

PROBLEMS OF THE HOSPITAL PHARMACY.*

BY S. W. MORRISON.¹

It is of vital importance to the progress of Pharmacy that the hospital pharmacy be maintained on a high level, for it is there that the young doctor first makes contact with the pharmacist and gathers his first and most lasting impressions of him and his profession. In the hospital, the doctor consults and works with the pharmacist more than he does in the average retail store.

In general, the pharmacist does not receive the recognition and consideration due him by the managers and superintendents of hospitals. In many instances there is insufficient help, lack of proper equipment and a poor location. This condition may be due to several factors; an incompetent pharmacist, lack of funds or lack of information by the superintendent regarding the importance and the needs of the pharmacist.

There is a growing tendency to take the purchasing of drugs and certain hospital supplies away from the pharmacist and to place it in a central service station. It is important that the pharmacist assert himself and keep the purchasing and handling of drugs under his control.

In order to make your services most valuable, it is necessary that the medical staff be informed and advised regarding new preparations in stock and in the use of U. S. P. and N. F. preparations. An adequate library should be required in every hospital pharmacy where information concerning any medical preparation may be obtained. The doctors and interns are always eager to receive suggestions and information pertaining to drugs or prescription writing.

To control the stock and eliminate undesirable proprietaries which may be duplicates of another similar preparation, the pharmacist should meet with the various departmental staffs and discuss with them what preparations are most desirable and needed and to recommend U. S. P. and N. F. galenicals whenever possible. By so doing a smaller variety of drugs will be needed, the cost of medication will be decreased and there will be less dead stock on the shelves.

The pharmacist should be prepared to decide upon the merits of a drug and should be equipped to assay them when necessary to determine the quality. He should also be the one to buy the drugs or at least to specify what shall be purchased.

The restrictions placed on the doctor in limiting the type or number of drugs or the form of administration should not exist, except to eliminate as much as possible the proprietary drugs which are duplicates of U. S. P. or N. F. preparations.

It is our policy at Illinois Research Hospital to permit the doctor to prescribe any form of medication that he wants. By doing so he is more impressed with your ability and your desire to be of service and learns to write prescriptions requiring pharmaceutical compounding. Likewise, in a teaching institution such as ours, where the pharmacy students receive instruction and training in the hospital, it is highly desirable that the greatest possible variety of prescriptions be available for the students.

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Absolute cleanliness is imperative to proper recognition. Insist on a clean properly equipped drug room. Too often the drug room is not clean or inviting in appearance, balances and equipment are tarnished and soiled, and dirty utensils are allowed to accumulate.

You can render a very useful service by supplying the doctor with any special form of medication. If a doctor requests a particular substance in ampuls for hypodermic use, the pharmacist should be prepared to make such a solution. All intravenous solutions should be prepared or supervised by the pharmacist. Too often such solutions are purchased ready made or are made by some one in the hospital who is not a pharmacist.

Another essential to proper hospital service is to operate the pharmacy in an economical manner. Most hospitals operate on a very close margin and the lowering of costs is of vital importance. One way to lower costs is by manufacturing the galenicals needed in the hospital. I realize that many hospitals do not have sufficient help to manufacture many of the galenicals or intravenous solutions. In some cases added help can be justified by improving the service and by lowering the cost of medication. I know of a hospital that hired a pharmacist to manufacture preparations because he was able to show the manager how he could save considerably on the cost of drugs.

The use of intravenous dextrose solutions has increased to the extent that it becomes one of the major duties of the pharmacist to prepare these solutions. A 50% solution of dextrose is made using warm freshly triple distilled water and is then filtered through filter paper till clear. Filtration is rapid and this stock solution is then ready to make the 5% or 10% solutions as requested. A 40-oz. bottle with a bakelite cap is used. It is first washed with soap solution, rinsed thoroughly with water, then triple-distilled water to be sure that it is perfectly clean. Freshly triple-distilled water is used for making the solutions and the bottles are capped with parchment paper before sending to the autoclave. The solution is sterilized at 15-lb. pressure for 15 minutes. The cost of a 10% solution is 3¢ per liter (excluding labor) if made with Dyno, a brand of dextrose made by the Corn Products Co. Double-distilled water is satisfactory if properly distilled and used immediately. Another important precaution is the necessity of chemically clean rubber tubing and glassware. If desired the 50% solution may be sterilized at 5-lb. pressure for 40 minutes and kept for future use.

Ampuls of congo red, indigo carmine, isoioideikon, procaine, sodium citrate, sodium iodide and others can all be easily made and at considerable saving. Washed, noncorrosive glass ampuls are filled with the solution by means of a large hypo needle attached to a burette. The ampul is sealed and then sterilized in the autoclave. In some instances the solution is put in rubber-capped serum bottles and sterilized.

Further economy may be effected by the use of bulk ether for anesthesia. We have used bulk ether U. S. P. XI in 27-lb. drums for over 2½ years with very good results. Only once in that time have we had a drum of ether that could not be used for anesthesia. The ether is tested each time it is issued to the operating room, for acids, aldehydes and peroxides. The U. S. P. XI tests are used for the acids and peroxides. The sulfurous acid-fuchsin T.S. is used for the aldehyde test. The ether, if satisfactory, is put in ¼- and ½-lb. cans tightly stoppered

with corks. The ether is quickly used and is never more than one week old. Bulk ether would not be recommended for small hospitals where the demand is less.

Since our hospital is a teaching institution, we also give the students instruction in tablet manufacture. Tablets of ephedrine, ephedrine and phenobarbital, sodium chloride, ammonia chloride, sodium acid phosphate, methenamine and some glandular tablets can be profitably made and with very little effort. We are equipped with a 3B Colton Tablet machine and wet granulator and it may be found practical for you to invest in a small tablet machine which can be purchased for as little as \$75.00.

Our hospital is divided into departments, each one having a separate budget. The drug room operates on a revolving fund, the income coming from the charges for drugs sent to the various departments. By such a plan not only the pharmacist but also the department head must carefully watch the purchases. A hospital of 450 beds can successfully function on a budget of \$7500 a year, for drugs.

The hospital pharmacist has a very responsible position to fill and can do much to strengthen the position of Pharmacy.

WHO WAS THE AUTHOR OF THE FIRST PHARMACOPŒIA PUBLISHED IN THE UNITED STATES?*

BY C. O. LEE¹ AND F. J. LEBLANC.²

The first pharmacopœia to appear in the United States is known as the military pharmacopœia published at Lititz, Pa., in 1778. It has been referred to as a diminutive formulary intended for the use of surgeons in the temporary hospitals during the Revolutionary War.

It is said that only two copies of this original pharmacopœia are in existence. One of these is in the Library of the Surgeon-General's Office at Washington, D. C. A second copy is said to be in the possession of a druggist in Lancaster, Pa.

Most writers upon the subject credit Dr. William Brown as being the author of this first pharmacopœia. Concerning him Wilbert (2) says that little is known about his life and personality. It is recorded that he succeeded Dr. Benjamin Rush as physician-general to the middle department of the Continental Army, July 2, 1777, which position he resigned July 21, 1780 (1).

The *Dictionary of American Biography* states that, "while serving in the Revolutionary Army in 1778, Brown brought out the first pharmacopœia ever published in the United States, a pamphlet of thirty-two pages, written entirely in Latin." It is said to have been based on the Edinburgh Pharmacopœia of the day (6).

The *Index Catalogue* (7) gives the full title of this text and places the name of Brown in brackets [Brown (W)] along with it.

Upon the first page of a reproduced copy of this pharmacopœia there is to be found a note in longhand, addressed to the Junior Physician and Surgeon, General Hospital in which it is stated, among other things, that "the following Pharmacopœia has been compiled." The signature of W. Brown is at the end of the note.

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