

1. Arsphenamine U. S. P., in the treatment of Vincent's disease.
2. Howe's Ammoniacal Silver Nitrate Solution (3), to retard the progress of dental decay.
3. Compound Chloroformic Solution of Mastic, N. F. V, pulp capping.
4. Chloroformic Solution of Rosin, N. F. V, pulp capping.
5. Dental Polishing Paste (Mickelsen) (4), professional use only.
6. Compound Dental Liniment of Aconite, counter-irritant for relieving pain involving the gums.
7. Compound Dental Liniment of Aconite and Iodine N. F. V, used on the gums as a refrigerant counter-irritant.
8. Eugenol U. S. P., reducing agent.
9. Formaldehyde U. S. P., reducing agent.
10. Toothache Remedy N. F. V, Black's well-known 1-2-3 mixture.
11. Liquefied phenol U. S. P., devitalizing agent.
12. Mercury U. S. P., amalgams.
13. Compound Solution of Iodine U. S. P., disclosing agent.
14. Tincture of Iodine U. S. P., counter-irritant and antiseptic.
15. Sodium Perborate, treatment of Vincent's disease.

REFERENCES.

- (1) Smith, *Jour. A. D. A.*, 18 (April 1931), 637.
- (2) Isaacs, *Ibid.*, 19 (January 1932), 54.
- (3) Gorden, *Ibid.*, 20 (March 1933), 530.
- (4) Mickelsen, *Jour. A. Ph. A.*, 22 (November 1933), 1115.

HOSPITAL PHARMACY.*

BY RICHARD D. FRANKLIN.¹

MANUFACTURING.

The amount of manufacturing to be regarded as advisable depends largely upon the number of prescriptions dispensed and the number of pharmacists employed. For a small hospital with only one pharmacist it is often advantageous to buy most of the finished preparations. Our hospital has a capacity of about 300 beds, and treated 35,000 out-patients during the past year. We have found it profitable to manufacture many of the official and non-official elixirs, ointments, mixtures and solutions, but deem it advisable to buy many other preparations, such as assayed tinctures and fluidextracts, ampuls of various medicinal substances, and all tablets and pills. In other words, the simpler preparations can be made in the pharmacy, while those requiring more elaborate equipment, or better suited to mass production, should be purchased.

PURCHASING.

Purchasing merits the personal attention of the pharmacist, and should not be left entirely to the purchasing agent. Quality and service are most important,

* Charles V. Chapin Hospital located in Providence, R. I., was formerly known as the Providence City Hospital; the name was changed in December 1931, in honor of Charles V. Chapin, M.D., who was for forty-eight years Superintendent of Health of Providence. The hospital was, primarily, for infectious diseases, but tubercular and neuropsychiatric patients are treated also.

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and it is, therefore, poor economy to deal with houses that have been found to be unreliable as to quality of goods, or promptness of delivery.

DISTRIBUTION TO WARDS.

Most of the requisitions from the wards come in early, and can usually be filled before the prescriptions from the out-patient department begin to arrive. All preparations are dispensed in bottles or jars; wide-mouth bottles for tablets, pills and powders, and narrow-mouth for liquids. The glass may be white or amber, depending on the preparation and the necessity for protecting it from light. Such bottles are inexpensive and much more satisfactory than paper or card-board containers.

The label carries the name of the medication, the date and the initials of the pharmacist who is responsible. Materials known to deteriorate are issued in small quantities, with an additional label calling attention to the expiration date, or the date on which any remaining material is to be returned to the drug room. Tincture of digitalis, for example, when issued to the wards is given a month's dating; if any is returned, it may, if approved, be dispensed to the out-patients. Silver colloids and alkaloids without preservative are returned in two weeks. Wards are inspected periodically to prevent overstocking and the accumulation of out-dated preparations.

A complete record of each prescription is filed, as in any modern retail pharmacy. This record contains the name, address and age of the patient, together with the prescription number. Prior to 1930 about eighty per cent of our out-patients paid for their prescriptions, but during the last three years the number of patients paying for their medicine has dropped to about ten per cent. The resident physician in charge of the out-patient department, with the assistance of the social service department, investigates all cases before deciding that they are unable to pay, and signs all prescriptions that are to be dispensed free. We do not feel that we are competing unfairly with retail pharmacists, for, although we may cut in on a small amount of their paying business, we save them far more by taking care of those who cannot pay cash, and from whom collection would be difficult and in many cases impossible. During the last calendar year we have dispensed 30,000 prescriptions to out-patients and the needy and unemployed of the city of Providence, at an average cost of about twenty-five cents.

While we have our own hospital formulary and find it useful in many ways, the greater part of our prescription work is entirely individual. Considerable time could be saved by the use of stock mixtures but, in general, individual prescriptions are to be regarded as more desirable.

The hospital employs three registered pharmacists, all graduates of the R. I. College of Pharmacy, one assistant, one student pharmacist and one porter. The pharmacist who fills a prescription is responsible for that prescription, as we employ no checking system. We feel that the advantage to be gained by having a second man check the prescription is fully offset by the tendency of the system to divide responsibility, and that the extra work and expense are therefore not justified. The drug department is open from 8:30 A.M. to 9:00 P.M. daily, including Sundays and holidays. Each pharmacist works about 50 hours per week. Clinics are also conducted by the hospital in two different sections of the city. These

clinics are pediatric in nature, and one of our pharmacists is always in attendance during clinic hours. All packages are wrapped before being sent out.

DISPENSING MEDICINES TO THE NEEDY, AND METHODS OF HANDLING RELIEF WORK.

One full-time and several part-time physicians are employed by the city to care for those unable to pay. Prior to 1932 many retail stores furnished free medicine to such patients, but in 1932 the increasing number of free prescriptions forced them to abandon this practice, and the city had to take up the work. The city physicians carry small supplies of drugs, furnished by the city, for emergency use. When they find it necessary to write prescriptions they adhere as closely as possible to standard and official drugs. At first the cost was borne by the Health Department, but in January of 1933 the Department of Public Aid assumed the expense for prescriptions issued to patients coming under the heading of "Unemployed Relief" and "C. W. A." workers. These are accompanied by a letter of identification from a social service worker connected with the Department of Public Aid. Since the establishment of the F. E. R. A. the system has been changed in that patients are allowed to call their own physicians, at the expense of the Department of Public Aid. As a result, costs have greatly increased, for about 75 per cent of the prescriptions are for proprietary medicines, many of which cost from \$1.00 to \$2.50. As the matter of dispensing now stands, the Health Department pays the needy sick who are too enfeebled to work and those who would have no means of support even if times were better. The Department of Public Aid, through City and Government appropriations, pays the cost of medicines issued to the unemployed and F. E. R. A. workers.

LABELING.

The label carries the serial number of the prescription, the date, directions and signature or initials of the pharmacist who is responsible. In order to discourage self-medication, as well as to save the patient possible embarrassment, names of medicines and formula numbers are not, as a rule, put on the label.

VALUE AND USE OF A HOSPITAL FORMULARY.

A hospital formulary can be of distinct value if it is kept up-to-date by regular revision, and if the physicians are familiar with its contents. The point to be borne in mind is that the formulary should not be followed too slavishly. The physician should be encouraged to write individual prescriptions when, in his opinion, such prescriptions are indicated. Individual attention to prescriptions is especially important in the departments of Internal Medicine, Dermatology and Gastro-Enterology. This practice of course increases the amount of work, and can be overdone, but the physicians who are giving their time to the free clinics deserve all the coöperation we can reasonably give them. The Council of Chemistry and Pharmacy of the American Medical Association has repeatedly gone on record against the abuse of the practice of prescribing of medicine in fixed doses to group patients. The difference between the individual prescription and that of the formulary is often quantitative rather than qualitative. The common "Sippy" powder, for example, may contain too much magnesium oxide for some patients.

REFILLS.

Out-patients are not allowed refills without an order from a physician connected with the department from which the original prescription was obtained. The same rule applies to patients from the Department of Public Aid, if the preparation contains a potent drug; if no such drug is present two refills are allowed.

EXPERIMENTAL USE OF NEW DRUGS AND REMEDIES.

The policy of the hospital administration toward new drugs and remedies is thus expressed by Dr. Richardson:

"There are on the market many useful drugs and chemicals, not listed in the United States Pharmacopœia or National Formulary, which are being tried out, and new ones are constantly appearing. They are either preparations recognized by the Pharmacopœia or Formulary, and sold under trade names, or they are slight variations from such recognized preparations, and are given new trade names. Offered under trade names, these preparations are sold at much higher cost than is warranted by cost of manufacture. In many instances, if the prescription bears the name of a chemical the price is much less than when it bears a trade name. Many of these new drugs are of no more value than are other less expensive drugs. Physicians are constantly being solicited by detail men to try these expensive preparations, and too often they are persuaded to do so.

"Certainly, progress is being made in drugs and chemicals for the treatment of illness, but physicians should be careful not to saddle unnecessary cost on their patients for new and unproven preparations. Expensive drugs, unless they are absolutely needed, should not be prescribed for poor people and persons who are on the public relief, and which must be paid for by public funds. Intelligent prescription writing is fast becoming a lost art."

NARCOTIC RECORDS.

A separate numbering system is used for prescriptions containing narcotics. No refills are allowed without a new prescription. The nurse in charge of a ward can requisition narcotics from the drug department. She must, however, report on a narcotic blank all drugs and the number of doses given the patient during the preceding 24 hours; this report is sent to the drug department daily. In conjunction with this, a physician must sign, in a special book, for all narcotics given on the ward. If the nurse desires more narcotics she must order the quantity desired and report the balance left from the previous order, and this must correspond with the total quantity first issued. Furthermore, the physician's order book is checked with the nurse's report. We limit denominations of narcotics to those most frequently used on the wards. We dispense H. T. morphine sulphate in $\frac{1}{4}$ -grain or $\frac{1}{8}$ -grain tablets, the same for H. T. codeine sulphate. If any doses are needed above or below these quantities they can easily be derived from them. There may be a little waste at times, but this is more than compensated for by not having to stock an unnecessarily large number of denominations.

NEW YORK DENTAL SOCIETIES.

New York Dental Societies on December 3rd observed the centennial of the world's first dental society—the Society of Surgeon Dentists of the City and State of New York. They also commemorated the 200th anniversary

of the first known practice of dentistry in this country as a profession. The first two practitioners were, according to the centennial announcement, Drs. James Reading and James Mills, both of whom began their dental practice in New York in 1734.