per cent solution of pentothal sodium and keep several 20 cc. syringes of this solution available at all times. The tips of the syringes are capped and may be kept for forty-eight hours or longer. Any pentothal sodium left over from a case is always saved, since the one-way valve prevents any contamination. This means considerable saving of solution.

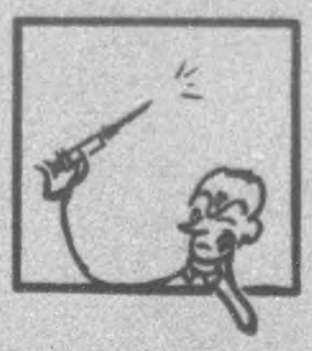
The anesthetist who uses the one-way valve inserts the needle in a vein and fastens it in place with adhesive. She is then free to give full attention to taking blood pressure, supplementing the anesthetic with oxygen or gas, and keeping the records. The Gilson one-way valve permits no back flow of blood, and the needle may be kept open for several hours by frequent small additions of pentothal sodium. If the patient is getting fluids, the needle for giving pentothal sodium may be inserted into the intravenous tubing.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



Our pentothal sodium equipment is inexpensive and easy to use. The rubber tubing or parts, such as the rubber valve, spring, or washers, may be replaced at a small cost.

## XXII. Tetanus and Typhoid Immunization Procedure



Particular attention is invited to Change 10, AR 40-210, dated 23 May 1949, and to Change 1, TB MED 114, dated 26 May 1949. The procedures prescribed in these publications are immediately applicable in the Far East Command even though not covered specifically in FEC Circular 8, subject: "Immunization," dated 2 March 1948.

In these changes, the currently applied procedure for typhoid vaccination and revaccination is republished and a new policy for tetanus immunization is announced. The new procedure in tetanus immunization involves the administration of a stimulating dose of toxoid every four years following the last stimulating dose. It should be noted that the administration of a single dose of toxoid, approximately one year after the basic immunization and at the time of injury, is still required. It is considered that the four year interval prescribed may safely be approximated at forty-five to fifty-one months, thus allowing for the administration of the stimulating dose of toxoid at a time when one of the other routine immunizations is performed.

Change 1, TB MED 114 is reproduced below for the information and guidance of all medical officers.

TB MED 114
Change 1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

IMMUNIZATION

Department of the Army, Washington 25, D. C. . . . . 26 May 1949

TB Med 114, 28 February 1947, is changed as follows:

6. TYPHOID-PARATYPHOID VACCINE

* * * * *

b. Method of vaccination. (Superseded)

(1) The initial vaccination consists of a subcutaneous injection of three 0.5 cubic centimeter doses of the triple vaccine administered at intervals of 7 to 28 days. In order to insure accuracy, a syringe of 6-cubic centimeter capacity or less will be used. Care will be taken to make the injections into the superficial subcutaneous tissue.

(2) Revaccination of stimulating doses are accomplished by--

(a) The subcutaneous administration of 0.5 cubic centimeter of the triple vaccine annually.

(b) Intracutaneous administration of 0.1 cubic centimeter of the triple vaccine annually. This procedure may be used as an alternate if accomplished by a medical officer who is experienced in the technique of intracutaneous administration.

* * * * * * * *

7. TETANUS TOXOID.

* * * * * * * * *

b. Method of immunization.

* * * * * * * * *

(2) Routine stimulating dose. (Superseded) A single stimulating dose of 1 cc of tetanus toxoid is injected subcutaneously approximately 1 year after the initial series, every 4 years following the last stimulating dose, and as indicated in (3) below.

* * * * * * * * *

c. Alternate material and method of immunization. (Added) The following alternate material and method of immunization may be used as provided in paragraph 7d:

(1) Material, tetanus toxoid, alum precipitated.

(2) Method of immunization:

(a) Initial immunization. Initial immunization consists of two intramuscular injections of tetanus toxoid alum precipitated, $\frac{1}{2}$ cc each injection, at intervals of not less than 4 or more than 8 weeks.

(b) Routine stimulating dose. A single stimulating dose of $\frac{1}{2}$ cc of tetanus toxoid alum precipitated is injected intrammscularly approximately 1 year after the initial series, every 4 years following the last stimulating dose, and as indicated in b(3) above.

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



d. Interim use of tetanus toxoid plain and alum precipitated. (Added)

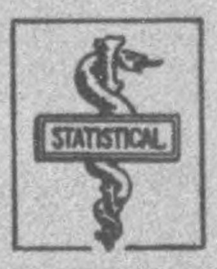
(1) Alum precipitated tetanus toxoid will be substituted in the near future as a standard material for tetanus immunization. The plain and alum precipitated toxoids are equally effective in producing active immunization against tetanus. Alum precipitated tetanus toxoid will be used in order to have uniform immunization requirements for the Army, Navy, and Air Force. For purposes of economy, tetanus toxoid plain will be used until present stocks of this material are exhausted.

(2) Personnel who have previously received the initial series of three injections of tetanus toxoid plain will not be given an initial series of two injections of tetanus toxoid alum precipitated. These individuals will be given stimulating doses as indicated using either 1 cc of the tetanus toxoid plain subcutaneously or ½ cc of the tetanus toxoid alum precipitated intramuscularly when it becomes available.

(AG 300.5 (15 April 1949))

BY ORDER OF THE ACTING SECRETARY OF THE ARMY:

OMAR N. BRADLEY
Chief of Staff, United States Army




## PART III

## STATISTICAL

### Evacuation

Tabulated below are the number of patients evacuated from the major commands to the ZI during the five report weeks in April 1949:

| | BY AIR | BY WATER | TOTAL |
|---|---|---|---|
| JAPAN | 53* | 252* | 305* |
| MARBO | 40 | 2 | 42 |
| PHILCOM | 15 | 4 | 19 |
| RYCOM | 35 | 17 | 52 |
| FEC | 143 | 275 | 418 |

*Includes 22 pnts who originated in Korea.

Tabulated below are the number of patients evacuated from the major commands to the ZI during the four report weeks in May 1949.

| | BY AIR | BY WATER | TOTAL |
|---|---|---|---|
| | 21* | 214* | 235* |
| | 21 | 4 | 25 |
| | 7 | 2 | 9 |
| | 35 | 7 | 42 |
| | 84 | 227 | 311 |

*Includes 20 pnts who originated in Korea.

During the nine report weeks in April and May, 180 patients were evacuated from Korea to Japan for further hospitalization and disposition or for onward evacuation to the ZI.

Evacuations of military personnel per thousand strength for April and May were as follows:

| | April | May |
|---|---|---|
| JAPAN | 2.6 | 1.9 |
| KOREA | 8.0 | 16 |
| MARBO | 2.2 | 1.3 |
| PHILCOM | .94 | .78 |
| RYCOM | 2.0 | 1.6 |
| FEC | 2.2 | 1.7 |

### Hospitalization

The bed status as of 29 April 49 was as follows:

| | Total T/O Beds Authd | Total T/O Beds Estab | Total T/O Beds Occupied |
|---|---|---|---|
| JAPAN | 4,650 | 4,462 | 2,174 |
| KOREA | 300 | 100 | 71 |
| MARBO | 800 | 620 | 180 |
| PHILCOM | 1,525 | 1,520 | 1,112 |
| RYCOM | 750 | 443 | 290 |
| FEC | 8,025 | 7,145 | 3,827 |

The bed status as of 27 May 49 was as follows:

| | Total T/O Beds Authd | Total T/O Beds Estab | Total T/O Beds Occupied |
|---|---|---|---|
| | 4,650 | 4,506 | 2,309 |
| | 300 | 100 | 12 |
| | 800 | 593 | 207 |
| | 1,275 | 1,270 | 1,107 |
| | 750 | 443 | 303 |
| | 7,775 | 6,912 | 3,938 |

The percent of T/O beds and established beds occupied as of 29 April 1949 was as follows:

The percent of T/O beds and established beds occupied as of 27 May 1949 was as follows:

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



| | Percent Authorized T/O Beds Occupied | Percent of Estab Beds Occupied | Percent Authorized T/O Beds Occupied | Percent of Estab Beds Occupied |
|---|---|---|---|---|
| JAPAN | 47 | 49 | 50 | 51 |
| KOREA | 24 | 71 | 4 | 12 |
| MARBO | 23 | 29 | 26 | 36 |
| PHILCOM | 73 | 73 | 87 | 87 |
| RYCOM | 39 | 65 | 40 | 68 |
| FEC | 48 | 54 | 51 | 57 |

Admission rates per 1000 troops per annum for April and May were as follows:

| | FEC | | JAPAN | | KOREA | | MARBO | | PHILCOM | | RYCOM | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Apr | May | Apr | May | Apr | May | Apr | May | Apr | May | Apr | May |
| ALL CAUSES | 604 | 584 | 687 | 641 | 803 | 678 | 259 | 282 | 588 | 714 | 413 | 449 |
| DISEASE | 554 | 522 | 636 | 575 | 747 | 583 | 210 | 237 | 520 | 642 | 379 | 409 |
| INJURY | 51 | 62 | 51 | 66 | 55 | 95 | 49 | 45 | 68 | 72 | 35 | 40 |
| PSYCHIATRIC | 11 | 13 | 11 | 12 | 29 | 13 | 9.6 | 15 | 9.2 | 12 | 5.0 | 16 |
| COMMON RESPIR-ATORY DISEASE | 89 | 49 | 125 | 62 | 68 | 69 | 34 | 20 | 30 | 40 | 3.5 | 0 |
| INFLUENZA | .94 | .85 | 1.0 | .34 | 6.3 | 15 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRIMARY ATYPI-CAL PNEUMONIA | 6.2 | 4.7 | 5.9 | 3.2 | 10 | 9.1 | 5.3 | 5.1 | 2.0 | 0 | 11 | 13 |
| COMMON DIARRHEA | 5.7 | 2.5 | 2.7 | 1.6 | 64 | 7.3 | 0 | 2.9 | 7.2 | 16 | 2.5 | 0 |
| BACILLARY DYSENTERY | .82 | .46 | .46 | .11 | 0 | 0 | 0 | 0 | 5.9 | 7.2 | 0 | 0 |
| AMEBIC DYSENTERY | .71 | .54 | .19 | .11 | 0 | 0 | 0 | 0 | 6.5 | 8.7 | 0 | 0 |
| MALARIA, NEW | 3.0 | 6.3 | 2.1 | 4.7 | 14 | 55 | 0 | 0 | 8.5 | 2.9 | 2.0 | 5.5 |
| INFECTIOUS HEPATITIS | 2.7 | 3.5 | 2.9 | 4.0 | 5.0 | 5.5 | 1.6 | 1.4 | 3.3 | 2.9 | 1.0 | 1.8 |
| MYCOTIC DERMATOSES | 4.1 | 5.1 | 5.9 | 7.4 | 0 | 0 | 1.6 | 1.4 | .65 | 0 | .50 | 0 |
| RHEUMATIC FEVER | .65 | 1.3 | .83 | 1.5 | 1.3 | 1.8 | 0 | 0 | 0 | 1.4 | .50 | 1.2 |
| VENEREAL DISEASE | 143 | 176 | 166 | 202 | 204 | 204 | 20 | 28 | 71 | 99 | 165 | 190 |

## IN THIS ISSUE


| | PAGE |
|---|---|
| Charges for Medical Care. | 6 |
| Control of Mosquito-Borne Diseases - New DA Film. | 4 |
| Dependents to Accompany Medical Corps and Dental Corps Officers Overseas. | 1 |
| Establishment of the Medical Services Division. | 2 |
| Fluorescent Lamps - Warning | 5 |
| Low Sodium Diet | 8 |
| Medical Corps - Voluntary Extensions. | 2 |
| Medical Department of the Air Force | 5 |
| Medical Personnel Shortage. | 2 |
| Medical Records | 4 |
| National Guard MC Officers to Participate in Army Graduate Study Program. | 3 |
| Organization of the Medical Section | 1 |
| Penicillin and Streptomycin Team Established at Army Hospitals (Part Two) | 14 |
| Penicillin Storage. | 5 |
| Pentothal Tray. | 17 |
| Quotas Set for Doctors of Medicine and Dentistry. | 1 |
| Recent Department of the Army and FEC Publications. | 6 |
| Reserve Army Nurse Corps and WMSC on Inactive Status can Receive Annual Retirement Credits. | 3 |
| Results of Dental Examination of 15,000 Philippine Scouts | 9 |
| Statistical | 19 |
| Tetanus and Typhoid Immunization Procedure. | 18 |
| The Infectious Diseases of the Central Nervous System | 13 |

DECLASSIFIED E.O. 12065 SECTION 3-402/NNDG NO. 775013



## General Bethea Departs Far East Command

Major General JAMES A. BETHEA came to the Far East three years ago as the Chief Surgeon, United States Army Forces, Pacific. This month he leaves this command for his next assignment at Brooke General Hospital, Fort Sam Houston, Texas, where he plans to retire in October after service of thirty-three years in his career as military surgeon.

General Bethea was born at Marion, South Carolina, in 1887. His pre-medical studies were accomplished at Clemson College and his medical degree was awarded at Tulane University in 1913. After joining the Army Medical Corps in 1916 he attended and was graduated from the Army Medical School in 1917.

In his service as a U. S. Army Medical Officer throughout World War I, General Bethea advanced from the rank of first lieutenant to major. His war service in Europe included duty with the Fourth Division in France and as a member of the Army of Occupation in Germany. Returning to the United States in 1919, his tours of duty included Walter Reed General Hospital, Washington, D. C., and Letterman General Hospital, San Francisco, California, in addition to other posts throughout the United States. His overseas duty between wars also included tours at Panama and Philippine Islands. General Bethea is a Fellow of the American College of Surgeons and Diplomate of the American Board of Surgery, and is recognized as one of the top surgeons in the Army.

Early in World War II General Bethea assumed command of McCloskey General Hospital, Temple, Texas, after prior duty as Chief of Surgical Service at Fort Sam Houston. McCloskey General Hospital during World War II was known as one of the largest amputation and neuro-surgical centers in the United States. The peak load of the hospital came in August 1945 with 5,560 patients entered on the hospital roster. For his exemplary performance of hospital administration during the forty-three months at McCloskey, General Bethea was awarded the Legion of Merit.

In addition to technical planning and supervision of the vast program of adequate medical care for the sick and injured throughout the Far East General Bethea has at all times insisted on the application of modern techniques and procedures for the prevention of disease among military and other personnel of the command. Concurrently with the health programs in the Far East there has been continual planning and implementation of ways and means to improve and consolidate medical facilities. General Bethea has made every effort through personal estimates to bring about the maximum utilization of existing medical personnel and facilities for the troops and civilians of the command. The General has stressed and practiced full cooperation and coordination between the medical services of the Navy, Army and Air Force. This has resulted in a more economical utilization of critical medical specialists through joint use of facilities and/or reciprocal agreements.

At General Bethea's departure the Far East Command is bidding goodbye and Godspeed to an officer of outstanding medical technical knowledge and administrative ability.



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The Chief Surgeon extends an invitation to all personnel of the Medical Department to prepare and forward, with view to publication, articles of professional or administrative nature. It is assumed that editorial privilege is granted. Copy should be forwarded so as to reach the Medical Section, GHQ, FEC, not later than the 10th of the month preceding the issue in which publishing is desired.

Capt. Vincent I. Hack, Editor

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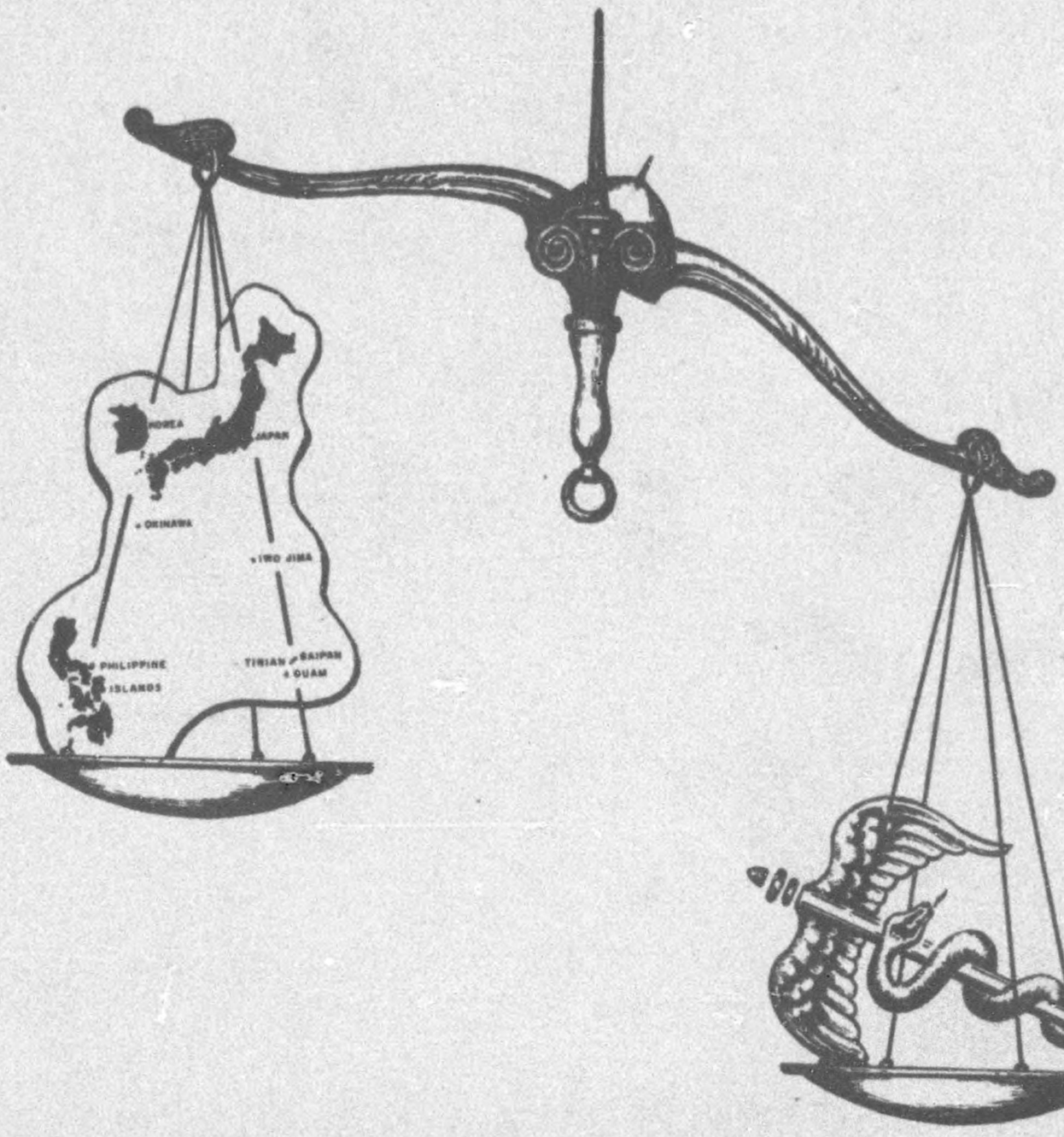
Tokyo

# MED. SEC. GHQ. FEC.

VOL IV NO 6
1 JUN 1949




A FAR EAST PERIODICAL OF MEDICAL DEPARTMENT INFORMATION

# SURGEON'S CIRCULAR LETTER

RESTRICTED