

THE SCOPE OF MATERIA MEDICA TEACHING IN THE PHARMACY SCHOOL.*

BY H. H. RUSBY.

In the presentation to students of the sciences which are basic to pharmacy, such as botany, chemistry and physiology, there need be little fear of carrying the work too far, since the more information and the better the understanding of such subjects, the better equipped is the student to profit by his instruction in the subsequent departments of pharmacy, materia medica and toxicology. With the latter subjects, especially materia medica, the situation is quite different. The student's knowledge of materia medica is gained for the express purpose of qualifying him as a pharmacist, to prepare, handle and dispense the articles of the materia medica. If there is a certain drug that is not in use and not called for, however interesting it may be from a scientific standpoint, there is obviously no demand or requirement for the pharmacist to be informed concerning it. If the field of materia medica were so limited that it could be covered in the ordinary pharmacy curriculum, it might be desirable to treat the subject in a very comprehensive way, but it is, in fact, so extensive as to render it necessary to limit the time and attention that are bestowed upon it. Thus the question before us becomes "What principles are to be applied, and what rules are to be adopted in deciding what portion of the entire field of drugs is to be covered in the materia medica course of the pharmacy curriculum?" The same question thus applied in the selection of the articles to be studied, must also be applied to the features of these drugs which should command our attention.

So far as the selection of drugs is concerned, it may be said that the therapeutic value of an article, provided it is in demand, should have little weight with the pharmacist, though of prime importance to the physician. When a pharmacist supplies a drug or its preparation, his obligation as to identity, purity and quality is not modified by the relative therapeutic value of the article concerned, so that we may begin with the general principle that the materia medica syllabus should include every drug that the pharmacist is likely to be called upon to sell or dispense, and if it is not practicable for all these to be included, the order of their importance is to be determined by the extent of their use. This would seem to indicate at least some knowledge of practically all the drugs of the Pharmacopœia and Formulary, but the extent and character of this knowledge should be determined by the nature of the relations of the pharmacist to the respective articles. There are innumerable facts relating to the origin, history and relations of drugs, a knowledge of which will rarely, if ever, be called for in the pharmacy, and it seems unreasonable that the student should be burdened with the labor of memorizing them, in ordinary cases. He should, however, be thoroughly instructed concerning the literature of such subjects, in order that he may be able to refer quickly to the proper source of such information. There are, therefore, perhaps a dozen works besides the Pharmacopœia and the Formulary in the scope and use of which the student should be instructed.

In the matter of pharmacognosy, it would appear to be superfluous labor for the student to learn the identity and physical characteristics, especially micro-

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scopical, of a large number of drugs that he is practically certain never to encounter in the crude condition. He should, however, know just where to turn for such information, if required, and his knowledge of descriptive terminology and of methods of examination should be so thorough as to enable him to use quickly and accurately the printed description and the instruments employed in his examination. With this information and a thorough training in methods of examining the different types of drugs, the student may reasonably be relieved of an immense amount of detailed study in pharmacognosy, without material detriment to his pharmaceutical fitness and ability. At the same time, he is fully equipped for consulting and using the necessary sources of information when the occasion arises.

In the matter of adulterants, impurities and imperfections of drugs, the pharmacist should be well informed, even though the crude drug may not come under his direct observation, for the reason that such conditions affect the quality of the preparations that he is called upon to dispense, and for this, he cannot escape responsibility if such preparations are made from defective drugs. I should say, therefore, that all important facts relating to the quality of drugs should receive full treatment in the pharmaceutical materia medica course.

Since facts of incompatibility and solubility determine all the processes of the pharmacy, as to both manufacture and dispensing, the general nature of the composition of all drugs, the preparations of which are handled in the pharmacy, is of prime importance. This statement relates, of course, only to the general character of such constituents; as to their being resins, volatile oils, fats, glucosides, alkaloids, etc., but in the matter of important active constituents, the case is quite different. Such constituents should be well studied, as to specific solubility, location in the drug, chemical association, standard amount and stability. When a legal standard of percentage exists, the student should be required to memorize the same accurately, and he should be thoroughly familiar with the liability of the drug to vary in this particular.

In the case of inorganic chemicals, although the principal facts relate to chemistry and pharmacy instruction, yet the purity rubric should be accurately known by every student appearing for his final examination in materia medica, or appearing before the Board of Pharmacy.

It goes without saying that every pharmacist should be familiar with the principal preparations of all drugs in common use and with their dosage, but in the matter of dosage, I would not hold the student to a knowledge of the exact figure, except in special cases. Far rather would I have him know something of the admissible range of dosage in ordinary cases.

All the classes of information to which I have referred relate to the drug itself, as an article or a substance, and without reference to its active properties and uses. It seems scarcely practicable to reduce the indications to which I have alluded to the form of lists of drugs to which these several indications apply. The most that we can do in such a discussion as the present, is to agree on certain principles for guidance and certain general rules based thereon. Considerable difference of opinion must always exist among teachers as to the application of these principles to individual drugs, and it is well that this should be so. In the textbook that has recently appeared under my partial authorship, we have gone much farther in these directions with many drugs than we would go with our classes. In other

words, the contents of that book are much more extensive than we should expect any teacher to require of an undergraduate class. This course was followed partly with the object of affording ample references, and partly to allow scope for individual selection by the teacher.

Coming to the subject of actions and uses, I find it far more difficult to determine on a course of action. It is quite clear that all poisonous drugs should be thoroughly studied as to mode and danger of occurrence of poisoning, medicinal and toxic dosage, conditions favoring a toxic effect, mode of action and the antidotal indications and treatment. The object of this thorough study of poisons is not only to qualify the pharmacist to administer emergency treatment, but to make him alertly intelligent in his estimates of danger in the prescriptions coming to him.

In regard to the ordinary medicinal action and uses of non-toxic drugs, the principle on which I act is that this is one of the subjects that the pharmacist should *know something about*, on general principles, but that he should not *know* these subjects as he does those with which he must have active professional dealings. My own practice has been, therefore, to go very thoroughly into the classification of medicines, based on their physiological action, and teach with the utmost possible clearness the general nature of both primary and secondary effects. Having thus referred the respective drugs to their therapeutical classes, the teacher is at liberty to go as far as he chooses in discussing the individual peculiarities of the several drugs.

In the matter of the biological serums, vaccines, antitoxins and similar products, where the pharmacist has nothing to do with preparation or compounding, there seems to be little absolute necessity for other information than that of storage, preservation and commercial handling, although the subject is one of great interest.

From what I have said on the subject of therapeutics, it will be inferred that the subject of experimental pharmaco-dynamics, or pharmacology as it is still called by many, is not, in my opinion, a subject for the pharmacy school.

TREND OF LEGISLATION AS INDICATED BY THE COURTS.*

BY ROBERT L. SWAIN.

While legislation is frequently the basis of decisions by the courts, it is also true that the decisions of the courts are frequently the basis of legislation. Many laws have been enacted to meet objections or to remedy conditions pointed out by the courts. Many have also been passed to set aside judicial opinion. Much of our law is Case law, so called because it is to be found in the adjudicated cases. So important is this branch or repository of the law that one of the great classifications of the law divides the subject into Statutory and Case Law. Case law is of the greatest significance to subsequent legislation. Knowing what the courts have said regarding the application of a principle to a factual situation, legislation may be more easily framed to meet the judicial view or to avoid the conditions which have not been approved. Case law is a very dependable source of statutory law.

* Section on Education and Legislation, A. Ph. A., Baltimore meeting, 1930.