

SCIENTIFIC SECTION

THE INFLUENCE ON MEDICAL AND PHARMACEUTICAL PRACTICE OF RECENT DELETIONS FROM THE PHARMACOPŒIA.*¹

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At the last revision of the United States Pharmacopœia, the principle previously adopted was reaffirmed, that therapeutic usefulness or pharmaceutical necessity should determine additions to and deletions from the list of articles to be included in that work, but neither of these conditions was allowed to do so.

The term "pharmaceutical necessity" appears not to have been construed in its plain common-sense meaning of the necessities of the pharmacist. If anything is necessary for the pharmacist, in connection with the Pharmacopœia, it is that that book should contain standards for such non-proprietary and non-secret articles as he is called upon to supply professionally, to any considerable extent. To refuse to include such articles in the Pharmacopœia is to repudiate the instructions that the Committee of Revision had pledged itself to obey.

It is far more important that an article be included because it is itself in demand than because it is required in connection with some other article that is admitted because it is in demand. Consideration of possible action by the National Formulary Committee is entirely out of place in the work of the Pharmacopœia Committee. The two works are organically distinct and independent. Published by two separate institutions, prepared by separate revisers and at different times, there can be no conflict of authority between them. To say that articles that are logically called for in the Pharmacopœia should be omitted for the sole reason that they may be included in the Formulary, removes all logical ground for maintaining the Pharmacopœia, as they may all go into the Formulary, on the same ground. The National Formulary, when established, was not intended to relieve the Pharmacopœia of the treatment of crude drugs. Its purpose is indicated in its name. The inclusion in the Pharmacopœia of formulæ prescriptions was objectionable, especially certain of them, and the Formulary was established to take care of these and a large number of additional ones that were desired but which were not in the Pharmacopœia. The adoption of certain minor drugs was an afterthought and the adoption of those that were in the Pharmacopœia was not contemplated at all. The Pharmacopœia has a definite and perfectly understood office to perform and this office has been formally stated by its own convention and Committee of Revision as being to provide for the necessary requirements of pharmacy. Under that declaration, I held that it should include all articles for which there is a large and legitimate demand that the pharmacist must supply.

Evidence is not to be found in the proceedings of the Committee that any serious attempt was made to ascertain what articles are largely called for in the legitimate trade of our pharmacists. The only reliable source of such information is the reports of the pharmacists themselves. If any attempt was made to secure

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¹ Discussion on this paper will be published in a succeeding number of the JOURNAL.

this information, it resulted in failure, as we now have positive knowledge. As a matter of fact, the procedure appears to have resulted in depriving the pharmacists of an effective voice in deciding what articles should be included, except in a very restricted sense. In the discussions on scope and admissions, it was freely admitted by most of the medical men that they did not know what drugs were used by others than themselves, and that they were not in a position to vote on this phases of the question. In the nature of the case, this must be true, but it is equally true that pharmacists, as a class, do possess this knowledge. Instead of seeking this information from those who possess it, the decision was left to one or two men who neither knew or cared for these requirements of pharmacy.

It is not necessary to characterize this proceeding; only to state it. There can be no difference of opinion among fair-minded people as to the treatment that was accorded this kind of pharmaceutical necessity. We understand that the pharmacists of the Committee did not die without a struggle. They did endeavor to secure a fair recognition of the principle that had been adopted. The mountain did labor, and it brought forth *Rhus Glabra*.

There was but one just and conclusive method of ascertaining the needs of the pharmacist in this direction, namely, by allowing the pharmacists to declare, by a majority vote sufficiently large to be decisive, what their interests in the list of inclusions required. Whatever attempt was made in this direction, resulted in failure, as conclusive evidence now at hand has demonstrated. We have a repetition of what occurred at the preceding revision, in regard to *Spiritus Frumenti*. The executive officers of the American Medical Association reported the results of a straw vote as showing that American physicians desired the deletion of this most valuable medicine from the Pharmacopœia. Their declaration that this vote was representative and conclusive was positive and emphatic, yet it proved to be wholly misleading. The demand for the reinstatement of this article was overwhelming and irresistible. The determination of the present list of inclusions and deletions is equally fallacious. Happily, this is no longer a matter of opinion. For decades, we have been floundering in a maze of guess-work as to what drugs are in general use, but the recent survey under the auspices of the Commonwealth Fund has given us definite proved facts on which to rely. Their method was not that of securing a small number of personal opinions nor that of a straw vote by a limited and selected electorate. Carefully instructed agents were sent directly into 911 pharmacies to ascertain the facts by inquiry and observation. The pharmacies visited were sufficiently numerous to give a reliable result and they were selected with great care to represent not only all geographical areas, but every class of pharmacy and population in each of these areas. This survey has disclosed the fact that 165 vegetable drugs not recognized in the Pharmacopœia are regularly sold in drug stores of the United States, in the crude and entire condition, and this does not nearly equal the number that are represented by galenic preparations. With the dropping of a drug, all its preparations disappear also. Of these, 65 are sold in more than ten per cent of our pharmacies, 40 are sold in more than twenty-five per cent, and 16 in more than half of the pharmacies of the United States. It is not suggested that all or most of those articles should be taken up in the U. S. P., but it is claimed, without fear of successful contradiction, that the declared principle under which the U. S. P. revisers worked demands

that a large number of them should be included, in order to meet the necessities of the pharmacists.

The 11th Revision should witness the end of this freezing-out process of pharmacy from the drug-list of the Pharmacopœia. Pharmacy schools and associations should secure a representation in the next coming revision pledged to insure a rational procedure in place of the transcendentalism of a small group of visionaries, one that will secure for them a just and adequate share in the benefits of the Pharmacopœia. The issue is clearly drawn. One medical member who has been very influential in recent procedures has definitely stated that he would delete all but ten articles from the Pharmacopœia, if he had his way, and he and some of his associates are determined to approach as closely as possible to that result.

When we consider the question of therapeutic usefulness, we find equal grounds for criticism of the procedure in admitting and deleting, for judgment regarding therapeutic action has not been based on therapeutic experience, but on theoretical deduction. The rejection of clinical evidence has been open and pronounced, yet in a very large part of the field of medicine, it is our only guide. In fact, the greater portion of medical practice has not yet been reduced to a specific basis. In the excision of diseased tissue or its destruction by applications, in the destruction of disease-germs by an antiseptic, or the destruction of a poison by chemical antidote, we attack directly the cause of the disease and our methods are subject to laboratory experiment and control. Here the reactions of the human system need not be specially considered in determining efficiency. There are many other diseases in recovery from which the reactionary powers of the human system must be depended upon, wholly or chiefly. If it is possible for a medicine to increase this reacting or curative power of the system, that medicine possesses therapeutic usefulness and should not be condemned. If such usefulness is strong enough or general enough to lead to its extensive employment in medicine, the article should be included in the Pharmacopœia. Questions of this kind cannot be determined experimentally, except in actual therapeutical practice. Denial of the value of clinical testimony is not only invalid; it is indefensible. So far from being without value, it is the only kind of evidence that is obtainable in a large class of cases. It is true that such evidence requires careful scrutiny and sifting, but to reject it altogether, and that in cases where no other evidence is obtainable, is most mischievous. It rules out of court a vast army of practical and competent physicians. Tens of thousands of physicians in the United States are engaged in relieving pain, saving life and restoring the sick to health and usefulness. When they accomplish these results, both they and their patients know it. It is neither necessary nor proper that they repair to laboratory experimenters who have a pet theory to foster, to ascertain the effects of their treatment upon their patients. These men employ medicines because they have found them to be therapeutically useful. Therefore, there is a certain amount of evidence of therapeutic usefulness in the fact of a very general therapeutic use. A still more pertinent fact is that usefulness thus proved will continue to maintain use.

No fact is more important for Pharmacopœia makers to digest than that the office of the Pharmacopœia is in no sense that of a leader. It is a follower. Not a blind and automatic follower, but nevertheless obliged to follow and serve intelligent professional custom, in both medicine and pharmacy. It has not been

observant of its position in this respect. With each succeeding revision, it has departed further from its position as a source of information regarding standards for articles in general medicinal use. A long list can be given of drugs which are notably useful therapeutically and which have been completely ignored by the Pharmacopœia.

On every part of the American continent, some species of *Eupatorium* related to *E. perfoliatum* is employed by the aborigines in the same way, and in all cases independently. It is absurd to think that they can be without medicinal value. The use of dandelion root is based on the experience of hosts of patients and physicians, who have found it serviceable in improving conditions. Pyrethrum has a marked effect in promoting digestion, beginning in the mouth and extending through the duodenum; yet its effects cannot be demonstrated by pharmacodynamic experiments. If any man suffering from cystic or urethral irritation will chew a few grains of kava and swallow the extracted matter, he will promptly find the irritation relieved by direct local anaesthesia, and may find its cause removed by profuse diuresis; yet no dog, cat, guinea-pig or frog will be able to express such relief. When I was a medical student, my preceptor came out of a house one day and said, "Don't forget, when you get into practice, that *Viburnum prunifolium* is one of your best friends. It has just saved a woman's life in that house, and I have saved two other lives with it in this neighborhood." But the Pharmacopœia leaves this useful article to the proprietary medicine man. The same is true of boldo, which is enormously used, and on a growing scale, in proprietary medicine, but considered beneath the notice of our therapeutical subcommittee.

A number of the umbelliferous fruits, fennel, cumin, dill, etc., are enormously used, in prescriptions, by the direction of nurses and through the experienced knowledge of mothers, in the treatment of infantile colic. Millions of little sufferers have obtained relief and rest from this treatment. These drugs are sold, crude, and in numerous forms, in almost every pharmacy. Yet some of our laboratory men exclude them from the Pharmacopœia because a frog is not able to state the effect of this treatment on a human baby. I am ready to agree with these gentlemen that a more scientific and practical method of their use is—or may be—in the form of the oil, but in the meantime, the fact remains that the fruits themselves are used, and the Pharmacopœia should recognize that fact.

Perhaps the latest deletion is the most instructive, as it represents one of the most flagrant of offenses. Gelsemium, deleted from the present edition, is the most direct and reliable antidote for actual strychnine poisoning known to me. Doubtless the laboratory expert can find ways in which its action is not antagonistic to strychnine, but I have saved life by its use with certainty and precision. I can anticipate a smiling inquiry from our eastern practitioners as to the frequency of the demand for its use for this purpose, but our western members, who see strychnine ordered in carload lots for the destruction of troublesome vermin, will receive the suggestion of its usefulness more intelligently.

The continued and permanent use of medicinal agents will depend ultimately on their usefulness, and not upon ignorance of the facts by individuals.

It is an unfortunate but hard fact that a great number of deletions from the Pharmacopœia do not rest on any evidence of their uselessness, nor on any want

of evidence of their usefulness, but on the complete ignorance of both by those who control their admission, however learned these men are in certain other directions.

I cannot close this communication in such a way as to leave it in the power of anyone to misrepresent or misunderstand my attitude toward pharmacodynamic investigators. I feel a great admiration and a great gratitude toward these devoted workers. Furthermore, I regard their work as constituting our chief hope for future benefits. At the same time, I condemn them for presuming upon their knowledge so far as to rule out the knowledge of others in matters regarding which they confess themselves ignorant. They have no right to demand that everything must stand still until they can find time and opportunity to attend to it in a better way. If this is done by the medical profession, patients are surely going to seek the poor man's physician, the proprietary medicine dispenser.

A NOTE ON THE STABILITY OF SOLUTION OF ARSENOUS AND MERCURIC IODIDE.*

BY WILMER H. SCHULZE.

Solution of Arsenous and Mercuric Iodide, or Donovan's Solution has evidently been looked upon as a fairly stable preparation which after standing a considerable length of time undergoes some change manifested by a change in color. Once this change has taken place the pharmacist is advised it should not be dispensed.

Textbooks and dispensaries refer to the change in color from colorless or pale yellow to reddish or red but fail to make any statement as to conditions which affect the rapidity of this change. In no case is mention made of the change in any of the constituents of this solution. One textbook states that when this color change takes place iodine has been liberated. Another authority states that when the solution becomes red it is supposed to contain free iodine.

Langenhan¹ states the cause of the change in color is not clearly understood, one writer claiming the colored solution did not give a positive test for free iodine with starch.

Rosen² reports that oxidation of arsenous arsenic takes place. At the end of one year and eleven months he found a loss of over half the arsenous iodide content although the total arsenic remained the same.

In a recent number of the JOURNAL,³ the writer showed that a rapid change takes place in the arsenous iodide content dependent on the method of preservation used. The change which takes place is an oxidation of arsenous to arsenic arsenic. This oxidation proceeds rapidly if the solution is exposed to ordinary daylight.

During the month of January 1925 the writer had occasion to analyze a sample of Donovan's Solution. The sample was in a well-filled amber container yet it showed only a little over 50% of the required amount of arsenous iodide. About a month later another analysis was made of this sample and it was found to contain

* Section on Practical Pharmacy and Dispensing, A. PH. A., Philadelphia meeting, 1926.

¹ JOUR. A. PH. A., 508 (1925).

² Ibid., 6, 951 (1917).

³ Ibid., 6, 464 (1926).