

THE HOSPITAL FORMULARY.

BY ROBERT A. HATCHER AND WENDELL J. STAINSBY.*

Large hospitals find it necessary to limit the prescriptions of the staff mainly to selected formulas, and this system has tended to promote the use of proprietary formulas which usually cost much more than their official equivalents without corresponding advantage. The physicians of the staff do not often come in contact with the purchasing department or with the pharmacy of the hospital, but they are frequently interviewed by the representatives of pharmaceutical manufacturers who persuade them that their preparations have marked advantages over the pharmacopœial.

The Formulary of the New York Hospital was prepared by a committee which invited representatives of every department to present formulas desired for their departments. In every case where a complex formula, or a proprietary preparation was desired the advocate of it was requested to present evidence of its superiority over the equivalent official preparation, and unless such evidence was submitted the committee declined to admit the article, or, in a few cases, admitted it with the proviso that it would be deleted unless evidence was presented that would justify its retention in a subsequent edition of the Formulary.

The Committee adopted the following rules governing the admission of articles to the Formulary.

Rule I.—Simple official (Pharmacopœial) substances will be admitted [when requested] unless they have become superfluous.

Rule II.—No article will be admitted (except for controlled research) before its therapeutic value has been established.

Rule III.—No article of secret composition will be admitted.

Rule IV.—No article which is sold under a proprietary name will be admitted under such a name if a substance of identical composition can be obtained under a non-proprietary name.

Rule V.—No mixture of two or more active substances will be admitted unless evidence is submitted that the mixture presents therapeutic advantages over the simple substances.

Rule VI.—No proprietary article will be accepted before it has been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in "New and Nonofficial Remedies."

Rule VII.—Requests for articles not included in the Formulary of the Hospital, but which are desired for use in controlled research which has been approved by the head of the department in which the investigation is to be conducted, will receive consideration by the Committee.

Rule VIII.—It is the policy of the Committee to discourage the intravenous and intramuscular injection of substances which should be administered orally.

A careful examination of these rules will convince one that no article which is essential to the treatment of the sick is excluded from the Formulary. For example, insulin was admitted without question, because there is no pharmacopœial substitute. On the other hand, mere popularity was not accepted as evidence of value.

In a few cases members of the staff were so firmly convinced of the superiority of a proprietary preparation that a blind test was proposed. In one such case, each of several departments was supplied with capsules containing the official barbital, and the therapeutic equivalent of a proprietary barbital derivative. These were labeled either A or B for the smaller dosage, and C or D for the larger, with the statement that the capsules contained either barbital or the derivative in question. This investigation has not yet been completed, but it is intended to analyze carefully the results of the reports of the several departments of the Hospital, in order to determine whether the evidence supports the contention of the advocate of the proprietary article. If the evidence does show that it is superior to barbital it will be admitted to the Formulary. It is intended to pursue a similar policy in every case, so far as it is possible, so that no member of the staff can have any reason to feel that he is deprived of any drug which he considers essential, but he must furnish satisfactory evidence, in the form of reports of his own investigations or from the literature.

One member of the staff was so insistent on the superiority of a proprietary preparation

* New York Hospital, Cornell University Medical College, New York City.

of theobromine over the official preparations that one of us has conducted a pharmacologic study of the problem involving probably about 200 experiments. While the results of these experiments are not conclusive, they do not afford any evidence that the proprietary preparation has any advantage over the official Theobromine Sodio-Salicylate. However, they do tend to throw light on the value of these preparations for the relief of cardiac pain in certain conditions.

As indicated in the rules, this does not interfere with the therapeutic study of any proprietary preparation, nor does it prevent the use in any department of the Hospital of any substance, concerning the superiority of which the staff is so firmly convinced that it is willing to conduct a scientific study of its uses, or to provide it at departmental expense. Since the publications of the Formulary, the Committee has continued to pass on the acceptability of various formulas and articles requested by the staff.

The Committee could not have carried out its plans without the whole-hearted coöperation of the staff, and, with very few exceptions, the rulings of the Committee have been accepted without protest after the whole subject had been discussed in considerable detail.

It is hardly necessary to state that the use of the Formulary has resulted in marked economy, but it is too early to determine the precise amount saved to the Hospital. However, we are mainly interested in a system of rational therapeutics, and we believe that the use of official preparations is far more conducive to rational therapeutics than is the use of secret or semi-secret preparations, or of a great variety of preparations having nearly similar effects, and differing only in dosage.

It is hardly necessary to state that this plan requires for its fullest success a highly skilled pharmaceutical staff capable of coöperating with the medical staff of the hospital in the conduct of therapeutic research. The training of men to fill the pharmaceutical positions in such progressive hospitals constitutes at once an opportunity, and a challenge to the schools of pharmacy, for there are few such pharmacists now available.

PHARMACOLOGY IN THE MEDICAL CURRICULUM AND THE UNITED STATES PHARMACOPEIA.*

BY JOHN C. KRANTZ, JR.

The rise of organic chemistry during the latter half of the past century, and the ever-increasing number of plant principles which were isolated, created an urgent demand for an adequate trial of these substances as therapeutic agents. To meet this emergency the science of pharmacology was created. It is a fundamental science, a combination of biological and physical science, a science that bridged the chasm between the maker and the prescriber of medicines, a science so comprehensive that to-day it touches all of the ramifications of medical practice.

In America the science of pharmacology had its beginning with the appointment of John J. Abel as professor of pharmacology in the Johns Hopkins University in 1892. The far-reaching influence of Abel's appointment is evidenced by the fact that many of the chairs of pharmacology in the leading universities in this country are occupied by his pupils. Since this time there has been a steady and definite trend in medical education away from *Materia Medica* as an empirical, didactic course to modern pharmacology an experimental science. In the medical curricula to-day, generally in the second year of study, there is a major course designated as pharmacology.

Generally the department of pharmacology of the medical faculty embraces, besides pharmacodynamics and pharmacotherapeutics, elementary materia medica, toxicology, posology, prescription writing and pharmacy. Prior to this period, in the training of the medical student, he has not come in contact with drugs or medicines and in this course the entire scope of medical pharmacology is to be introduced and the student prepared to intelligently use drugs in the clinical courses. It is at this point in the education of the physician that he becomes acquainted with the relationship between medicine and pharmacy and the significance of a national pharmacopeia in the field of therapeutics.

In the School of Medicine of the University of Maryland, we have approached the subject by dividing the material under the following subdivisions.

* Department of Pharmacology, School of Medicine, University of Maryland.