

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

BRINGING PHARMACY TO HIGH-SCHOOL STUDENTS.

BY C. B. JORDAN.*

For two years I had the honor and the pleasure of serving as Chairman in Indiana for the Garvan Prize Essay Contest conducted by the American Chemical Society. During this time all of the essays from the high-school students of Indiana passed through my hands. Naturally I was interested in the essays on the subject "The Relation of Chemistry to Health and Disease" and I read many of them.

This year I relinquished the chairmanship of this committee but was retained as a member of the committee. The committee is divided into sub-committees and the sub-committee to which I was assigned examined all the Indiana essays on the subject "The Relation of Chemistry to Health and Disease." As a result, I read all of these essays.

This experience has given me food for thought and I wish to pass these thoughts on to the pharmaceutical profession. Before doing this, however, I wish to explain the plan of these Garvan Prize Essay Contests, as some of my readers may not be members of the American Chemical Society and therefore unfamiliar with this contest.

The American Chemical Society has long interested itself with the problem of bringing the science of chemistry to the attention of the every-day man and especially to the attention of the young high-school students who are the prospective students of chemistry. This effort has manifested itself in the numerous articles on chemistry appearing in the daily press. It is a very laudable effort and one that the pharmacists could well afford to imitate.

Three years ago Mr. and Mrs. Francis Garvan donated a sum of money to the American Chemical Society to be used in conducting an essay contest in all of the high schools of the nation, the participants being compelled to write upon one of a series of subjects, all subjects bearing upon the relation of chemistry to some phase of every-day life. The above-mentioned subject is one of this series.

To stir interest in the subject, the Society requested its numerous branches to circularize the high schools of their immediate neighborhood and, if possible, to give talks before high-school students on the subject of the High-School Essay Contest. To provide material for the basis of these essays, the Society distributed to the high schools sets of books bearing upon the subject to be discussed.

In reading the essays on the Relation of Chemistry to Health and Disease, I have been impressed with the fact that these high-school youngsters give *absolutely no* credit to the pharmacist for his assistance in the control of disease. The bacteriologists, the physicists, the chemists and the physicians receive *all* of the credit for our progress in combating disease. In reading fifty or more

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papers this year, I failed to find any credit given to the pharmacists, in fact the pharmacists were never mentioned.

That these youngsters should get a distorted view of the subject is to be expected in the wholesale conduct of such essay contests. That they should fail utterly even to mention the pharmacist, is very disappointing. The bacteriologist, the physicist and, of course, the chemist received credit, the latter in a measure far beyond what is deserving. In fact, the chemist is given credit for discovering and developing antitoxins, bacterins, vaccines and everything else, even to such things as meat inspection programs. If you were to believe this material of these essays, you would come to the conclusion that, were it not for chemistry, we would still be practicing medicine as it was practiced in the time of Paracelsus.

Chemistry deserves *great* credit for the assistance it has rendered to the cause of medicine and I will be the last one to minimize the value of this great science. However, I believe that we pharmacists have been "asleep at the switch" in failing to bring to the attention of high-school students the value of pharmacy and the opportunities that it offers to young people who are ready to enter college.

Since September 1923, every college of pharmacy belonging to the American Association of Colleges of Pharmacy has demanded high-school graduation or its equivalent for entrance. This means that the high-school graduating classes are the sole source of our prospective students. If we wish to secure a good grade of entering students, some effort should be put forth to attract these young people to pharmacy. I question the wisdom of an essay contest, but surely a profession as old as pharmacy has an appeal to put forth to the young people who are selecting their life-work.

I have been surprised at the number of students who enter pharmacy with no idea, or at best a hazy one, of the legal requirements governing our profession. This is a condition that can easily be corrected if some central agency, such as the AMERICAN PHARMACEUTICAL ASSOCIATION, should direct a concerted effort toward its correction.

The pharmacists are exceedingly busy in their stores, spending long hours at service and, when opportunity for relief from duty comes, they wish to forget pharmacy in all of its phases and enjoy complete relaxation. Because they spend long hours and busy ones in the conduct of their profession, they do not have the inclination to do missionary work in recruiting prospects for pharmacy. As a result, they are poor advertising agencies for their profession. The average high-school student judges pharmacy by what he sees going on in the front of a drug store, and to him pharmacy is a commercial enterprise just as selling dry goods, shoes, groceries, etc., are commercial enterprises. To him there is little or no distinction between the pharmacy and other retail establishments. Their minds never will be disabused unless we make an effort to show these young people that pharmacy is a calling that renders great service to the community, one that requires a high type of practitioner and demands of him sacrifices that are not demanded or expected of the average retail merchant, but one that, in return for these sacrifices, gives a great deal of satisfaction and contentment on account of humane service well rendered.

How many busy pharmacists are endeavoring to perform this very essential work for the benefit of our calling? I am fully aware of the fact that some are

doing more than their full share of this work. On the other hand, a vast majority of pharmacists are paying little or no attention to it. Is it not time to awaken them to their full responsibility in this matter? Is it not time that a concerted effort be made to put pharmacy before the public in its true perspective?

Every druggist in the United States has many opportunities to correct false impressions and to present true ones if he will only be awake and seeking these opportunities. Nearly every one comes to the "Corner Drug Store" and is known by the operator thereof. What a splendid opportunity is presented in this close contact with patrons. Very many pharmacists belong to luncheon clubs and other civic organizations, thus opening avenues of approach and especially avenues of approach to the intellectual people of their communities. Is there a teacher of science in any high school that will not welcome a short, well-chosen talk upon science in its application to pharmacy and medicine? Such talks are very applicable in classes in botany, chemistry and biology.

As I see it, the opportunities are here if we pharmacists wish to take them. What better service could our AMERICAN PHARMACEUTICAL ASSOCIATION perform than that of awakening the individual pharmacist to a realization of his duty and responsibility in this matter? A committee of this ASSOCIATION could work out methods of arousing the interest of the pharmacist and also methods to be used by them in presenting a true picture of pharmacy to their fellow citizens and especially to the high-school students of the nation.

If such an effort had been made successfully during the past few years, I am sure that the young high-school students writing essays on "The Relation of Chemistry to Health and Disease" would not ignore the great service that pharmacy, through chemistry, has rendered the physicians in this fight to overcome disease.

GREAT BRITAIN RATIFIES OPIUM CONVENTIONS.

Both Geneva opium conventions have been ratified by Great Britain according to an Associated Press dispatch to the New York Times from that city. The first of these conventions, concluded in 1924, provided that the signatory powers would take measures to suppress entirely within fifteen years the consumption of prepared opium in territories under their authority. The second, drawn up in 1925, provided for more effective restriction of the production and manufacture of narcotics and establishing closer control and supervision of international trade in narcotics.

GIFT OF \$500,000 FOR THE PHIPPS INSTITUTE.

A gift of \$500,000.00 to be devoted to the welfare of the Phipps Institute recently has

been made by Mr. and Mrs. Henry Phipps. This Institute was founded by Mr. Phipps for the treatment of tuberculosis and the study and prevention of the dreaded disease. Gifts made by the donors aggregate nearly \$3,000,000. Other donations by them have been made to Johns Hopkins and other Institutions.

NEW YORK BOTANICAL GARDENS.

Development of the New York Botanical Gardens along comprehensive lines involves, according to present plans, an outlay of practically \$7,000,000. Physical features of the proposed changes call for the establishment of new laboratories, and the plans propose a considerable extension of field work and research, including botanical expeditions to regions of Asia and Africa. Another field for the scientific staff is a study of the diseases of plants, which have a relationship to those of man.

NATIONAL FORMULARY V.

BY OTTO RAUBENHEIMER.

Twenty-two years ago, in 1904, the "Master of Pharmacognosy," Prof. Dr. Alex. A. Tschirch, since 1890, Director of the Pharmaceutical Institute of the University of Berne and an honorary member of our A. PH. A., made the "classic" remark, "The Pharmacopœia is a mirror of its age." The same words hold true as to Formularies; the contents of which show the preparations in use at that time and reflect the pharmaceutic as well as therapeutic knowledge. As an illustration of this let me point out "The New York and Brooklyn Formulary," published in 1883, when an actual "craze" for Elixirs existed and which, consequently, contained 52 formulas for Elixirs in a total of 81 preparations.

HISTORY OF THE NATIONAL FORMULARY.

Since its birth in 1851 the AMERICAN PHARMACEUTICAL ASSOCIATION recognized the need of an authoritative Formulary of uniform preparations not included in the U. S. P. As early as 1856 the President appointed a committee "to collect and report to the next meeting unofficial formulas in local use with many physicians of our Union." At the meeting held in Philadelphia in 1857 this Committee composed of ten members reported formulas for 81 preparations, which was adopted by the ASSOCIATION. At the Washington meeting in 1858 there were 14 additional formulas reported. In his Presidential address at the Philadelphia meeting, in 1868, John Milhau stated "I now make the suggestion to appoint a *Standing Committee on Unofficial Formulas* to prepare a report for publication soon after the appearance of the new Pharmacopœia." (PROCEEDINGS A. PH. A., Vol. 16, p. 32.) The following Committee was then appointed: F. H. Markoe, Boston, Chairman, J. F. Moore, Baltimore, and Albert E. Ebert, Chicago. In 1883 this Committee was enlarged to ten members.

Up to that time a number of local formularies were in use as *f. i.* in Philadelphia, Baltimore, Washington and New York, the latter being called Manual des N. Y. Pharmazeutischen Vereins, the forerunner of the German Apothecaries' Society. About this time elixirs became very popular and in 1883 Prof. John Uri Lloyd published his book "Elixirs" containing 283 formulas. In the same year the "New York and Brooklyn Formulary" was published by a joint committee of the New York College of Pharmacy, the N. Y. Deutscher Apotheker Verein and the Kings County Pharmaceutical Society. Although this little book of 81 formulas was particularly intended to meet the demands of pharmacists in New York City and vicinity, it soon became popular all over the United States. At the Providence meeting of the A. PH. A. in 1886 (Vol. 34, p. 159) the Committee on Unofficial Formulas made a report on a National Formulary and in the PROCEEDINGS for 1887 (Vol. 35) I find for the first time under "Special Committees" a Committee on National Formulary,¹ composed of Charles Rice, Chairman, Wm. P. DeForest, P. W. Bedford, S. J. Bendiner, and Adolph Tscheppe. Based upon the N. Y. and Brooklyn Formulary the first edition of the National Formulary was published as an Appendix to the PROCEEDINGS in 1888 and as a separate book.

The first revision, that is N. F. II, was published in 1896, shortly after the U. S. P. VII was issued in 1894. N. F. III was published in 1906 about one year

¹ Appointed in 1884.

after U. S. P. VIII and N. F. IV became official on September 1, 1916, the same date as U. S. P. IX; the date when the N. F. V will become official soon will be announced. The U. S. P. X became official January 1 of this year. The original intention was to have both books official on the same date, which is indeed very desirable, but owing to unavoidable delay this was found to be impossible. The first pages in the National Formulary give an excellent "Historical Introduction" which can be consulted with profit as it clearly presents the evolution of that work. I must not forget to mention that the Pure Food and Drugs Act of June 30, 1906, made the N. F. a legal standard and placed it on a par with the U. S. P. as a law book. This unexpected and unlooked for status greatly increased the standing of the National Formulary and also made it necessary that its revision be conducted with greater care and by experts in their respective fields.

THE N. F. V REVISION COMMITTEE.¹

The National Formulary is the property of the AMERICAN PHARMACEUTICAL ASSOCIATION. At the meeting of its council on August 30, 1919, at the New York City Convention the following 15 members were elected to act as a Revision Committee for a ten-year period: Henry V. Arny, Ph.D., New York City; George M. Beringer, Ph.M., Camden, N. J.; E. Fullerton Cook, Ph.M., Philadelphia; H. A. B. Dunning, Ph.D., Baltimore; H. Engelhardt, Ph.D., Baltimore; Bernard Fantus, M.D., Chicago; Oliver A. Farwell, Detroit; Samuel L. Hilton, Ph.M., Washington, D. C.; Charles H. LaWall, D.Sc., Philadelphia; Edwin L. Newcomb, Ph.M., Minneapolis; Otto Raubenheimer, Ph.M., Brooklyn; W. L. Scoville, Ph.M., Detroit; Leonard A. Seltzer, Ph.C., Detroit; Clyde M. Snow, Ph.G., Chicago; and P. Henry Utech, Ph.G., Meadville, Pa. This newly elected Committee to revise N. F. IV or to compile N. F. V organized itself and chose W. L. Scoville as Chairman, George M. Beringer as Vice-Chairman and L. A. Seltzer as Secretary.

The selection of this Committee has the following advantages:

1. Experts in their respective fields.
2. Geographical distribution of the different members throughout the United States, from Maryland to Minnesota.
3. Representation of different branches of pharmacy, such as retail pharmacy, manufacturing pharmacy, chemistry, botany and pharmacognosy, faculties of colleges and last, but not least, one physician and professor.

ANALYSIS OF THE N. F. COMMITTEE.

An analysis shows this Committee to be composed of the following representatives:

- 6 Retail Pharmacists
- 4 Professors of Pharmacy and Chemistry
- 2 Botanists and Pharmacognosists
- 2 Chemists connected with Manufacturing Pharmacy
- 1 Physician

¹ The members of the Revision Committee are shown in Volume X, p. 467, June number of JOUR. A. PH. A., for 1921.

Thus it readily can be seen that two-fifths of the members of the N. F. V Revision Committee, equal to 40 per cent, are retail pharmacists or drug store owners, a fact of which retail pharmacy can justly be proud.

N. F. CONFERENCES.

The work of revising the N. F. is chiefly done by correspondence, as explained in another paragraph. However, it is customary that at each A. PH. A. Convention the N. F. members present get together for a meeting of their Committee. In this way, by personal contact, much excellent constructive work has been accomplished. In realization of this two special conferences have been held of the entire N. F. Committee during the present Revision.

1. The Longport, N. J., Conference, July 1-3, 1920. At this first meeting the N. F. Committee was organized and work was assigned to the different sub-committees who at once began their duties.

2. The Atlantic City Conference, June 28-30, 1921. At this meeting there was a general discussion as to admissions and selections and on new and changed formulas. The different Sub-Committees held separate sessions and action was taken on a number of reports.

These conferences have proven beyond doubt that they are a great help, in fact a necessity, for a speedy and reliable revision of the N. F. Let us hope that this precedent will be kept up in future revisions.

At the Longport Conference, in 1920, the General Principles for the revision were adopted. These were modified slightly in the 1921 meeting and are herewith reported as amended. These principles are being followed in this revision.

GENERAL PRINCIPLES FOR N. F. V.

1. *Scope of the National Formulary.*—The purpose of the National Formulary is to supply definite formulas for preparations sufficiently used in medical practice throughout the U. S.; to provide standards and tests for the identity, quality and purity of essential ingredients used in these formulas that are not standardized by the U. S. P. so that uniformity in physical properties and action of constituents will be assured.

2. *Admissions.*—Any formula in sufficient use by physicians may be admitted into the National Formulary, but no proprietary or trademarked name shall be applied thereto, nor shall it be the aim of the Formulary to supply imitations of proprietary or trade-marked articles.

3. *Arrangement of Subject Matter.*—The contents of the National Formulary shall be arranged in three parts: Part I to contain formulas, Part II standards for non-pharmacopœial ingredients, and Part III special tests, reagents and reference tables.

4. *Construction of Formulas.*—Formulas shall be listed in alphabetical sequence, and whenever practical general formulas for classes may be adopted, the metric system of weights and measures only to be used.

5. *Pharmacopœial Principles Accepted.*—The principles adopted by the U. S. Pharmacopœial Convention of May 1920, to be followed in revising the Pharmacopœia, relating to nomenclature, changes in titles, synonyms, abbreviations, purity rubric, international standards, physical constants, standard temperature, phar-

macognostic descriptions, powdered drugs, solubilities and doses, shall be followed in the revision of the National Formulary.

6. *Therapeutic Responsibility.*—The National Formulary does not assume any responsibility for the therapeutic value of any drug or preparation.

7. *Assay Processes.*—Assay processes for as many of the potent drugs and their preparations as may be found practicable, shall be introduced into the National Formulary.

8. *Alcohol in Formulary Preparations.*—The proportion of alcohol entering into each formula in the N. F. shall be carefully studied and fixed at the minimum necessary for maintaining the activity, solution of the active constituents, permanence or preservation of the preparation. It is recommended that, whenever practicable, a permissible range of the content of absolute alcohol by volume be stated in the Formulary, accompanying the text for each preparation containing alcohol.

9. *Enumeration of National Formulary Preparations Containing Official Substances.*—There shall be included a table of U. S. P. and N. F. substances showing the official preparations in which they are contained as active ingredients.

10. *Modified Dose Statement.*—There shall be appended to the dose of each compound preparation a statement of the amount of active ingredients or ingredients in the dose given; and a table of doses of the N. F. preparations shall be added.

11. *Publicity.*—The National Formulary Committee shall publish from time to time abstracts of important changes or proposed new monographs, and invite comment and suggestion before final adoption.

12. *Date of Adoption.*—The N. F. Committee shall establish a definite date when the fifth edition of the N. F. shall go into effect.

It readily can be seen that by the adoption of these "General Principles" the N. F. V has a solid foundation. It is built on rock and not on sand! (in spite of the fact that these "General Principles" were adopted on the sandy seashore).

THE DIFFERENT SUB-COMMITTEES.

The Revision Committee of N. F. V divided itself into the following Sub-Committees:

1. Additions, Deletions and Nomenclature
2. Botany and Pharmacognosy
3. Chemicals and Assays
4. Doses
5. Elixirs
6. Syrups and Spirits
7. Fluidextracts and Extracts
8. Tinctures and Fluidglycerates
9. Emulsions, Mixtures, Liquors and Infusions
10. Pills, Powders, Species, Salts, Troches and Pencils
11. Glycerogelatins, Liniments, Lotions, Mulls, Sprays, Oleates, Pastes, Petroxolins and Ointments

12. Miscellaneous Preparations
13. Editing Committee.

The members joined those Sub-Committees for which they were best fitted and thus *it happens that some do work* and good construction work, on as many as five Sub-Committees.

THE WORK OF REVISION.

The next step was that the members of each Sub-Committee elect their own chairman, whose duty it is to supervise the work which he subdivides among the members. The Chairman of each Sub-Committee also circulates Bulletins among the members containing proposals, reports, discussions, comments and, finally, the votes on the adopted formulas or monographs. I might also mention here a very important point, namely, that before final adoption the proposed new or changed formulas are thoroughly tried out on a small and large scale by different members of the N. F. Committee and frequently by other pharmacists and pharmaceutical manufacturers. Consequently the Revision of the N. F. is not only theoretical, but, most important of all, practical, so as to insure the very best results in the finished formulas. After the adoption of a report by the respective Sub-Committees it is then circulated by Chairman Scoville among the entire membership of the N. F. Committees. Criticisms and comments are asked for, which are given due consideration. Last of all a vote is called for and when adopted that part of the N. F. is completed. It readily can be seen that each member of the N. F. Committee votes on every monograph in the book—sometimes even twice—namely in the Sub-Committee and then again in the General Committee. One reasonably would assume that these monographs are as perfect as human hands and brains can make them!

Chairman Scoville, besides the usual Reports of the Sub-Committees and the Voting Sheets, also presents other important questions, proposals, changes, discussions, etc., and it is perhaps needless to mention that all criticisms and comments are given due consideration—in the form of Bulletins. During the present N. F. V Revision over 80 Bulletins containing 450 typewritten and mimeographed pages have been circulated by Chairman Scoville, who deserves full credit for “steering the ship into a safe harbor.” It also should be borne in mind that this is a work of love, which is done during spare time. Verily a credit to the entire N. F. Committee.

SCOPE AND PUBLICITY.

The scope of the National Formulary is outlined under paragraph one of the General Principles and has received more attention in the present revision than that of any of the previous editions. The proposed Admissions and Deletions were published in the different pharmaceutical journals, were discussed at the meetings of the various A. PH. A. Branches and other pharmaceutical societies and were then voted upon by the N. F. Committee. Consequently the new book, N. F. V, should be a true representation of the preparations, drugs and chemicals used throughout the United States but not official in the U. S. P. After all, this is the desideratum and primary object of the National Formulary! I must not forget to mention that even a study was made of the preparations listed by different man-

ufacturing pharmacists, so as to ascertain to what extent they are in demand through that channel of the drug trade.

Publicity is stated under paragraph eleven of the General Principles as follows: "The N. F. Committee shall publish from time to time abstracts of important changes or proposed new monographs, and invite comment and suggestion before final adoption." By this action the pharmaceutical profession throughout the United States was given an opportunity to make comments before the publication of the book. In this manner much helpful constructive criticism was received. In fact all branches of pharmacy including wholesalers, importers and manufacturers were anxious to cooperate, so as to make the book as perfect as possible. After all, it is to the interest of every one to help in this way, as the N. F. is a legal standard according to the Pure Food and Drugs Act of June 30, 1906.

PRINTING AND BINDING.

When the Revision of N. F. V was completed, Chairman Scoville arranged the monographs in alphabetical order and ordered the printing. The corrected galley proofs were followed by page proofs. The proofs of N. F. V were mailed not only to the members of the Committee but also to the officers of the A. PH. A., to most colleges and manufacturers and to a number of experts. There is no doubt but the policy adopted in the present N. F. Revision of inviting critical proof-reading has proven fully its practicability and value and will result in a book which will be practically free from errors. The size, style and type will be identical with that of U. S. P. X, as both works are legal standards. The official date of N. F. V will be announced soon.

The binding will be in buckram which material has been found by experience to stand the wear and tear best and should last at least during the next ten years, the life of the N. F. V. As a rule leather binding does not stand the test of time and for that reason buckram has been selected. Pharmacists who are in the habit of making notations in the book are advised to purchase an *interleaved* N. F. V, of which a limited number of copies will be supplied.

In the present paper the author has presented a somewhat condensed account of the evolution of the National Formulary and quite especially of the Revision of N. F. V. This book, a stately volume, is now before us, and the next paper in the April number of the JOURNAL will be devoted to a review of the work itself.

MEMORIAL TO DR. CRAWFORD W. LONG.

Our readers will remember the papers read by Dr. Joseph Jacobs before the ASSOCIATION on Dr. Crawford W. Long, physician-pharmacist of Georgia, the discoverer of ether-anesthesia. Dr. Jacobs was an apprentice in the pharmacy of Dr. Long and throughout his life has evidenced his loyalty to him. On March 30, which is the 84th anniversary of Dr. Long's achievement, a statue will be unveiled in the Capitol as a memorial of his discovery.

John E. Andrus, head of the Arlington Chem-

ical Co. in Yonkers, N. Y. has given \$50,000,000 for an institution which is to be a combination hospital, recreation center and orphan asylum with educational facilities for the poor children of Westchester County. The plan provides that the income will, in part, be added to the fund so that eventually the work is to extend to the whole state.

Rear Admiral Edward R. Stitt, Surgeon General of the Navy, is now on an inspection tour of Medical Department activities in the West Indies. It may not be generally known to members of the ASSOCIATION that the Admiral is a graduate pharmacist.