

historian. We need critical papers based on documentary evidence not hearsay. These preliminary contributions cannot be prepared without complete sets of proceedings. It is for the preservation of these that I plead first of all. You, gentlemen, are duty bound to see to it that your respective state libraries are provided with such sets.

Lest my account seem pessimistic, permit me to close with a quotation from a letter received from the secretary of the Texas Pharmaceutical Association:

"A few years ago we attempted to get a complete file copy for ourselves and we were fortunate enough to locate some of these in your Library and some in Lloyd's Library at Cincinnati. We had typewritten copies made of these missing numbers and we hope some day to find the funds to have them reprinted. If this is ever done you may be sure that we will supply your library with a copy of the same as we feel deeply indebted to you for the service which you rendered us in this matter.

"We now have a complete copy of the Proceedings of each meeting or a newspaper account of the same. It is my opinion that probably one or two of the earlier meetings did not have a printed Proceedings and I resorted to old newspaper files for such information as I could get. I also was fortunate enough to secure photographs of all past-presidents and past-secretaries covering over 56 years. Very little of these records were in the files of the ASSOCIATION when I took hold of them thirteen years ago."

What Mr. Adams has done, each and every one of you can do if necessary. Far from being a pessimist, the very fact that I, a septuagenarian who soon must cease to do work of any kind, have asked for permission to make this plea to your body, must reveal to you that I am an optimist. Personally, I prefer to be neither pessimist nor optimist, but realist. So please see to it that what may seem visionary to many of you may become real.

PHARMACY IN THE UNITED STATES NAVY.*

BY E. G. SWANN.¹

In the organization of every Navy ship there is a Medical Department and one of the units in this department is a dispensary, occupying a special compartment or room provided in the original construction plans of the ship. The built-in fixtures in this room consist of a prescription counter and cabinet, sink with hot and cold running distilled water, desk, file cabinet, narcotic and poison locker, book racks, shelves and bottle racks. The equipment consists of a prescription balance, sterilizer, refrigerator, electric hot plate, mortars and pestles, pill tile, shelf bottles, graduates and many minor items of equipment required in compounding and dispensing. The dispensary is stocked with all items of medical supplies listed on the Naval Medical Supply Table. The pharmaceutical library consists of a copy of each of the latest editions of the United States Pharmacopœia, the National Formulary, the Pharmaceutical Recipe Book, the United States Dispensatory, a textbook on the "Principles of Pharmacy" and a textbook on "General Chemistry." In addition there are available to all the Hospital Corps men the books and journals

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in the medical and dental library of the ship. There are about seventy-five large and one hundred and twenty-five small dispensaries on Navy ships.

There are about forty dispensaries located in naval hospitals and at shore stations. These dispensaries are equipped with the usual fixtures and equipment found in a modern dispensary in a civil hospital. They are stocked with all the items of drugs on the Naval Medical Supply Table and additional items of drugs and preparations required for treatment of the sick. The Metric System of weights and measures is used exclusively in compounding and dispensing in the Navy. This practice is in accordance with an order approved by the Secretary of the Navy, dated April 15, 1878, which directs that "The Metric System of weights and measures shall hereafter be employed in the Medical Department of the Navy."

Forty-five preparations of United States Pharmacopœia and 49 National Formulary preparations are compounded and dispensed in the Navy from the stock of drugs and preparations listed on the Naval Medical Supply Table.

In addition to these United States Pharmacopœial and National Formulary preparations many of the preparations listed in the Pharmaceutical Recipe Book and special preparations are compounded and dispensed.

The medicinal substances listed on the Naval Medical Supply Table may be classified as follows:

- 124 U. S. Pharmacopœial drugs and chemicals
- 35 U. S. Pharmacopœial pharmaceutical preparations
- 7 National Formulary drugs and chemicals
- 4 National Formulary pharmaceutical preparations
- 12 U. S. Pharmacopœial biologicals
- 8 New and Nonofficial Remedies—biologicals
- 13 Other Nonofficial drugs and preparations
- 40 Reagent chemicals.

These make a total of 203 different medicinal substances, excluding the reagent chemicals, of which 150 are listed in the 1936 edition of "Useful Drugs." This tabulation shows clearly that the Navy uses principally official drugs and preparations in the treatment and prevention of disease. A few proprietary remedies are used such as Insulin, Protamine Insulin, some of the roentgenological diagnostic agents, the new organic arsenicals, etc., but the general policy is to use the proprietary drugs with discretion.

Medicines and all other medical supplies including surgical dressings, surgical instruments, dental supplies and X-ray supplies for the Navy are purchased, inspected, stored and distributed by the Naval Medical Supply Depot at Brooklyn, New York. This depot is equipped with chemical, physical, roentgenological and bacteriological laboratories where careful inspections are made on all materials purchased prior to their acceptance. The work in these laboratories is performed by members of the Hospital Corps under general supervision of medical officers. There is also a Naval Medical Supply depot located at Mare Island, California, and one in the Philippines, but all supplies are purchased by the depot in Brooklyn.

Pharmaceutical duties in the Navy are performed by members of the Hospital Corps under general supervision of medical officers.

In the early period of our naval history pharmaceutical duties in the Medical Department were performed by warrant officers known as surgeon's mates. The

duties of a surgeon's mate were outlined in detail in the Rules and Regulations for the Naval Service, 1818, as follows:

DUTIES OF THE SURGEON'S MATE.

"1. They shall be subject to the orders of the surgeon. They shall weigh or measure every article of medicine and hospital stores issued. They shall keep a journal of the diseases and treatment of all cases, an abstract of which shall be given to the surgeon, that he may be able to report thereon to the Secretary of the Navy at the expiration of every cruise.

"2. They shall be careful to see that the medicines prescribed are administered as directed and that the sick are supplied with proper nourishment. They shall be particularly careful in directing the loblolly boy to keep the cockpit clean, and every article therein belonging to the medical department. They shall, under the direction of the surgeon, personally apply dressings to wounds and ulcers, perform the operation of blood letting, and, in all important cases, they are personally to administer the medicines prescribed or see them given, and do all other duties appertaining to their profession which the surgeon may direct.

"3. They must direct the orderlies to wash all bandages and compresses daily in hot water with soap or potash and see that they are returned clean and dry to the cockpit.

"4. In the absence of the surgeon the mate eldest in commission shall act as the surgeon. They shall likewise aid in preparing the necessary reports required by the rules and regulations of the Navy."

The title "Surgeon's Mate" was superseded by the title "Surgeon's Steward" some time after the year 1828. A Circular Order of the Navy Department dated April 1, 1841, referring to surgeon's steward reads in part as follows:

"A surgeon's steward is allowed at all hospitals and navy yards and on board every vessel having a medical officer. As it is important that a respectable class of persons should be employed in this capacity, surgeons will endeavor to select such as have some knowledge of pharmacy and ordinary accounts and are of industrious and temperate habits."

The title "Apothecary" superseded the title "Surgeon's Steward" in accordance with a Circular Order of the Navy dated December 8, 1866, and reads in part as follows:

"The designation of persons serving as surgeons' stewards is changed to that of apothecary, and they will be appointed for duty in the Medical Department of the Navy, ashore and afloat, in the same manner as surgeons' stewards having heretofore been appointed. Apothecaries of the first class will rank with boatswains and will receive \$750.00 per annum."

Three years later, 1869, first-class apothecaries were reduced in rank from the status of a warrant officer to the status of a petty officer and continued in that status until the year 1898 when some of the senior ones were appointed warrant officers in the new Hospital Corps.

Apothecaries were appointed from civil life. They were supposed to have been representative men of the pharmaceutical profession of their time. The Naval Regulations in 1896-1898 restricted the enlistment of apothecaries in their first enlistment to graduates of recognized colleges of pharmacy between the ages of twenty-one and twenty-eight years. They were required to pass a professional examination before a board of three medical officers and to present testimonials or certificates as to character, good habits and sobriety.

The apothecary rating was abolished in the year 1898 when Congress passed an act creating the Hospital Corps. This act established the warrant grade of "Pharmacist" and the enlisted ratings of "Hospital Steward" and "Hospital Apprentice."

Twenty-five of the apothecaries were appointed to the new grade of "Pharmacist" and the other apothecaries were enlisted as hospital stewards and hospital apprentices. In the year 1912 Congress passed an act creating the grade of "Chief Pharmacist" to rank with, but after, ensign.

The present organization of the Hospital Corps is in accordance with an act of Congress passed in 1916. This act provided for one commissioned warrant grade, one warrant grade and six enlisted ratings designated by the following titles:

- Chief Pharmacist (Commissioned Warrant Officer)
- Pharmacist (Warrant Officer)
- Chief Pharmacist's Mate (Chief Petty Officer)
- Pharmacist's Mate First Class (First Class Petty Officer)
- Pharmacist's Mate Second Class (Second Class Petty Officer)
- Pharmacist's Mate Third Class (Third Class Petty Officer)
- Hospital Apprentice First Class
- Hospital Apprentice Second Class.

The training of Hospital Corps men is a subject of great importance and one to which the Bureau of Medicine and Surgery gives much serious consideration. During their first enlistment Hospital Corps men are given general training which includes a course at one of the hospital corps schools followed by practical and theoretical instruction in the naval hospitals and service on board ships. In order to provide adequate numbers of Hospital Corps men trained as technical assistants sixteen different courses are given to selected men who have finished four or more years of service. One of these is a course in pharmacy and chemistry given at the Naval Medical School, Washington, D. C. The purpose of this course is to train men for duty as pharmacy technicians in naval dispensaries, and for duty as chemistry technicians in the chemical laboratories of the Medical Department. It covers a period of nine months' theoretical and practical instruction, and while attending this course the students do not perform any other duty. Upon satisfactory completion of the course, the men are awarded certificates as technicians in pharmacy and chemistry. The instruction is divided as follows: Chemistry 507 hours, pharmacy 773 hours, lectures 448 hours, laboratory work 832 hours. A number of selected officers and men are given courses in pharmacy and chemistry in universities at Government expense. Those receiving this special training work in the service laboratories and service schools.

Pharmaceutical training of all Hospital Corps men begins when they first enter the Navy. During the first four months' instruction at the Hospital Corps School they are taught weights and measures, simple pharmaceutical procedures, materia medica, toxicology and pharmaceutical arithmetic in addition to other subjects. In their advancement through the various ratings a higher degree of pharmaceutical knowledge is required for each successive step in promotion. Practical pharmacy is being taught daily in all of the dispensaries throughout the service.

Pharmaceutical duties constitute only a small part of the general duties of Hospital Corps men. They serve as general assistants to medical and dental officers in all their activities. Some of those in the warrant and commissioned warrant grades serve in various administrative positions such as appropriation accounting, property accounting, commissary supervision and personnel accounting.