

EDITORIAL

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THE IMPORTANCE OF KNOWLEDGE AND EXPERIENCE IN THE SALE AND DISPENSING OF MEDICINES.

“**H**UMAN experience, like the stern lights of a ship at sea, too often illuminates only the path we have passed over.”—Coleridge.

The quotation is applicable to unfortunate experiences in the dispensing of drugs—time after time mistakes, which have cost human life and suffering, are brought to the attention of the public; for the moment there are questionings of why these happenings and no correction of the system which permits of the handling of drugs by those not qualified by education and training.

Seemingly, selfish and “commercial” motives make some of these conditions possible. Certainly, no hospitals should permit the dispensing of medicines by others than qualified pharmacists. A recent unfortunate occurrence emphasizes that even in the handling of what are known as household remedies there is danger. The public should be impressed with these facts by information in the public press and insist on proper regulations. Accounts of the poisonings are read as news items and forgotten, except by those who suffer from the experience. We quote from the December *Southern Pharmaceutical Journal*:

“A well-known mail order house in Texas which made the mistake of dispensing medicine instead of leaving that to the legitimate channels of the drug business is now writhing under the threat of immense damage suits and the menace of still larger damage suits unless 18 five-pound packages labeled epsom salts but containing oxalic acid crystals can be recovered before they are used. The colored man who put up these salts probably couldn't read, so he couldn't be blamed for packaging what looked like epsom salts, but the house which hired an incompetent to package medicine is guilty of the crime.”

Among the results of the error several injuries are mentioned: A woman, whose intention was to take a magnesium sulphate bath, suffered serious injury from the oxalic acid solution; a man who required the action of a saline has been temporarily, if not permanently injured by an overdose of the poison. These cases have become known through damage suits and others may follow.

Not so very long ago a half pound of powdered mercuric chloride was sent out for a half pound of bulk calomel; as a result, before discovery, the patient was seriously injured.

When will the state and federal authorities take cognizance of these sources of danger and insist that drugs be dispensed in hospitals by trained pharmacists and sold only by qualified pharmacists? A qualification of every hospital should be “that a pharmacist is in charge of its pharmacy.” No one should be permitted to sell drugs who is not registered under the State pharmacy law. Dereliction along these lines seems to warrant the statement that selfish and “commercial” motives interfere with insistence or proper provisions for the sale and dispensing of medicines.

Want of education and training subjects the people to the effects of chance.

COÖPERATION BETWEEN PHYSICIANS AND PHARMACISTS.

DR. MORRIS FISHBEIN, editor of the *Journal of the American Medical Association*, in an article in the *Chicago Retail Druggists' Association News*, on the coöperation between physicians and pharmacists, states the following:

"When James Percival wrote his *Principles of Ethics for the medical profession* in 1803, a special section was devoted to the importance of proper coöperation between physician and pharmacist. The recognition of definite brotherhood between the professions has existed since the beginning of medical history. Galen, whose doctrines governed medical practice for more than twelve hundred years, began with a pharmacist shop near the Forum in Rome. From his day to ours both professions have made tremendous strides. The modern pharmacist must be a well-educated man with special knowledge of chemistry and biology, as well as of compounding of drugs and their preparations. The armamentarium of therapeutics includes substances so potent that dosages are measured in millionths of grams or cc. and products so delicate that their preservation demands large and costly equipment. The physician thoroughly trained in therapeutics must depend on the pharmacist to provide what he desires for the patients promptly and efficiently. The promotion of scientific prescribing and dispensing will increase confidence in medicine and in pharmacy and is unquestionably the best method of attacking pseudo-scientific and fanatical cultists who oppose medical progress."

We repeat what has been stated before in these columns: the reason for the existence of pharmacy is the practical service to man. All of this service is not rendered directly to the patient, but largely by direction of the physician. It is a service of supplying medicine in most effective form, using due care in the preparation, thereby protecting the physician as well as the patient, hence both are concerned in the pharmacy and in the qualifications of the pharmacist, to uphold the standards and restrict the preparation and sale of medicines to those properly trained and who, therefore, realize their responsibility. This constitutes protection and who will say that one is less important than the other in the preservation of life and health.

Realization of responsibility comes with proper pharmaceutical training and education. Members of related professions acquaint the public, in a dignified way, with the importance of their professions; this has been pointed to by leaders, and rightly so, as a service. There is no reason why pharmacists should not do likewise; greater pride in the profession will contribute to its service.

STUDY OF DRUG STORE MERCHANDISING AND SURVEYS OF PHARMACY.

IN THE July number 1930 of the *JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION*, an editorial report was made of the contemplated survey and study of distribution through drug store channels. The plan for this work is being developed and it has been definitely agreed to begin on January first and continue for one year a fact-finding study of drug store merchandising. Ten

drug stores, including two chain stores in St. Louis, and a country store, will serve as laboratories for this study which will have a national application.

More than thirty national associations representing industries using drug stores as retail outlets are sponsoring the study through the National Committee. The officers are: *Chairman*, Robert L. Lund, St. Louis; *Vice-Chairman*, R. E. L. Williamson, Baltimore; *Treasurer*, J. H. Riemenschneider, Chicago; and *Executive Secretary*, J. A. Troy, of the St. Louis Chamber of Commerce. The National Committee is working with a Local Ways and Means Committee composed of St. Louis business men representing all branches of the drug trade.

Wroe F. Alderson, chief business specialist from the U. S. Department of Commerce, who delivered an address before the Baltimore meeting of the A. Ph. A., has, in coöperation with the National Drug Store Survey Committee, prepared a comprehensive survey plan, and his report has been used in preparing this comment. He has set forth the following as some of the interesting questions on which the survey is expected to shed some definite light:

"Which departments are showing a profit? Which soda fountain items are of outstanding value and which could be dropped without loss in sales or profit? Which is the value of certain staple items of business getters in relation to other products? How can turnover be increased on commodities carrying a considerable investment? How can the merchant determine how low a markdown he can afford? How can the cost of purchase transactions to both retailer and wholesaler be lowered? In what ways can general overhead expenses be cut down? What departmental line-up yields best results in total sales and operating costs? What are some of the avoidable causes of failure among retail druggists?"

It will be noted that the survey is designed to provide correlated information about the merchandising operations of retail drug stores; to show costs and profits for all commodities handled in a representative group of stores, to investigate the conditions of profitable and unprofitable operations in each instance; to develop and test merchandising and control methods in the stores studied and ultimately to furnish the basis for improved distribution of drug store commodities throughout the country.

The Department of Commerce will publish the principal reports and use its entire organization of commodity divisions and field offices coöperating with the industry in bringing the results of the survey to the attention of the drug trade throughout the United States. It will also disseminate information through the medium of the press, circulars and radio addresses.

The estimated cost of the survey is about \$100,000; half of this amount will be contributed by the industries represented and the other half by the Department of Commerce through its service.

American business has been aided liberally by the Government in scientific research and it is just as necessary that it now coöperate with industry in assisting research leading to the solution of our complex distribution of problems. The survey may be considered as a definite contribution to that end.

Plans are progressing for making a survey which will be helpful in revising the U. S. Pharmacopœia and National Formulary, so that these standards will be of the greatest service and its aims and purposes more generally understood. As a result of these studies standards of greater service will result.

Commenting further on the preceding: The progress of the drug-trade activities depends on adequate education so as to make pharmacy a growing service for the health of the people, the regulation of its trade practices, reasonable observation of its codes of business and professional ethics and on bringing all of its divisions into active coöperation.

THE CHEMISTRY OF CINCHONA, HISTORICALLY CONSIDERED.*

CINCHONA became an item of European materia medica fully a hundred years after the iatrochemical school of medicine had been founded by Paracelsus. If the physician was slow in adopting the new ideal of the medical renaissance, the apothecary was equally slow in putting the chemical changes proposed by the reformer of chemistry and medicine into practice. For a long time, therefore, cinchona bark was administered in powdered form—mortar and pestle are even to-day regarded as the symbols of the apothecary: the "Powder of the Countess" after the Countess of Chinchon, for whom the bark was named; "Jesuit's Powder," because the members of this order are said to have distributed it widely; and, finally, "Cardinal's Powder," because the Jesuits are reported to have sent a lot of this "new remedy" to an Italian cardinal.

Somewhat later, the tincture and the extract were employed. The modern pharmacist generally looks upon these two classes of preparations as galenicals, yet they were not used by the galenists of the old school, but were introduced by the iatrochemists. Extraction, like distillation, was regarded as a distinctly chemical operation. As late as the beginning of the nineteenth century, the amount of "resinous" extractive was looked upon as a means of determining the therapeutic value of the drug. It was, indeed, the precursor to our modern assay for total alkaloids.

The situation was changed almost over night when, in 1820, Pelletier and Caventou, two Parisian pharmacists, isolated quinine and cinchonine from the "quina" or cinchona bark. This was three years after Sertuerner, a German apothecary, had demonstrated the basic, salt-forming properties of morphine, a discovery that was supposed to place organic chemistry on a rational basis and incidentally paved the way for the discovery of quinine and a host of other alkaloids of greatest importance to medicine and hence to pharmacy. What seems even more remarkable is the fact that this "new remedy" rapidly found its way, not only into European materia medica, as is evidenced by the various editions and translations of Magendie, "Formulaire de Nouvelles Medicaments," but that its use spread with remarkable rapidity to the remotest territories of this union as they were first opened up to settlement by the whites. An interesting story is told of one of the first physicians of Milwaukee who dispensed quinine for calomel as a remedy against fever and ague and who was much concerned when he discovered his mistake. To his great relief the patient reappeared the next day hale and hearty. Before the close of the first quarter of a century after its discovery, a Milwaukee druggist advertised the receipt of a shipment of two hundred ounces of French quinine sulphate.

* Abstract of an address by Edward Kremers, at the 300th anniversary celebration of the first authentic record of the use of Cinchona. The celebration was held at Missouri Botanical Garden, October 31st and November 1st.

But the discovery of quinine, important therapeutically as that was, marked but the beginning of the chemical researches conducted in connection with this drug, a most valuable contribution by South American Indians to our European and American materia medica. Thanks to the manufacture of quinine on a large scale, also thanks to the purity standards demanded by the several pharmacopœias of civilized countries, the by-products which accumulated became the objects of further research. To-day more than twenty alkaloids are known to exist in cinchona barks and the barks of related genera of trees. Some of these have been used as specifics in modern medical practice.

Important as is the therapeutic application of these alkaloids, they constitute no large percentage of the drug, about four to seven per cent.¹ They are assumed to be combined in the drug with a tannic acid known as cinchotannic acid. This substance, in turn, is supposed to give rise to a so-called phlobaphene, the cinchona red, a representative of a class of plant constituents about which we know even less than about the tannins. The tannic acid of the tree is also supposed to be combined with a sugar in the form of a glucoside, hence we may have such a complex molecule as an alkaloid-tanno-glucoside. Related to the sugar, and of special interest to the biochemist is the quinic acid. The common plant constituents, such as starch and cellulose, need only be mentioned, but can otherwise be ignored in this connection, for they have no specific significance so far as cinchona is concerned.

Finally, a chemical substance should be mentioned, which, though not contained in cinchona as such, has been obtained from quinine by destructive chemical action, quinoline, a base related to pyridine on the one hand and benzene on the other. Its significance lies not only in the fact that it has assisted the organic chemist in determining the structure of quinine and related alkaloid molecules, but in that it has given rise to a chemical definition for alkaloids; an unfortunate one, it is true, but one that has played an important rôle in the history of the chemistry of the alkaloids as a class.

COMMISSIONS FOR PHARMACISTS.

THE FOLLOWING commissions as Assistant Pharmacists, in the U. S. Public Health Service, were confirmed by the Senate on December 10th: Edgar B. Scott, Edwin M. Holt, William L. Stearns, Frank L. Gibson, Newton C. Comfort, Carl Stier, Clarence H. Bierman, Walter H. Keen, Raymond D. Kinsey, Thomas C. Armstrong. These are the first commissioned pharmacists under the Parker Bill, now a law, by which pharmacists are placed on the same basis as to appointment, pay, promotion, disability privileges, etc., as for medical officers; the rank of the above-named corresponds to that of *First Lieutenant*.

¹ This statement was taken from Tschirch, "Handbuch der Pharmacognosie." According to the Dutch cinchona expert who reported on the cultivation of cinchona trees in Java, the percentage has been greatly increased.

The 79th Annual Meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION will be held in Miami, Fla., during the week of July 28th, 1931.