THE NATIONAL FORMULARY V.*

BY P. HENRY UTECH.

The National Formulary, originally designed as a handbook for pharmacists and intended to furnish them with a uniform collection of formulas "in general use in medical practice," for obvious reasons did not meet with the immediate success which its promoters had anticipated. In short, about the time of its first appearance there appeared to be a determined effort on the part of pharmacists to dispense without it, rather than with it.

This attitude of apathy or indifference was apparently maintained throughout several editions of the book. When, however, in June 1906 the U. S. Government made it an official drug-standard, in company with the United States Pharmacopoeia, the prestige thus acquired was instantaneous and most gratifying as well. Unusual interest was immediately manifested in the book. The attitude of aloofness suddenly changed to one of action; pharmacists sought the book and familiarized themselves with its contents, and not a few saw in it new opportunities for personal profit and acquainted the physicians with its preparations, with the result that the mystic symbols "N. F.," Napoleon-like, were suddenly transmuted into "New Fields" to conquer.

It may interest you to know that the National Formulary had its origin in Pittsburgh; at a meeting of the American Pharmaceutical Association held in this city in 1885, a committee on Unofficial Formulas was appointed; they began operations immediately, and so assiduously did they perform their tasks that, the following year, at the Providence Meeting of the A. Ph. A., they were able to present a preliminary draft of the National Formulary.

The nucleus of the present work was a collection of formulas extensively used in and around New York City, and published during the previous year as the "New York and Brooklyn Formulary." To this was added a book on "Elixirs"—the work of Prof. J. U. Lloyd. The Committee's work resulted in a collection of 435 preparations, and appeared in 1888 as the first edition of the National Formulary.

The second edition appeared in January 1896, in which the original text was faithfully adhered to with no radical changes of any kind. As was to be expected, much criticism was hurled at this original edition, being aimed chiefly at its imperfect formulas and against the complexity of certain others. These complaints were all carefully studied and rectified in most cases.

The problem of including formulas intended to replace certain well-established proprietaries for which there was a popular demand, also came up, but the Committee very properly considered all such outside the scope of the book. The number of titles was 454, an increase of only fifteen over the first edition.

Ten years later, in January 1906, the third edition appeared, being delayed on account of the belated appearance of the U. S. P. VIII. The radical change in this edition was the introduction of alternative equivalents, Metric and Apothecaries' systems of weights and measures, which had a tendency to increase the utility as well as the popularity of the book. All obsolete U. S. P. and N. F. prep-

* Presented at Pittsburgh Branch A. PH. A., February 15, 1921.

arations were collected and placed in an Appendix; the number of titles had increased to 617.

Pharmacists will observe at a glance that the N. F. IV is a much larger volume than its predecessors. Although the third edition was not revised with the thought of its becoming a legalized reference book, nevertheless, the Committee did its work so well that when this added responsibility was suddenly thrust upon it, only very few slight changes in certain formulas were found necessary.

Among the most important changes in the fourth edition are the following:

The adoption of the metric and exclusion of the apothecaries' system, except for doses; these are given in the terms of both systems.

Fluidglycerates as a class were introduced as an experiment.

Standards and tests for unofficial drugs and chemicals were included.

Nomenclature to follow that of U. S. P. IX.

Abbreviation of titles for prescription-writing.

Use of the word "mil" instead of Cc. in all formulas.

A new chapter on Sterilization, in order that pharmacists might become familiar with the rationale of the various operations.

Assay processes are given for 22 chemicals, 7 drugs and 20 preparations.

Alcoholic and narcotic content of preparations have been greatly reduced.

The use of saccharin as a sweetening agent was eliminated. The editions were enlarged so as to include the formulas for 589 preparations and 200 other articles, making a total of 789 as against 617 of the previous edition.

The present Committee, known as the Fourth Revision Committee, is the one appointed to publish the N. F. V. The personnel of the Committee consists of six retail pharmacists, five teachers of pharmacy, three pharmaceutical laboratory experts and one physician-teacher. The membership is divided into twelve sub-committees and one editing committee—the Committee is divided into groups or classes, each sub-committee being held responsible for such preparations as come under its particular assignment. The entire Committee convened at Longport, N. J., for a three days' session last July.

The present N. F. contains approximately 800 titles that must be carefully studied, any change or improvement in process or product noted, and the sources of information investigated and abstracted; the results in each case are referred, first, to sub-committees, and later to the Committee for approval or rejection. The whole work of revision, stupendous as it is, goes forward with such clock-like precision that but few persons outside the Committee realize the scope or magnitude of the labor involved.

One of the chief problems confronting the Committee is that of deletions, *i. e.*, omitting such preparations as have outgrown their popularity or usefulness; and on the other hand, the question of admissions, *i. e.*, the admission of such as have sufficient merit to warrant their inclusion. The Committee has endeavored to give the widest possible publicity to this part of the work so that every section of the country may be represented by its particular type of preparations. A circular letter containing this appeal was sent out by the Chairman, but the results thus far have been none too encouraging.

"Full and free discussion on all questioned articles or any new preparations intended for admission is urged at this time. Suggestions and advice proffered at this juncture will have a tendency to avert much unfavorable criticism later on.

Opinions and arguments, either for or against inclusion, will all be given careful and thoughtful consideration. The Revision Committee welcomes and invites the fullest coöperation of pharmacists and all those who are interested in the welfare and advancement of the profession. If the National Formulary V, as a practical working formulary, fails to measure up to the high standard which the pharmacists of the country have the right to expect, they will, at least, share in the blame if they do not participate in the revision."[1]

ELIXIRS OF THE UNITED STATES PHARMACOPOEIA AND NATIONAL FORMULARY.*

BY BERNARD FANTUS AND CLYDE M. SNOW.

The official elixirs are intended to be the most elegant liquid preparations the pharmacist's art can devise. They should be of pleasing appearance, and of the most pleasant possible odor and taste, consistent with full therapeutic efficiency. They are, in fact, medicated liqueurs, the pleasantness of alcoholic liquors being made use of for the administration of medicaments. Still they should not be available as intoxicants. The alcohol contained in them should, therefore, be *just* sufficient for solvent and preservative purposes; there should be no more of it, and no less.

Both of the elixirs of the U. S. P. IX, the *aromatic elixir*, and the *elixir of glycyrrhiza*, contain approximately 25% alcohol. This is sometimes too much and sometimes not enough. Thus, if these elixirs are to serve as vehicles for sodium bromide, potassium acetate, or sodium salicylate, no such amount as 25% of alcohol is required or desirable. If, on the other hand, they are to be used as diluents for fluidextract of cannabis indica or fluidextract of buchu, they are decidedly deficient in alcohol; and in both cases turbid unsightly mixtures result.

ISO-ALCOHOLIC ELIXIRS.

The difficulty brought out could be overcome if the Pharmacopoeia would make the elixir *iso-alcoholic*,[2] that is, would direct the pharmacist to dispense an elixir of an alcoholic strength, just sufficient to dissolve the medicament for which the elixir is to serve as a vehicle. To accomplish this, the Pharmacopoeia would have to recognize two basic aromatic elixirs: first, an aqueous elixir containing only 5% alcohol; and, secondly, an alcoholic elixir containing approximately 95% alcohol. These two would have to be mixable with each other in all required proportions.

An *aqueous elixir* of the following composition has been found to possess entirely satisfactory flavor, taste, and keeping qualities. It would be used for

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[1] The article closed with General Principles governing the revision. The following references are made to articles in the JOUR. A. PH. A., Volume IX, 1920, June, p. 597; August, pp. 760 and 852; September, p. 934. See also report of Pittsburgh Branch A. Ph. A., March 1921, issue of JOUR. A. PH. A,—The Editor.

* From the Pharmacy Laboratory of the University of Illinois. Presented before the Chicago Branch of the American Pharmaceutical Association, Jan. 21, 1921.

[2] B. Fantus, "Iso-Alcoholic Elixirs," JOUR. A. PH. A., 9, 708, 1920.