THE TWENTY-SECOND ANNUAL CONVENTION OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.*

Through the courtesy of Secretary H. C. Christensen we are enabled to present a synopsis of the Proceedings of the twenty-second annual meeting of the National Association of Boards of Pharmacy, held in Des Moines during the week of August 24. President Meredith's address was printed in the September JOURNAL A. PH. A., hence, the abstract supplied by Secretary Christensen is omitted here.

Twenty-nine boards of pharmacy with a total of sixty-one delegates and associate delegates were present, as follows:

Alabama, W. P. Thomason.
Arizona, Arthur G. Hulett.
Colorado, Chas. J. Clayton.
Delaware, James W. Wise.
District of Columbia, A. C. Taylor.
Florida, W. D. Jones; W. M. Hankins; J. H. Haughton.
Georgia, E. L. Murray.
Illinois, W. S. Denton; V. C. Michels.
Indiana, R. I. Beddoe; Bernard M. Keene; William Oren.
Iowa, W. W. Haire; J. W. Slocum; George Judisch; H. E. Eaton.
Kansas, A. H. King; John Schmitter; N. G. Edelblute; Roy P. Taylor; Joseph Demain.
Kentucky, James F. Wilson; G. Orville Patterson; J. W. Gayle; Edw. Bloomfield.
Louisiana, John E. Guess; Paul Eckels
Maryland, R. L. Swain; H. Lionel Meredith; George A. Bunting.
Minnesota, J. P. Jelinek; John W. Dargavel.
Missouri, H. W. Reuter; W. G. Hughes; W. C. Bender; W. W. Largent; E. H. Riske.
Montana, Alex F. Peterson.
New York, Wm. Mansfield; Wm. C. Anderson; Jacob Diner.
North Carolina, Jas. A. Henderson.
North Dakota, H. L. Haussamen; W. P. Porterfield.
Ohio, M. N. Ford.
Oklahoma, Tom R. Hadley; Ted M. Tether; Paul M. Moomaw.
Pennsylvania, Chas. C. Campbell; Lucius L. Walton.
South Dakota, B. H. Newmayr; L. E. Highley.
Tennessee, S. C. Davis.
Texas, Wilford Harrison.
Utah, John Culley.
Virginia, A. L. I. Winne.
Wisconsin, O. J. S. Boberg*; H. G. Ruenzel.

* Deceased October 23, 1925.

The following deaths were reported and tributes paid them by those who knew them intimately: George Reimann, Buffalo, N. Y.; B. F. Riter, Logan, Utah; E. C. Bent, Dell Rapids, S. Dak.; D. W. Haydon, Clayton, N. Mex.; A. F. Sala, Winchester, Ind.; Warren E. Scott, Oakdale, La.; M. C. Metzger, Cairo, Ill; Fred Fleishman, Tucson, Arizona.

The Second Session on Tuesday afternoon was opened by Prof. E. O. Leonard of the School of Pharmacy of the Idaho Technical Institute with an address, amplified by charts, analyzing the psychology of a balanced education as applied to Pharmacy. This will be printed, with the accompanying charts, in the Proceedings and will be found interesting and worthy of careful study.

Chairman L. L. Walton, of the Executive Committee, after analyzing the work of the Association for the past year and reporting that the Association's finances were in satisfactory condition, explained the efforts which had been made by the Association leading up to organized publicity. Letters were sent to all Board Secretaries requesting original articles suitable for publication, items of general interest and information as to Board happenings. To quote Mr. Walton:

"The Committee does not regard the response to this request definite enough to assure sufficient material for a publication of our own. It recommends, however, that the use of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, to the extent of three or four pages per month, be tried out and has set aside a sufficient sum in the annual budget to take care of this expense.

"If this is approved, we trust the members will be eager to send in their articles or news so that the Secretary's office will not be hampered by the lack of material."

This plan was approved by the Association and preparations are being made to utilize space in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, probably commencing with the issue of January, 1926.

Mr. Walton also made an interesting analysis of the requirements in the various states for registration, showing the wide variation still existing and the very apparent need for progress in those states which are still below the standard, especially in the matter of college prerequisite.

Treasurer Gayle reported on the financial receipts and disbursements of the Association

* The address of President Meredith is printed in September JOUR. A. PH. A. pp. 817–836. All of the subjects discussed by the President are timely—May we call attention to the subject of "Tolerance and Reciprocity on p. 820, to the divisions relating to State Boards and educational subjects; the address should be read and studied.

for the year; following this Secretary Christensen analyzed the work of the Secretary's office for the year. He reported a total number of 1273 reciprocal applications issued for the twelve-month period from July 1, 1924, to June 30, 1925, details of receipts and disbursements being covered in the Auditor's report offered in connection therewith.

Following his work of a year ago, Chairman Culley presented a report of legislative activities of the past twelve months, showing in detail legislation secured and that which failed of passage; he analyzed some of the causes underlying the failure of passage of many of these pharmacy laws. This report will be printed in the Proceedings and should receive careful study, more especially by those states needing or contemplating new pharmacy legislation in the near future.

Short verbal reports of District Vice-Presidents were called for by the President and responses made by the following: A. C. Taylor, O. J. S. Boberg, W. W. Haire, Tom Hadley, W. M. Hankins, Chas. J. Clayton, A. G. Hulett.

The Third Session was devoted to a Joint Meeting of Boards and Colleges, at which, following the report of the Fairchild Scholarship Committee by Chairman Eberle, there was discussion on the "Readjustments incident to changing from the two-year course to the three-year course," and "How much practical experience shall be required in addition to three years in college?" participated in by Messrs. Wulling, Serles, Faser, Rudd, Dye, Mansfield and Anderson, Haussamen, Boberg, Walton, Denton and Wilson.

Perhaps the outstanding feature of this Session was the report by Dr. Charters of the progress made by the Commonwealth Fund Committee in the study of Pharmaceutical Education from the functional viewpoint. There is no question but that by hearing Dr. Charters, both Faculty and Board members learned much about their profession, and it is unquestionably true that this survey, when completed, will form the foundation on which to establish the Profession of Pharmacy as we all wish to see it. Dr. Charters' identification of Pharmacy as a profession is worthy of note.

> "After a careful study of the pharmacy curriculum with an open mind for a period extending over more than two years, the director of the study is definitely convinced that pharmacy is a profession rather than a trade. The materials that the pharmacist deals with are in many cases so dangerous in their effects upon physical well-being and the problems that face him in the handling of these materials and in his contacts with the public require so much intelligence, if they are properly performed, that it is absolutely essential for him to have a rather wide and intimate acquaintance with the fundamental sciences upon which the art depends; and since the distinction between the trade and the profession lies essentially in the fact that the trade needs to know only the methods in order to be proficient while the profession needs to know the principles upon which the methods depend, it follows that pharmacy is a profession rather than a trade."

This quotation shows the remarkable grasp of this subject in the report of Dr. Charters' Committee, and the complete report as printed in the Proceedings should be given serious consideration by both Faculty and Board members.

The Fourth Session on Tuesday afternoon was given over to reports of various committees by their Chairmen, as follows:

Committee on President's Address, W. D. Jones.
Advisory Publicity Committee, A. L. I. Winne.
Committee on Educational Standards, W. D. Jones.
Committee on Constitution and By-Laws, W. M. Hankins.
Committee on College of Pharmacy Standards, H. Lionel Meredith.
Committee on National Certificate, H. C. Christensen.
Committee on Assistant Pharmacist, R. L. Swain.
Committee on Ownership of Drug Store Law, Edw. H. Bloomfield.
The Pharmaceutical Syllabus Committee, Theodore J. Bradley, presented by W. D. Jones in conjunction with his report on *Educational Standards*.
National Research Conference, L. L. Walton.

Following these committee reports, Chairman A. L. I. Winne, of the Committee on Nominations presented the following nominees for officers for the ensuing year:

President, M. N. Ford, Columbus, Ohio.
Treasurer, J. W. Gayle, Frankfort, Ky.
Secretary, H. C. Christensen, Chicago, Ill.
Member of Executive Committee, H. L. Meredith, Hagerstown, Md.
Member of Syllabus Committee, R. L. Swain, Baltimore, Md.

The following District Vice-Presidents were named: No. 1, H. M. Lerou, Norwich, Conn.; No. 2, A. C. Taylor, Washington, D. C.; No. 3, R. I. Beddoe, Bedford, Ind.; No. 4, J. P. Jelinek, St. Paul, Minn.; No. 5, E. V. Zoeller, Tarboro, N. C.; No. 6, Wilford Harrison, Wichita Falls, Tex.; No. 7, John E. Guess, Hammond, La.; No. 8, Chas. J. Clayton, Denver, Colo.; No. 9, A. G. Hulett, Phoenix, Arizona.

These officers were duly elected.

Reports of all officers and committees, with discussion, resolutions and motions will be printed in full in the Annual Proceedings.

NOTES ON U. S. P. X.

Reports on U. S. P. X. were presented at the Joint Session, in Des Moines, of the Scientific Section and the Section on Practical Pharmacy and Dispensing, A. PH. A. All reports were not ready at the time, but all of them are printed in this issue of the JOURNAL. It is reasonable to assume that these reports will be read with interest; they explain why changes were made and what these changes are. The notes give valuable information to pharmacists, some of which they could not have had otherwise; at least, not without considerable reading and study—the reports introduce the new standard, which becomes official January 1, to the readers.

We are indebted to General Chairman E. Fullerton Cook, of the U. S. P. Revision Committee, for the opportunity to present these reports to pharmacists; it will be noted that *every* chairman has submitted a report. This is a reciprocity of far-reaching benefit—publicity is given to the Pharmacopœia and pharmacists benefit by the information. The revision committee of no other country offers the opportunities given by the U. S. P. Revision Committee for pharmacists to participate in the work of revision, and inform themselves relative to changes, deletions, etc., in advance of the publication of the Pharmacopœia. The latter reports were printed in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, from time to time, as the work of revision progressed. It is coöperative work which the ASSOCIATION is pleased to engage in, and one of the evidences that the A. PH. A. endeavors to serve all divisions of the drug trade, and these opportunities will be greater with the completion of the Headquarters. American pharmacists have rightful pride in their Pharmacopœia and are under obligations to the members of the Revision Committee for the time, study and labor they have given during the past five years in the preparation of U. S. P. X. What is stated here applies also to the Revision Committee of the National Formulary, but comment on that standard will be reserved for another number of the JOURNAL.

THE BRUSSELS CONFERENCE.

A report of the Brussels Conference soon will be printed in the JOURNAL. Dr. A. G. DuMez, who was present as the official delegate of the U. S. Government, has returned from Europe. He is well pleased with results and states that considerable progress has been made in securing uniformity in international pharmaceutical nomenclature; practically, that of the British and U. S. Pharmacopœias with respect to chemicals and preparations was adopted. The International Secretariat, which was established, will in the future decide upon the coined names to be used where the chemical names are too cumbersome.

The following should have been included in the list on p. 878 of the October JOURNAL:—**Aconitum,** and Fluidextractum Scillæ; also "a" was omitted from "Oleoresina" and, inadvertently, the genitive was not given in two of the preparations of Hyoscyamus.

NOTES ON THE NEW PHARMACOPŒIA.

BY THE CHAIRMAN OF THE GENERAL COMMITTEE AND THE CHAIRMEN OF THE SUB-COMMITTEES.

Already many thousands of copies of the U. S. P. X have been distributed throughout the United States, having been released in seven distributing points—Philadelphia, New York, Chicago, Los Angeles, Dallas, New Orleans, and St. Louis, on August 15, 1925. Over 12,000 copies were mailed from the Philadelphia agency alone on August 14. The standards will be in force from January 1, 1926.

The Bureau of Chemistry of the Department of Agriculture, of Washington, D. C., has also announced their readiness to distribute biological assay standards[1] conforming to the requirements of the new book, so that the first volume of the United States Pharmacopœia in the new century is a reality.

It is not necessary to refer to the routine machinery by which the revision has been carried out but it may be desirable to once more trace the steps of revision to graphically illustrate the unique coöperation which has made it possible. *The authoritative body* responsible for the book is the U. S. Pharmacopœial Convention of 1920. *The Board of Trustees* elected by the Convention has taken care of the business affairs entailed by the revision, the publication of the book, and its translation into Spanish. *The Committee of Revision* met immediately after the Convention, organized by electing officers and adopting rules, and then subdivided into fifteen working Sub-committees, the Chairmen of these Sub-committees constituting *the Executive Committee.*

The Sub-committees added to their group a number of experts who were classified as auxiliary members. These auxiliary members received all Sub-committee communications and were privileged to discuss the questions before the Committee but were without vote. Close cooperation was also given the revision by a special committee on the Pharmacopœia within the Bureau of Chemistry. Other associations named in the preface of the Pharmacopœia, through their reports and questionnaires on specific problems, greatly assisted in reaching correct decisions.

The Sub-committee reports having been presented to the General Committee of Revision, abstracts of all changes and all new texts were published in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION and general comment invited. Final manuscript having been prepared, the galley proof was read by the members of the Revision Committee and, necessary corrections having been introduced, the page proof was issued in duplicate to approximately 250 experts who had accepted the invitation to read the proof. The printed copy therefore represents the result of this rather extensive plan.

As the various steps are enumerated, there may be those who believe the machinery too elaborate or unworkable but in practice it has moved smoothly with sustained interest and, in many instances, an enormous amount of untiring labor. The brunt of the revision has been carried by the Chairmen of the Sub-committees but any credit due can be shared by the many who have given their time and experience to perfect this national standard.

The new Pharmacopœia was recently presented at the annual meeting of the American Medical Association[2] and was accompanied by a display setting forth the work of revision and the practical applications of pharmacopœial drugs, preparations, and chemicals to therapeutics. The new Pharmacopœia was discussed before the section on Pharmacy and Chemistry in an interesting paper presented by Dr. Hatcher, and the exhibit was the center of much interest from the physicians in attendance.

The general make-up of the Pharmacopœia remains the same as in the last revision except that the division into Part I and Part II has been abandoned and each section of the book has been given a specific title. Instead of Part I, that section of the book is called "Monographs on Vegetable and Animal Drugs, Chemicals and Preparations." In place of Part II, which indicated the latter part of the Pharmacopœia, the title "General Tests, Processes and Apparatus," is used. The "General Notices" have been taken out of the introductory section and begin on page 1 of the book. The importance of these statements is thus emphasized, since many of them establish general standards for many monographs which follow.

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[1] See JOUR. A. Ph. A., August 1925, p. 662.

[2] See JOUR. A. Ph A., June 1925, p. 536.

The general tests have been arranged alphabetically for quick reference. Another innovation has been attempted in this Pharmacopœia, namely, a sub-division of the descriptions and tests of the various monographs into sections; it is to be understood, however, that this subdivision in no way lessens the requirements of any test. A product to be pharmacopœial must meet all requirements of the monograph.

Attention is called to the following specific titles which present points of special interest:

Compound Solution of Cresol.—Dekanormal Solutions of Potassium Hydroxide and Sodium Hydroxide are offered in this formula, in soft soap, and elsewhere to replace stick potash or soda, although the use of the latter is permitted as an alternative method. These dekanormal solutions are claimed to be quite stable, much more so than weak solutions, and it is supposed that they will be available commercially, just as the pharmacist now buys strong acids. Exact amounts of alkali can thus be procured more easily than when the hygroscopic, caustic alkali is used. An assay has been added to this solution which insures the presence of official cresol. This seemed to be necessary because of the introduction of higher boiling point cresols which are claimed to have a higher phenol coefficient. The introduction of such a cresol would have led to a lack of dependability since there would be a variability in the phenol coefficient claims for different official solutions. There was also some doubt of the reliability of these phenol coefficient factors since they failed to indicate greater germicidal value when tested with other organisms than that specified in the test. It might therefore have given a false confidence in the product.

Dakin's Solution.—The new official solution has been very carefully tried in hospital practice and seems to be satisfactory. Where the facilities are available for making solution from chlorine gas, no doubt that process will be much more largely employed, but for the retail pharmacist or for many hospitals the official method should be satisfactory.

Chalk Mixture.—A formula without acacia or sugar has been made official, physicians having objected to the presence of these readily fermentable ingredients, which were in the formerly official formula. **Compound Chalk Powder** has been retained as the Sub-committee on Scope recognizes that this is sometimes prescribed with other powders.

Chaulmoogra Oil and Ethyl Chaulmoograte.—Many pharmacists in the United States may wonder why these products were introduced. They are used in the treatment of leprosy and our Pharmacopœia is the official standard for the Philippines and Hawaiian Islands, where a study of leprosy and its cure have received world-wide acclaim. The product in the form of esters is now only available in this country under the trade-marked name "Chaulmestrol."

Cod Liver Oil.—The Vitamin A assay is only optional but it was introduced with the hope that it might concentrate the attention of investigators upon one method and also establish a common standard for expressing activity. A cod liver oil stated to be assayed by the U. S. P. method must contain at least 50 units per gram and must be labeled to clearly indicate that the assay is not a measure of the antirachitic activity of the oil. Practically any normal oil will meet this standard although reworked oils would fail to do so. Carefully selected and prepared cod liver oils may run as high as 1000 units, so that the physician can select the oil of greater activity and give it in a smaller dose, where there is a special antipathy to its administration.

Oil of Turpentine.—The official oil of turpentine is not intended to recognize the oil distilled directly from pine wood although that product is now being marketed with practically the physical constants of the U. S. P. products.

Liquid Petrolatum.—The viscosity standard of the new Pharmacopœia is expressed as absolute kinematic viscosity although a table is given showing the comparative readings by the Saybolt and Engler instruments. The dividing line between light and heavy liquid petrolatum is from 170 to 175 (Saybolt).

Soft Soap.—The Pharmacopœia has returned to linseed oil for the making of Soft Soap. A striking innovation is, the introduction of a large percentage of sodium hydroxide. At one time it was believed that soft soap could not be made except through the exclusive use of potassium hydroxide as the alkali. The World War and the subsequent shortage in potash necessitated experiments which have shown that sodium hydroxide may be used in the proportion of 49 Gm. of 90 per cent NaOH and 19 Gm. of 85 per cent KaOH, in the preparation of 1000 Gm. of soap. The product closely approximating that made with potassium hydroxide alone.

Tincture of Digitalis.—The drug is first extracted with purified petroleum benzin and subsequently with an alcoholic menstruum, the product being standardized biologically. A stronger

Tincture of Digitalis has recently been placed upon the market. This tendency is to be greatly regretted as the only object seems to be to persuade some doctor to buy a special product through the claim that it is *stronger than the U. S. P.* The entire object of pharmacopœial standards is to secure uniformity in preparations so that there will be no danger from over-dosage when the product is prescribed in any part of the country. A purely commercial reason for changing official strengths should not receive the approval of the medical or of the pharmaceutical professions.

Camphorated Tincture of Opium.—This preparation has not been changed although there was a recommendation made to increase the amount of opium so that it would be taken from the exempt class of narcotics under the regulations of the Harrison Act. The Committee took the position that Congress intended to exempt paregoric when the Harrison Act was enacted and that it would not be desirable for an action to be taken which would conflict with the will of Congress. It may be permissible here to call attention to the regulations under the Harrison Act, which require a written order when the use of paregoric is made, and a registration of the sale.

Ointment of Rose Water.—The formula which has been official for many revisions has been retained. A questionnaire was placed before the American Dermatological Association, and the formula containing expressed oil of almond received a favorable vote. The requirement has been introduced, however, that it should be prescribed in pure tin collapsible tubes. The official Ointment of Rose Water, so preserved, has remained without apparent deterioration for several years. Thus the chief argument against it has been met. This requirement should not be difficult to meet, as such tubes are readily available and easily filled with the ointment. On the commercial scale, the tubes carrying as much as one pound of material are commonly used for other products, and there is every advantage in their employment for this ointment.

Aloe.—Assay processes were carefully tried but abandoned because no method available could be used with Cape Aloes, which constituted about one-third of the commercial Aloes. This offers one of the interesting research problems for the next revision.

Strong Silver-Protein and Mild Silver-Protein.—The question has been asked a number of times concerning the use of the term strong as applied to a preparation containing only from $7^1/_2$ to $8^1/_2$ per cent of silver, while the title Mild is used for the products containing 19 to 25 per cent of silver. The title refers of course to the therapeutic activity and not to the silver content, the Strong containing silver in a much more active form. It will still be necessary for physicians, in prescribing these colloidal silver products, to specify the particular commercial preparation desired, using the trade name, but the Sub-committee on Scope wished to recognize the two classes as valuable therapeutic agents and it was also believed that after the Pharmacopœia appeared, products would be marketed under the official names. The yeast test is not intended to be an assay but does effectively distinguish between the Strong and Mild types. Several chemical tests for identification were tried but none were satisfactory.

Barium Sulphate.—Standards for this chemical have been provided to insure a safe product for use in roentgenography. The caution statement at the beginning of the article directing physicians to write the title in full to avoid confusion with the poisons barium sulphide or barium sulphite, should be called to the attention of every physician.

Capsicum and its Tincture and Oleoresin are required to meet an organoleptic test in which a specified solution must produce a distinct sensation of pungency in the mouth. This test is hardly an assay and yet it is apparently the only available means of distinguishing between the capsicums which are active and those which are more suited for culinary purposes.

Emulsion of Cod Liver Oil.—The official emulsion has been understood to be a formula for an extemporaneous preparation. It has been found that the specifications of government departments have required its preparation in a permanent form. Therefore permission to add 7 per cent of alcohol as a preservative has been incorporated in the text.

Emulsion of Oil of Turpentine.—After a series of experiments, it was shown that the old "Forbes Method" of preparation in a dry bottle produced a superior emulsion in comparison with the U. S. P. IX formula, and that it could be made much more quickly and easily.

General Chairman, E. Fullerton Cook, Committee of Revision, U. S. P. X, has requested the Chairmen of the various Sub-committees to briefly review the principles governing the revision in their individual group and to explain the reasons for some of the more important changes.

The following are submitted:

REPORT OF THE SUB-COMMITTEE ON SCOPE.

BY H. C. WOOD, JR., CHAIRMAN.

The first paragraph of the General Principles adopted by the U. S. P. Convention of 1920 states that:

> "The object of the Pharmacopœia is to provide standards for the drugs and medicines of therapeutic usefulness or pharmaceutic necessity sufficiently used in medical practice throughout the United States and its possessions."

In the second paragraph the Committee of Revision was "authorized to admit into the Pharmacopœia a selected list of medicinal substances." Attention should be directed to three phrases in these orders: "therapeutic usefulness," "pharmaceutic necessity" and "selected list," they were beacon lights of our work. Immediately after organization the General Committee decided that physicians were more properly qualified than pharmacists to decide as to whether a drug was "therapeutically useful" or not; accordingly it was voted to leave the final decision on admission of therapeutic agents to the medical members of the General Committee and of pharmaceutic agents to the pharmaceutic members. It is remarkable that an action so manifestly reasonable, had never before been taken by a Revision Committee. Under this rule there was later organized a "Referee Committee on Scope" which reviewed those decisions of the regular Sub-committee on Scope that had been objected to by any member of the General Committee; this Referee Committee was composed of all of the members of the General Committee who had the degree of M.D.

The plan of procedure adopted in the Sub-committee on Scope was as follows: The whole U. S. P. IX was rapidly gone over and a list prepared at one session of all those substances on which there was complete unanimity in favor of admission. This gave the other Sub-committees material with which to begin work at once, thereby saving several months in the preparation of the Pharmacopœia. The remaining articles in the U. S. P. IX were divided into a number of groups for more careful consideration. The list of drugs contained in each of these groups was sent to the members of the Sub-committee for comment, their opinions distributed to the other members and a vote called for. If this vote showed a majority of three-fourths, either for or against admission the matter was considered settled and a recommendation forwarded to the General Committee. When the first vote failed to show so nearly a unanimous agreement on a drug it was later re-submitted for consideration. In the effort to arrive at a wise conclusion, in many instances the Sub-committee applied for outside advice. A few examples may indicate the seriousness of spirit with which the problem was attacked: Through the coöperation of the Sub-committee on Therapeutics, we were furnished with the opinions of members of the American Dermatological Society and of the American Laryngological Society on certain drugs of distinctive importance in these special fields; numerous individuals who had special information or experience concerning some remedy were consulted, and Professor McGuigan of the University of Illinois kindly carried out an elaborate experimental study of the efficacy of Ferric Hydroxide in arsenic poisoning. After all the facts available had been brought to light the accumulated information was distributed to the members of the Sub-committee and another vote called for. At this second vote the question was decided by a plain majority.

In the meantime the members of the Sub-committee were invited to offer suggestions for "new drugs" (that is, "new" from the pharmacopœial standpoint). This list was treated in much the same manner as already described.

After the Sub-committee on Scope had reached a decision their recommendations were laid before the General Committee and objections and criticisms invited. All such communications were laid before the "Referee Committee" of all the medical members. It may be remarked in this connection that the General Chairman despite his abundant other burdens kindly consented to act as Chairman of this Referee Committee in order that there might be no question of personal bias, such as might have arisen had a medical member guided the deliberations.

Such in brief is the history of the fate of applicants for admission to the U. S. P. X. Some of you may doubt the wisdom of some of the decisions made by the Sub-committee; it would be a dreary world if there were no differences of opinion. The members of the Sub-committee on Scope will not take offence if some one attacks the adequacy of our judgment, but we can assure the professions who have entrusted us with these duties that if we have failed it has not been

through any lack of sincerity of effort on our part. The list of admissions and deletions to and from the U. S. P. X reflects the opinion of the majority of the medical members of the Committee of Revision arrived at after long and careful study of all the available evidence.

REPORT OF THE SUB-COMMITTEE ON THERAPEUTICS AND PHARMACODYNAMICS.

BY TORALD SOLLMANN, CHAIRMAN.

A part of the duty of this Sub-committee consisted in answering inquiries from other Sub-committees, this was done to the best of its ability; sometimes with the aid of associations of specialists in the various fields of medicine, who responded freely to our requests.

The major task of the Sub-committee consisted in the revision of the "Average Doses," In this the Sub-committee followed a conservative trend. The modifications were made for three objects: (1) To make the "average doses" of the Pharmacopœia representative of the dose that could be expected to produce therapeutic results under the usual or average conditions: (2) to adjust the doses of the different preparations of a drug to their concentration, unless there were strong reasons to the contrary; and (3) to omit the dosage for drugs which were admitted to the Pharmacopœia for pharmaceutic rather than therapeutic reasons; such as many of the crude drugs. For such drugs, it would be difficult to assign a dose that could be relied to produce a therapeutic effect.

The definition of "average dose" by therapeutic effect also made it necessary in several cases to introduce two doses for the same preparation.

For some drugs the therapeutic dose is so close to the dangerous dose, or is itself necessarily somewhat dangerous, so that the word "caution" was added.

REPORT OF THE SUB-COMMITTEE ON BIO-ASSAYS.

BY C. W. EDMUNDS, CHAIRMAN.

The outstanding feature of the biological assays of the U. S. P. X is the fact that they are requirements. Ten years ago it was believed that their development was yet too experimental for compulsory use and they were therefore admitted almost entirely upon an optional basis.

This plan served to center interest and experiments upon the official processes and prepared the way for the requirements of the U. S. P. X. Another feature has helped greatly in making these standards practicable, namely the coöperation of the Bureau of Chemistry in voluntarily offering manufacturers type products conforming to the U. S. P. requirements. By all checking the activity of their preparations against the same standards, a uniformity of activity not otherwise possible can be attained.

The Sub-committee received advice and help from a number of manufacturing pharmacists who were able to bring to the conferences an immense amount of experimental data which made it possible for the Sub-committee to determine and adopt workable and attainable standards.

An acknowledgment and appreciation of the valuable coöperation of both the Bureau of Chemistry and of members of the American Drug Manufacturers' Association are hereby publicly offered.

REPORT OF THE SUB-COMMITTEE ON BIOLOGICAL PRODUCTS AND DIAGNOSTICAL TESTS.

BY GEORGE W. McCOY, CHAIRMAN.

Deletions from the Pharmacopœia, of biological products, were as follows:

Serum Antidiphthericum
Serum Antitetanicum Siccum
Serum Antidiphthericum Siccum

These were all deleted because they were not in use in the United States, the first one chiefly because physicians have become so accustomed to the use of the refined product that there was no demand for the unrefined serum.

The two dried products were deleted presumably because they, too, had practically no field of usefulness under American conditions. Theoretically they had some superior keeping qualities over the fluid serums, but the difficulty of bringing them back into solution was sufficient to rule them out.

Changes in the official names of the following were made; this was done presumably to be more in line with the accepted principles of nomenclature:

Serum Diphtheriticum Purification, U. S. P. IX, became **Antitoxinum Diphtheriticum**

Serum Antitetanicum Purificatum, U. S. P. IX, became **Antitoxinum Tetanicum**

Serum Antitetanicum, U. S. P. IX, became **Antitoxinum Tetanicum Crudum.**

Virus Vaccinicum, U. S. P. IX, became **Vaccinium Variolæ.**

The most important change was in the "Dating Regulations" which were adopted in the new Pharmacopœia and which had been ignored in the preceding one.

In the case of diphtheria antitoxin the minimum potency was raised from 250 units per cc. to 350 units per cc., and in the case of tetanus antitoxin it was raised from 100 units per cc. to 300 units per cc., in the case of the crude tetanus antitoxin it was raised from 100 to 150 units per cc.

In the case of vaccine virus instructions were inserted for a storage temperature of preferably below zero, and never above 5° C. whereas the U. S. P. IX prescribed a storage temperature of between 4.5° and 15° C.

There were some prescribed changes in the methods for sterilization of Liquor Sodii Chloridi Physiologicus, and the chapter on Sterilization was rather extensively rewritten; all these changes are self-explanatory.

REPORT OF THE SUB-COMMITTEE ON BOTANY AND PHARMACOGNOSY.

HENRY KRAEMER, CHAIRMAN (1920–1924) AND E. L. NEWCOMB, CHAIRMAN (1924–19—).

The Sub-committee on Botany and Pharmacognosy carried out a series of extensive investigations and scientific surveys in connection with its study of the need for revision of the U. S. P. IX vegetable drug standards.

"Approximately one hundred different questionnaires were sent out to the retail drug merchants and pharmaceutical manufacturers in the country. These questionnaires related to the present standards and invited criticism and the desirable changes. Nearly 2500 pages of closely typewritten data and analytical results were compiled as a result of these questionnaires. This information was carefully studied by the Sub-committee and together with research work carried on by the Sub-committee constituted the basis for such changes as have been made.

"The Sub-committee carried on intensive research along the lines of inorganic foreign matter, moisture, color, microscopic measurements, botanical nomenclature, uniformity in degree of fineness of powders and other related subjects. Upwards of one hundred tons of vegetable drugs were examined during these studies, original bale lots being used in most all cases. The committee is especially thankful to McLaughlin, Gormley, King Company of Minneapolis, Minnesota, for supplies of crude material, practically all of which was made available at simply the cost of transportation, the supplies being returned after the tests had been made. Over 10,000 determinations of total and acid-insoluble ash were made and upwards of 200,000 determinations on the microscopic measurements. Many thousand tests were also made of the percentage of moisture occurring in vegetable drugs under different conditions and on the uniformity of the degree of fineness of powders.

"The result of this extensive work and compilation of data has brought to light the need for certain specific changes in the drug standards which may be summarized as follows:

I. The definition proper of each vegetable drug has been separated from the purity rubric. The statement defining the drug is now given as a separate, clear concise sentence. This is immediately followed by a paragraph in which is given the standard requirements of active principle and the tolerances for foreign matter.

II. The tolerance for foreign inorganic matter has been expressed in percentage of acid-insoluble ash permitted.

III. The descriptive paragraphs have been retained practically as in the present Pharmacopœia, but paragraph leads have been added which clearly indicate the significance of the text.

IV. Changes have been made in microscopic measurements where they were indicated by published data or research work carried out.

V. Latin terms and phrases have been excluded wherever simple English words could be properly used.

VI. The botanical nomenclature has been critically gone over by Professor F. K. Butters of the Department of Botany, University of Minnesota, and the attempt has been made to bring each case into harmony with the International Code which we were directed by the Pharmacopœial Convention to follow.

VII. The standards for uniformity in degree of fineness of powdered drugs have been entirely revised and placed upon a far more scientific and practical basis than has prevailed heretofore.

"All of the changes which have been made have been made under the general rule of the Convention for greater scientific accuracy or completeness. The Sub-committee, notwithstanding the large amount of work done, has been unable to reach decisions relative to definite standards for the color of vegetable drugs or to completely solve the question of organic impurities. These problems each require further study. A large number of workers collaborated and while this has given the widest possible range of criticism and suggestion, it has made difficult the securing of uniformity in method of presenting all monographs. It is felt, however, that this is not a serious defect and that subsequent work may smooth out certain irregularities which still exist. In a brief report of this kind, it is impossible to enumerate and discuss in detail why each specific change has been made. In no case, however, has a change been made except where the facts indicated that such a change was necessary.

"The Sub-committee suffered the great loss of its chairman, Dr. Henry Kraemer, who bore the major portion of the work of this Sub-committee during the two previous revisions. Dr. Kraemer's death, however, did not take place until the work of the present revision was practically completed. The Committeemen all recognize the untiring work of Dr. Kraemer during the last three revisions which has brought the vegetable drug standards of the U. S. P. to be recognized throughout the world as the most complete and scientifically accurate of any in existence."

REPORT OF THE SUB-COMMITTEE ON PROXIMATE ASSAYS.

BY FRANK R. ELDRED, CHAIRMAN.

On the whole, the alkaloidal assay processes of the U. S. P. IX were very satisfactory and no radical changes have been made in the U. S. P. X. In no other branch of analytical work is experience on the part of the operator more necessary than in the determination of alkaloids. The general directions for alkaloidal assays were rewritten with the assumption that every one undertaking such assays is familiar with the principles involved and has the necessary experience in the technique. Discussion of the principles underlying alkaloidal assays, methods of avoiding emulsions and general directions for conducting the shaking out process have therefore been omitted. Type processes have been introduced in order to avoid repetition and make the methods easy to follow. In most cases the statement in the body of the Pharmacopœia is confined to the amount to be taken for assay, the type process to be followed, solvent to be used, and directions for determining the alkaloid gravimetrically or volumetrically.

The total extraction method has been introduced for the mydriatic drugs and for some galenical preparations, which were formerly assayed by the aliquot part method. Aliquot part methods have been retained wherever it was thought that any difficulty might be experienced in completely extracting the alkaloids by percolation. Experience with the total extraction method may lead to its more general adoption in the next Pharmacopœia.

The alkaloidal assay for aconite and its preparation has been omitted as the results bear little relation to the physiological activity.

Cinchona is a difficult drug to extract and the preliminary heating with hydrochlorie acid leads to higher and more uniform results.

Colchicum cannot be assayed by one of the type processes and the assay of U. S. P. IX has been retained with very little change.

The opium assay is unchanged.

REPORT OF THE SUB-COMMITTEE ON INORGANIC CHEMICALS.

BY H. V. ARNY, CHAIRMAN.

The task of preparing monographs for the inorganic chemicals of U. S. P. X was simpler than similar work of ten years ago. The U. S. P. IX recognized 174 inorganic chemicals and preparations thereof; the U. S. P. X recognized only 139 inorganic chemicals and preparations. The guiding policy of the Sub-committee on Inorganic Chemicals (which we will hereafter designate as "S. C. 7") has been to make changes only when the methods of U. S. P. IX were found defective. As most of the tests of U. S. P. IX successfully withstood the critical scrutiny of thousands of workers during the past decade, comparatively few changes were necessary. No important change was made without discussion in bulletins issued to the members of the Sub-committee and where these discussions evoked differences of opinion, the question was settled by a mail ballot. Standards, when changed, were raised instead of lowered, although in this case caution was observed, since it sometimes happens that a demand for increased requirement is not based solely upon altruistic motives.

General Tests.—The principle of saving space in the individual monographs by referring to general tests described in full in the rear of the book, has been carried to a still greater extent in preparing the U. S. P. X. Thus a special chapter has been given to tests for acidic and basic ions (acids and metals) and in the individual monographs (taking sodium chloride as example) it is stated that it "responds to the reactions for sodium, page 444, and for chlorides, page 441." The former tests for traces of impurities (taking chlorides as example) is changed from the loose statement that a solution of the sample when treated with silver nitrate T. S. gives "not more than a faint turbidity" to an accurate gauging of the impurity by saying that the turbidity produced is not more than that produced by a definite amount (0.1 cc., 0.2 cc., etc.) of *N*–50 hydrochloric acid (properly diluted) when treated with silver nitrate T. S. and nitric acid; nitrate tests have all been placed upon a uniform basis by directing the superimposing of the ferrous sulphate solution upon concentrated sulphuric acid instead of the use of a crystal of ferrous sulphate; tests for potassium (as impurity) are strengthened by directing that the solution employed, after mixing with tartaric acid solution, be allowed to stand 15 minutes; the volumetric assay of acids is described in a special chapter with reference in the individual monograph to that chapter; the general assay for alkaline salts of organic acids has been improved and a new chapter on details of manipulation in the assay of alkaline benzoates and salicylates has been added; and lastly the chapter on electrolytic assays has been improved and enlarged so as to include silver and copper compounds as well as the mercury and zinc assays provided by the U. S. P. IX.

Changes in Style, etc.—The much criticized term found in many rubrics of the U. S. P. IX, "dry in a desiccator over sulphuric acid" has been uniformly changed to "dry over sulphuric acid." As in the foregoing, many statements as to routine of analysis have been reduced to the fewest possible words. If a person does not know how to dry the chemical over sulphuric acid, he had better leave the U. S. P. tests alone. The initials "V. S." are dropped from volumetric solutions; normal sulphuric acid V. S. of the U. S. P. IX now being called "normal sulphuric acid."

The very convenient statement in each assay of the inorganic chemicals of U. S. P. IX "Each Gm. of (the chemical) = ——— cc. of (the volumetric solution)" has been dropped by a majority vote of S. C. 7.

In all cases save a few where taste is really a criterion, mention of the taste of inorganic chemicals has been omitted thus avoiding what non-pharmaceutical users of the U. S. P. term "cook-book methods." The strength of the solutions of the U. S. P. X has generally been set upon a weight-volume basis. Only eight of the solutions of the U. S. P. X—calcium hydroxide, chlorinated soda, chlorinated soda surgical, ferric chloride, ferric sulphate, hydrogen dioxide, lead subacetate, and zinc chloride are upon a weight-percentage basis.

Additions and Deletions.—While no less than 41 inorganic chemicals and preparations of the U. S. P. IX were dropped in the recent revision only three of the new officials came within the scope of S. C. 7. These three are Barium Sulphate (for X-ray work) Sodium Biphosphate, and Surgical Solution of Chlorinated Soda (Dakin's Solution). In the case of the two chemicals the standards set by New and Non-Official Remedies were taken as the starting point and were modified as per suggestions received from several sources. The recipe for Dakin's solution was the Kelly-Krantz method adopted by the Sub-committee on Waters and Solutions.

Changes in Individual Monographs.—Most of these changes were enumerated in the lists published in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION during 1923 and 1924; so little need here be said beyond the fact that where the monographs of the U. S. P. IX had been found satisfactory, little or no change was made. Those monographs where distinct changes were found necessary included the following:

Acidum Sulphuricum Aromaticum (assay improved);
Calcii Carbonas Præcipitatus (magnesium test added);
Calcii Glycerophosphas (alkali-metric assay added);
Ferrum Reductum (microscopic test added);
Hydrargyri Iodidum Flavum (test for mercuric iodide changed);
Liquor Ferri et Ammonii Acetatis (assays for iron and ammonia added);
Liquor Magnesii Citratis ("limit of citric acid" test added);
Magma Magnesia (strength increased to "not less than 7 per cent $Mg(OH)_2$);
Oxygenium (strength increased to 98 per cent O);
Potassii Chloras (water-solubility figure corrected);
Potassii Iodidum (test for nitrate and nitrite added);
Syrupus Acidi Hydriodici (strength unchanged; wording of acid content changed to 1.3 to 1.5 Gm. per 100 cc.);
Talcum Purificatum (test for carbonate added);
Tinctura Iodi (potassium iodide assay improved);
Zinci Oxidum (heavy metal test changed to the LaWall test for lead and copper).

Conclusion.—Much additional data, connected with the inorganic chemicals and preparations thereof could be included in this report but as most of these may be discussed in reports from other Sub-committees, they will not be given here.

REPORT OF THE SUB-COMMITTEE ON ORGANIC CHEMICALS

BY GEORGE D. ROSENGARTEN, CHAIRMAN.

Time does not permit of an extended exposition of the changes in the standards of the Organic Chemicals of the Pharmacopœia. I am, therefore, forced to limit myself to a brief discussion of a few of the salient features of the revision of these chemicals in the U. S. P. X.

The standards, tests, and assays and the principles governing the revision of Organic Chemicals are not only closely related but are actually so interlocked with those of Inorganic Chemicals that no sharp line of demarcation between these classes can be drawn, and I trust my colleagues of the Sub-committee on Inorganic Chemicals will pardon me if my remarks will touch upon subjects in which they were equally as interested.

The question "Why changes?" can perhaps readily be answered in a general sense by the statement that this is what constitutes revision of the U. S. P. The progress being made in the course of a decade, the interval between U. S. P. Revisions, in all lines of thought and activity is indeed very rapid and truly remarkable, and **progress** is synonymous with **change.** Processes of manufacture are being continually perfected, new valuable remedies brought to light and greater refinement and precision are constantly being evolved in methods of testing. The object of the periodic revision of the U. S. P. is to bring the book up-to-date with and keep it abreast of the practical as well as the scientific developments. I look upon the U. S. P. as the record of the progress in pharmacy and allied sciences.

A book of the character and status of the United States Pharmacopœia must be both practical and scientific. To blend the two happily and harmoniously was the fundamental consideration governing the revision of the organic chemicals. It was not and is not an easy task. How far we have succeeded in accomplishing this end we leave to the pharmaceutical public to judge.

Greater precision in the testing of chemicals has been achieved to a considerable extent by the introduction of quantitative tests for such impurities as chlorides, sulphates, and also for limits of acidity or alkalinity of a number of salts. Instead of the qualitative test for the casein-digestive power of Pancreatin, a definite assay using pure casein has been introduced. The advantages of these innovations are very obvious and need no further comment.

The introduction of assays wherever possible has been followed in the new Revision and a number of assays have been added. Among the new assays there is included one for the deter-

mination of the proportion of Cresol in Compound Solution of Cresol. In addition to the assay for cresol, the cresol obtained in the assay is also to be tested for its distillation range which must be the same as that required for official Cresol.

Storax has in the past invited considerable adulteration. In addition to the tests in the former revision, an assay for cinnamic acid content has been added and also a melting point for this acid. These additional tests will make the adulteration of the drug unprofitable. The principle of general tests and assays has already been followed to some extent in former revisions but in this Revision this idea has been very much extended. Instead of describing the method of assay under each acid, a general method of assaying acid is given among the General Tests. The time is fully ripe for such general tests, and following this line of thought identification tests of inorganic as well as a number of organic chemicals have been relegated to a special chapter included in the General Tests.

Viscosity is a branch of physical chemistry that has attracted much thought and study. It is recognized as one of the fundamental features of life, hence in pharmacy. The principle medicinal use of Liquid Petrolatum is a function of its viscosity. The Pharmacopœia requires a viscosity test for Liquid Petrolatum. A chapter on Viscosity, briefly describing the various methods for its determination has been added. Instead of expressing the viscosity of Liquid Petrolatum in terms of an arbitrary unit, the more scientific unit of Kinematic viscosity, which is based on abolute viscosity, has been adopted. The viscosity may be determined by the use of instruments in general use for this purpose but the numbers obtained with these instruments are converted into terms of Kinematic viscosity by the use of a conversation table which is also included.

The solubility statements have been made more definite by defining the approximate degree of solubility conveyed by such terms as "very soluble," "sparingly soluble," etc.

Nearly all organic chemicals include a test for ash. The directions for this test are described under General Tests and under the individual chemicals the concise but forcible statement is made "Ash, not more than ——— per cent."

In conclusion it is gratifying to state that the revision of organic chemicals and of other chemicals as well has been in the upward direction. Altogether standards of purity have been raised and, in order to effect a greater uniformity, wherever possible, ranges in strength have been narrowed.

REPORT OF THE SUB-COMMITTEE ON REAGENTS AND TEST SOLUTIONS.

BY CHARLES H. LAWALL, CHAIRMAN.

The work of this Sub-committee has been concerned with the preparation of a number of the texts in the latter portion of the U. S. P. X, particularly the Reagents, Test Solutions and Volumetric Solutions and Special Tests.

This portion of the Pharmacopœia is consulted more frequently by analysts, than by any other class of pharmaceutical workers.

The list of reagents and test solutions has been fairly well stabilized during the past three revisions in which the development of this feature of pharmacopœial work has been most marked.

Now tests are occasionally added and new reagents needed, but for the most part the fundamentals go back many years.

The first task of the Sub-committee was to decide upon additions and eliminations. These were largely dependent upon admissions and deletions of official substances and a condition of instability in this respect continued until the page proof stage of the printing of the Pharmacopœia was reached. In this connection it is believed that no unnecessary reagents, test solutions or methods have been continued, nor are there any tests in the monographs which call for reagents, test solutions, or methods which are not adequately described.

One of the principal changes was the separation of the former combined list into appropriate groupings entitled respectively Reagents, Test Solutions, Indicators, and Volumetric Solutions. In the treatment of each of these groups the effort was made to combine conciseness and accuracy in order to meet the needs of the situation without the sacrificing of unnecessary space.

It may also be of interest to state that so far as possible, reagents, test solutions, and tests were brought into harmony with the standards for similar articles and methods as used by the American Public Health Association and the Association of Official Agricultural Chemists.

Whether it is due to the fact that Americans are always expecting trouble, or to a traditional urge toward completeness, the fact remains that when these sections of the U. S. P. X are compared with similar sections in any of the other pharmacopœias of the world, the greater thoroughness of the method of handling these subjects in the U. S. P. X, is clearly evident. Especially is this true in the description of the method of preparation and standardization of the volumetric solutions, and in the standards provided for the Reagents from which the Test Solutions and the Volumetric Solutions are directed to be prepared.

Practically all of the general tests provided in the U. S. P. IX have been retained and a number of additional general tests have been added for the purpose of saving space in the monographs. Among the new Tests of a general nature thus introduced are the Assay for Acids, the Assay for Alkali Benzoates and Salicylates. The determination of the Ester number, the Identification Tests for Chemicals, the Rosin Test, the Turbidimetric Test, the Test for Unsaponifiable Matter and the Viscosity Test.

The most important of these are the Identification Tests for Chemicals and the Turbidimetric Tests.

The Identification Tests for Chemicals are patterned upon a chapter in the Appendix of the British Pharmacopœia of 1914. The inclusion of this section makes it unnecessary to repeat simple identification tests time after time, in the monographs, and the five and one-half pages devoted to this portion of the book has made it possible to save many pages of useless repetition in the monographs and to develop the work in the interest of uniformity and exactness of procedure.

The Turbidimetric Tests are also intended to save space in the main body of the work and at the same time to define with mathematical exactness the limit of permissible impurities of a harmless nature, the complete removal of which would add unduly to the cost of many of the official chemicals without increasing their therapeutic value.

The addition of these two sections constitute a distinct advance in Pharmacopœia revision work and will set a standard for many other pharmacopœias to follow.

The Sub-committee has worked harmoniously throughout the entire progress of the Revision and await the verdict of the users of the book, and of the reviewers and critics of this and other countries with interest and confidence.

REPORT OF THE SUB-COMMITTEE ON VOLATILE OILS.

BY W. O. RICHTMANN, CHAIRMAN.

The work of this Sub-committee consisted of revising the texts of such volatile oils as were admitted by the Sub-Committee on Scope. In carrying out this work, a detailed study was made of each individual volatile oil that has ever been recognized in the U. S. P. from 1820 to 1910, inclusive. The same was done with all the oils recognized in any pharmacopœia revised since 1900. Standard works on volatile oils were referred to for any available data. Journals published since the publication of the U. S. P. IX were consulted, with especial reference to data on the individual volatile oils to be included in the U. S. P. X. The Digest of Comments on the U. S. P. IX and N. F. IV, as far as available was very serviceable. Aid was especially sought from the producers and dealers of these oils.

The preliminary drafts of the tests were submitted to the members of the Sub-committee and then to the General Revision Committee, when they were then sent to parties who were specifically interested in the volatile oils. A conference was held with the latter in Philadelphia in June 1922. The final drafts of the proposed texts were then drafted, comments again invited and various minor changes were made, before final adoption.

No radical changes have been made in the texts. The most general change has been the inclusion of requirements of refractive index limits for each oil. Data for a temperature of 25° C. was not available, so that for 20° C. was used.

REPORT OF THE SUB-COMMITTEE ON EXTRACTS, FLUIDEXTRACTS AND TINCTURES.

BY GEORGE M. BERINGER, CHAIRMAN.

The appearance of a revision of the Pharmacopœia of the United States is a noteworthy event in the history of the medical practices. It is specially interesting to note the changes that have been made. Especially important are those affecting the galenicals that are more frequently

dispensed in the form of prescriptions. A committee recommending that a certain change be made usually have in hand information or data on which their opinion is based. The pharmacist and other users of the Pharmacopœia may not be aware of these reasons and should be enlightened thereon.

The following notes on the more important changes that have been made in the preparations assigned to this Sub-committee may be of interest:

EXTRACTA.—The introductory chapter on extracts has been rewritten and it is presumed that the phraseology has been improved. A wider latitude in the use of diluents is to be noted and also the permission to color by the use of a harmless coloring, such as caramel or chlorophyll.

Eleven of this group of preparations, official in the U. S. P. IX, have been dropped in this revision. This may be considered as an indication of the view of the medical men on the Committee as to the extent of the use of extracts in medical practice at this time.

A few changes in the titles are to be noted in this class.

Extractum Belladonnæ replaces **Extractum Belladonnæ Foliorum.** The word "leaves" being omitted from both the Latin and English titles throughout the monograph.

Extractum Colchici replaces **Extractum Colchici Cormi.**

In **Extractum Cannabis,** storax or substandard extract of cannabis are recommended as the diluents replacing glucose of the U. S. P. IX which was not satisfactory.

In **Extractum Cascaræ Sagradæ,** starch dried at 100° C. is alone directed as the diluent in place of the magnesium oxide and starch of the U. S. P. IX.

The monograph on **Extractum Fellis Bovis** contains a caution against the use of copper apparatus in its preparation. The Sub-committee learned that in the preparation of this extract, copper utensils were not permissible as the extract acted upon the copper and became contaminated.

Extractum Glycyrrhizæ.—To comply with the trade conditions, the ash permissible has been increased from 6 per cent to 8 per cent.

Extractum Glycyrrhizæ Purum is directed to be made by extracting the drug with boiling water alone without the use of ammonia and to avoid decomposition, the percolate must be promptly evaporated.

Extractum Hyosoyami.—A formula for the powdered extract of this drug is added. Possibly this formula will be more generally used than that for Pilular Extract.

Extractum Malti.—While the formula for the extract has been omitted in the monograph, a standard preparation is proposed, preserved by the addition of 10 per cent by weight of glycerin, and an assay process to determine the diastasic value has been added.

Extractum Nucis Vomicæ.—In the process for this extract, 1 per cent by volume of acetic acid is added to the menstruum used for the extraction of the drug. The washing with purified petroleum benzin has been simplified. No attempt is made to recover any alkaloid removed by this benzin washing as the amount that is lost by such washing, intended to remove the fat, is considered negligible.

Extractum Rhei.—As in Extract of Cascara, the magnesium oxide has been omitted as a diluent.

Extractum Stramonii.—In the powdered extract of stramonium, magnesium oxide in the diluent is omitted.

FLUIDEXTRACTA.—The introductory chapter for this class has been revised and rewritten. Here again the deletions have been quite numerous. Twenty-five fluidextracts, official in the U. S. P. IX, have not been admitted in the U. S. P. X. It is believed that the lack of use justified the omission of most of these from the official list. Only one title has been changed: namely, Fluidextractum Colchici replaces the Fluidextractum Colchici Saminis of the U. S. P. IX. It is to be remembered that the official Extract is to be prepared from the Corm and the official Fluidextract from the Seed of Colchicum. In the fluidextracts and tinctures, it is attempted to carry out the instructions of the Pharmacopœial Convention and introduce in each monograph a statement as to the range of alcoholic content.

Fluidextractum Belladonnæ Foliorum has been admitted so that we now have both the Fluidextracts of the Leaf and Root of Belladonna in the U. S. P.

Fluidextractum Cannabis.—It is to be noted that this fluidextract is now directed to be standardized against the standard Fluidextract of Cannabis. Note that the standard fluidex-

tract must be active in a dose of 0.03 cc. for each kilogram of body weight of dog, but that in the test for comparison the amount used is 0.1 cc. of both the standard and of the fluidextract being tested. The larger amount is taken for better comparison and to arrive at the same degree of activity.

In the formulas for **Fluidextractum Cascaræ Sagradæ Aromaticum,** several minor changes have been made. A portion of the magnesium oxide is replaced by lime. The mixture of these two oxides serve better than magnesium oxide alone in the making of bitterless extracts. The alcoholic content of this preparation has been reduced from 25 per cent by volume to 20 per cent by volume, which has proved ample to preserve the preparation.

Fluidextractum Ergotæ.—This fluidextract is to be standardized biologically to comply with the standard Fluidextract. In the formula for this preparation it is directed that the Ergot be first defatted by percolation with purified petroleum benzin. Experiments carried on by several investigators proved that the oil removed from the Ergot did not remove any of the valuable constituents and that a fluidextract made from defatted drug was less prone to precipitation and deterioration. Note that the standard is adjusted biologically only after 6 months of aging. Commercial products, also after six months, should possess the same activity.

Fluidextractum Glycyrrhizæ.—The formula for this preparation directs that the extraction be made by percolation with boiling water and that the percolate be promptly evaporated, the alcohol 250 cc. per liter, being added to the concentrated percolate simply as a preservative.

Fluidextractum Ipecacuanhæ.—It is to be noted that the standard for this fluidextract has been reduced to an average of 1.5 per cent of ether-soluble alkaloids. It is exceedingly difficult to thoroughly extract Ipecac so that in this instance it became necessary to reduce the alkaloidal standard. The formula has been modified by increasing the amount of diluted hydrochloric acid directed. The amount required is to be determined in the operation as it will vary with different lots of the drug.

Fluidextractum of Rhois Glabræ.—This is one of the few preparations that have been taken from the National Formulary and introduced in the U. S. P.

OLEORESINÆ.—The deletion of Oleoresins of Cubeb, Parsley Seed, Black Pepper, and Ginger, leaves only the Oleoresin of Aspidium and Oleoresin of Capsicum.

For Oleoresin of Aspidium a standard of 24 per cent crude filicin is adopted and an assay method copied after that of the Swiss Pharmacopœia is introduced.

For the Oleoresin of Capsicum, an organoleptic test is introduced which is to be viewed as qualitative and dependent upon the cultivation of the sense of taste by the examiner.

RESINÆ.—In the official resins the omission of the Resin of Scammony is to be noted and the substitution therefore of the Resin of Ipomoea, the so-called Mexican Scammony. This change has become a generally established procedure in the drug trade and is now recognized by the U. S. P.

TINCTURÆ.—The introductory chapter of this class has been continued with a few necessary changes in the phraseology. Fifteen of the tinctures of the U. S. P. IX have been dropped by the U. S. P. X. Doubtless, the use of a number of these will be continued in medical practice.

Tinctura Aconiti.—The biologic assay replaces the chemical assay for both the Aconite drug and tincture.

Tinctura Cantharidis.—In this tincture 50 cc. of glacial acetic acid per liter is used with the hope of more thoroughly extracting the cantharidin than is possible by the use of alcohol alone as a menstruum.

Tinctura Cardamomi.—The drug strength has been increased from 150 Gm. of Cardamom Seed to 200 Gm. of Cardamom Seed so that this tincture corresponds in drug strength with the other non-potent tinctures.

Tinctura Cinchonæ Composita.—In this formula, Red Cinchona Bark is no longer specified and so the pharmacist has the option of using any of the Cinchona Barks available that correspond with the U. S. P. standard.

Tinctura Digitalis.—The tincture of the fat-free Digitalis becomes the official preparation. The powdered drug is to be defatted by percolation with purified benzin before used for the preparation of the tincture. After many years of trial, the fat-free tincture seems to have demonstrated its superior therapeutic value and keeping qualities.

Tinctura Krameriæ.—Again this makes its appearance in the U. S. P.

Tinctura Opii.—Under this title the Tincture of Deodorized Opium becomes official, this Pharmacopœia recognizing only one Tincture of Opium. As it was deemed advisable to have but one formula official and the Tincture of Deodorized Opium was thought to answer all medical needs, the formula for the plain Tincture of Opium, the old fashioned Laudanum, was deleted.

REPORT OF THE SUB-COMMITTEE ON WATERS, SOLUTIONS, SPIRITS, SYRUPS, AND ELIXIRS.

BY WILBUR L. SCOVILLE, CHAIRMAN.

The changes in the Waters include (1) the deletion of a formula-method for making distilled water, (2) the deletion of the weaker orange flower water, and (3) a general change in the method of making aromatic waters, in the interests of simplicity and the avoidance of contamination. In deleting the formula for making distilled water, there was considered the many efficient stills now being sold for this purpose, several of which are continuous and satisfactory. The tests prescribed safeguard the product, however it may have been made, and a prescribed process thus seems to be no longer necessary.

Orange Flower Water was made by simply diluting the Stronger Orange Flower with distilled water—a purely extemporaneous process—and the proper adjustment of the quantity to be used in any formula is necessary in either case. So the elimination of the weaker water simply reduces the number of articles the pharmacist needs to carry or be familiar with, yet retains all the practical advantages of both. The Sub-committee voted to apply the same reasoning to Rose Water also, but objection was made that the stronger water is sometimes undesirable in collyria and the Sub-committee on Therapeutics was induced to request the retention of both strengths of rose water.

In the Liquors the Sub-committee favored the adjustment of all solutions on the basis of grams of solid per 100 cc. instead of weight percentage. Since solutions are used by volume, even in the formulas for official preparations, and are also prescribed by volume, it is a simple matter to calculate the quantity of active ingredients in any specified volume of solution on this basis. When weight percentage is employed, such a calculation is complicated by the varying relations between weight and volume, according to the strength and specific gravity of the solution. Both of these factors must be known accurately and must be taken into consideration in determining the amount of active ingredient. When the solutions are adjusted on the weight-volume basis, only the assay strength is required.

Sub-committee No. 12 hoped that all of the official solutions would be adjusted on this basis, but opposition developed on the ground of tradition and assay methods, and a compromise was necessary. By the use of the Ostwald pipettes (graduated to hold, instead of to deliver, a definite volume) the accurate measurement of even a very viscid liquid is now easy, and the assay of these liquids by volume is quite accurate, and is more quickly made than by weight.

Sub-committee No. 12 had to do only with the formulas of the Liquors, and when it recommended that the formula be dropped its jurisdiction over that particular solution was ended. Hence, on the solutions with a formula, all are adjusted on the weight-volume basis except Liquor Ferri Tersulphatis, which is employed in manufacturing only; Liquor Plumbi Subacetatis, which is made by volume but standardized by weight and is used externally; and Liquor Sodae Chlorinatæ which is both made and standardized by weight and is employed externally.

Solution of Magnesium Citrate had the acid increased because its stability is thereby augmented. The Sub-committee discussed this solution to greater length than any other, and hesitated to make the change. The evidence of increased stability in freedom from precipitation was found to be positive and so the change was decided upon. The solution is pharmaceutically too strong to be satisfactory, and evidence was presented that it is also stronger therapeutically than it need be. A much more palatable and pleasant solution, which is also less acid, can be made by reducing the strength, and such a solution is official in the "French Codex." A weaker and pharmaceutically a much more satisfactory solution was considered, but the Sub-committee regarded this as essentially a question of therapeutics and so beyond its scope. It is hoped that this question may be taken up in the interval between this and the next revision, and a satisfactory solution of this problem be arrived at.

The changes in the Syrups include the use of sugar in the formula for Syrup of Hydriodic

Acid in place of syrup, because in this preparation the influence of quality in the sugar is very noticeable, and the new formula encourages a special selection of the sugar used. Since this syrup is less than half saturated, the dissolving of the sugar is quickly accomplished.

Syrup of Ferrous Iodide is adjusted on the weight-volume basis, without material change in strength. This makes the calculation of the amount of ferrous iodide in any given dose or formula a simple matter. The strength of 7 Gm. per 100 cc. is practically the same as 5 per cent by weight.

Syrup of Pine Tar is more easily prepared from the oil than from the Tar, and it also has a stronger flavor. The most noticeable difference will be in the color, which can, if desired, be regulated by the use of caramel.

A general policy of making clear syrups is the reason for clarifying the syrups of orange, squill compound, and senna.

The changes in the other syrups are in procedure rather than in formula, since the products are practically the same as in the preceding Pharmacopœia.

No important change was made in the Spirits. The formula for Spirit of Ethyl Nitrite was deleted because this is now usually prepared from the concentrated ethyl nitrite. The commercial standards for the latter are not uniform, and since there are advantages in both the stronger and weaker types, it was thought best to leave the choice to the pharmacist and simply standardize the official Spirit. This leaves the method of preparing it entirely to the pharmacist, with no restrictions beyond the quality and strength demanded in the product.

REPORT OF THE SUB-COMMITTEE ON CERATES, OINTMENTS AND MISCELLANEOUS GALENICALS.

BY JACOB DINER, CHAIRMAN.

The principal changes made by this Sub-committee were as follows:

A change in ointment bases: The general principle was to use Wool Fat, in part or wholly, where prompt absorption of the medicinal substance was desired and Petrolatum, to the greater extent, where local effect only was to be obtained. Some changes, such as in Ointment of Belladonna, were based on pharmaceutical expediency to increase the keeping quality and to yield a smoother product, the ointment, however, having been demonstrated to have proper therapeutic action.

Changes in Glycerites: The late Dr. Francis pointed out that commercial glycerin contains small quantities of iron which tends to darken the color of the glycerites. The addition of 1 per cent of sodium citrate prevents this and does not alter the therapeutic effect of the preparation.

Infusion Digitalis: In this infusion the digitalis is directed in fine powder, which should be about the former No. 60. This was found desirable to insure uniformity of strength, since the former directions to use a bruised leaf frequently resulted in the pharmacist selecting a drug from the top of the can or bottle which was likely to consist largely of stems and veins, the softer sections of the leaf having broken away and sifted to the bottom of the container. This is largely avoided by directing the drug to be in powder. A very fine powder, however, should be avoided, as it renders the filtration difficult. It is very important that the digitalis used for infusions should be a physiologically standardized leaf if the infusion is to be reliable. The amount of boiling water used has been increased from 500 cc. to 700 cc. that there might be greater solvent action and the heat retained for a longer time. Alcohol has again been added as in older Pharmacopœias, as there was much complaint concerning its keeping qualities, even when freshly made as directed. The need for this has often been disputed but in practice the pharmacists believe it desirable. Recently attention has been called to the preparation of Infusion of Digitalis from commercial tinctures with disastrous results. There should be no need to caution trained pharmacists against such procedure.

Weight vs. volume: Some preparations, previously made by weight, were changed to volume where the change of concentration did not materially alter the efficiency of the product.

REPORT OF THE SUB-COMMITTEE ON TABLES, WEIGHTS AND MEASURES.

BY THEODORE J. BRADLEY, CHAIRMAN.

The United States Pharmacopœia contains many more pages of tables than most of the other world pharmacopœias and it was decided that these pages should be reduced. It was found,

however, that it was easy to avoid increasing the number of pages of tables, but it was difficult to secure an agreement on which tables could be spared, and, in the end, only a few pages were deleted.

The long table of molecular weights is greatly increased in importance because of the omisson of molecular weights from the body of the Pharmacopœia. The molecular weights have been re-calculated from the 1921 table of the International Committee on Elements and the results checked by several members of the Sub-committee.

After considerable discussion, it was decided by a majority of the Sub-committee to use the tables of equivalents of weights and measures of the Eighth Revision of the Pharmacopœia, instead of those of the Ninth Revision.

During the progress of the work, the Sub-committee considered many suggestions regarding the tables from various interested persons. Several of these suggestions were adopted and incorporated into the tables, but others represented individual points of view and were not of sufficient general interest to deserve adoption.

Members of the Sub-committee have been uniformly willing to perform the tedious work on these tables and we hope that the results will add to the value of the new Pharmacopœia.

REPORT OF THE SUB-COMMITTEE ON NOMENCLATURE.

BY A. G. DUMEZ, CHAIRMAN.

The Sub-committee on Nomenclature began its work in June 1920. At the very outset, it formulated and adopted a set of general rules to be used as a guide in reaching its decisions. The rules as finally adopted follow:

(1) For the arrangement of Latin and English titles, synonyms and abbreviations, the general style of the present Pharmacopœia (U. S. P. IX) shall be followed.

(2) Changes in titles and articles official in the U. S. P. IX shall be made only for the purpose of insuring greater accuracy, brevity or safety in dispensing.

(3) In the case of newly admitted articles, titles shall be chosen which are convenient for prescribing and which will harmonize with general usage as far as practicable. In every instance, where usage permits, a Latin title shall be selected.

A total of forty-seven changes were made in Latin titles and forty-six changes in English titles, besides a number of changes in synonyms. In addition Latin and English titles, synonyms and abbreviations were selected for forty new articles. In all of these changes and selections, the above rules were closely adhered to, although this might not be apparent in all cases. It should, however, be borne in mind that the Sub-committee was limited in the selections of a title in many cases by the fact that the most suitable titles were already the property of manufacturers and could not, therefore, be used by the Pharmacopœia.

Changes in titles previously official were made only after the most careful consideration of the available data and comments offered and it is believed that these changes will meet with general approval. The following are some of the more important changes made, together with the reasons for making them:

Cinchophenum for Acidum Phenylcinchoninicum: This change was made because the experience showed that physicians preferred shorter titles when they were available.

Tolu for Balsamum Tolutanum: The Sub-committee was induced to make this change because the substance itself is usually referred to as Tolu and the two most commonly used preparations made from it are generally referred to as Syrup of Tolu and Tincture of Tolu, respectively.

Glusidum for Benzosulphinidum: A change in this title was deemed to be necessary because of its length. Glusidum was selected because it is short, euphonious and is the title official in the British Pharmacopœia. The title Sodii Benzosulphinidum was changed for the same reason.

Eucainæ Hydrochloridum for Betaeucainæ Hydrochloridum: The beta compound is the only one used in the practice of medicine, hence the prefix beta was thought to be superfluous.

Chloralis Hydras for Chloralum Hydratum: This change was made for the sake of bringing about greater uniformity. The title Terpini Hydras was already in the Pharmacopœia. In both cases the water is chemically combined, so that is was thought that there was no good reason why the Pharmacopœia should not use the same form of title for the two compounds.

Cinchona for Cinchona Rubra: A change in this title was necessary since it was decided to recognize both the red and yellow barks under one title. This condition is also responsible for including the synonyms in the body of the monograph.

Emplastrum Adhæsivum for Emplastrum Elasticum: It was the opinion of the Committee that "Elastica" was not a very good choice as a Latin title for rubber and, inasmuch as the plaster is generally called Adhesive Plaster rather than Rubber Plaster, the change was decided upon.

Emplastrum Plumbi Oleatis for Emplastrum Plumbi: It was decided to change the title of Unguentum Diachylon to Unguentum Plumbi Oleatis because Diachylon, which means plant juices, was not descriptive of the ointment as it is composed to-day. For the sake of uniformity, it was, therefore, necessary to make a similar change in the title of the plaster.

Ferri Phosphas Solubilis for Ferri Phosphas: The fact that this iron preparation is not the phosphate, but a mixture of the phosphate and sodium citrate made the U. S. P. IX title incorrect. The title was, therefore, changed for the sake of greater accuracy.

Methenamina for Hexamethylenamina: The purpose of making this change was to induce physicians to use the official title in prescribing this substance. It is the best the Sub-committee could do in view of the fact that there are already some twenty-odd proprietary names for this article.

Pituitarium for Hypophysis Sicca: The Sub-committee was influenced in making this change by the fact that the article is commonly referred to in this country as the pituitary or the Pituitary Gland, and the solution is generally called Pituitary Extract. It seemed superfluous to qualify Pituitary by the adjective Sicca as we do not write "Digitalis Sicca." The adjective was, therefore, dropped, and this was also done in the case of Thyrodeum.

Opii Pulveratum for Opii Pulvis: This change was made to bring the title into conformity with Opii Granulatum, the U. S. P. IX title for Granulated Opium.

Pilulæ Hydrargyri Chloridi Mitis Compositæ for Pilulæ Catharticæ Compositæ: The purpose of this change was to eliminate from the title the suggestion relative to therapeutic use. The old title was objected to by physicians on these grounds. While the new title is more cumbersome than the old, it offered the best solution of the problem that came to the Sub-committee.

Pix Pini for Pix Liquida: Greater accuracy in describing the product was the purpose of this change. The official article is Pine Tar.

Plumbi Monoxidum for Plumbi Oxidum: Red Oxide of Lead is official in the National Formulary. The change in title was made to guard against confusion with the N. F. oxide. The title Yellow Oxide could not be used since litharge is not always yellow. Messicot is the yellow oxide.

Rosa for Rosa Gallica: As only the red rose is official, the Sub-committee decided that title could be shortened to advantage by dropping the adjective.

Sucrosum for Saccharum: There are so many sugars known to-day, that greater specificity with respect to the title appeared to be desirable. Chemists now use the term sucrose to designate the official product. The Sub-committee, therefore, selected it for the English title and Latinized it by adding -um. The change in the title for sugar of milk was made for the same reason.

Antitoxinum Diphthericum for Serum Antidiphthericum Purificatum: This change was made to bring the title into conformity with the more generally used English titles. The changes in the titles Serum Antitetanicum and Virus Vaccinicum were made for the same reason.

Spiritus Æthylis Nitritis for Spiritus Ætheris Nitrosi: Chemists in general now use the title Ethyl Nitrite instead of Nitrous Ether for the active constituent of this spirit. The term Ether is now used only to designate compounds of the general formula R_2O. It is for this reason that the change in title was made.

Tinctura Belladonnæ for Tinctura Belladonnæ Foliorum: The Sub-committee decided, that where there was only one preparation of a type made from a vegetable drug, it was unnecessary to specify the part of the plant used. Hence Foliorum was dropped. For the same reason Seminis was deleted from the title Tinctura Colchici Seminis. The object which the Sub-committee had in view was that of simplifying titles wherever possible in order to facilitate their use by physicians.

Unguentum Hydrargyri Fortius for Unguentum Hydrargyri: The adjective Fortius was added to the title to prevent confusion with the weaker ointment. As an additional safeguard the adjective Mite was added to the title for the latter.

A few changes were made in the English titles and not in the Latin titles.

In the case of Calx, the English title in the U. S. P. IX was Calcium Oxide. This was changed to Lime because the Official English title for Calx Chlorinata was Chlorinated Lime and no suitable title could be found for the latter which would conform to Calcium Oxide.

Copper Sulphate was changed to Cupric Sulphate which is the correct chemical name for this compound and to avoid confusion with the cuprous salt.

Aloes was changed to the singular Aloe, because a plural title seemed out of place for a type of substance which is usually in the singular. For instance, we speak of the juice of the milk weed and not the juices.

Considerable difficulty was experienced in the selection of Latin titles for some of the newly admitted articles.

Where these articles were chemical compounds, the rule followed was to take the chemical name as the official English title and latinize this by adding the proper ending. This was done in the case of Acetylsalicylic Acid, Acetyltannic Acid, Albumin Tannate, Ethyl Aminobenzoate, Ethyl Chaulmoograte, Barium Sulphate, Calcium Iodobehenate, Carbon Tetrachloride, Dextrose, Epinephrine, Phenolsulphenphthalein, Quinidine Sulphate, Quinine Ethylcarbonate, Sodium Bisphosphate and Thyroxin.

Where the chemical name was too lengthy or where the articles were not fairly well defined chemical compounds, the procedure was not so simple. In these cases non-protected abbreviated titles already in use were selected or new titles were coined. The coining of new names was avoided as far as possible, as the Sub-committee did not wish to add to the confusion in titles already existing in many instances.

As examples of the first class, we have the titles Amidopyrine, Arsphenamine, Barbital, Carbromal, Chloramine, Dichloramine, Neoarsphenamine, Phenobarbital and Procaine Hydrochloride.

Strong Silver-Protein, Mild Silver-Protein, Soluble Barbital, and Chlorinated Paraffin are examples of the second class.

In the case of the newly admitted vegetable drugs, Ipomœa, Krameria and Rhus Glabra, the titles were taken from the recognized botanical names.

Little difficulty was encountered in the selection of titles for the galenical preparations, except in the case of the modified Dakin's Solution, where it became necessary to distinguish between it and a similar preparation already official. This difficulty was finally overcome by adding the adjective, surgical, making the Latin title **Liquor Sodæ Chlorinatæ Chirurgicalis.**

A. PH. A. PAPERS OF 1875.

The *Chemist and Druggist*, in a recent issue, reprints part of its report of the A. PH. A. Convention of 1875. All of the contributors referred to have ceased their labors.

"A paper by John F. Hancock, of Baltimore, was read in answer to the following query: 'Chlorodyne is frequently prescribed by physicians, and seems to be a useful preparation in many cases; give a formula for it which would be suitable for introduction into the U. S. Pharmacopœia.' The writer recommended the formula published by Squire.

"Mr. Maisch answered to the query: 'Is *artanthe elongata* really the true source of the matico plant; if not, what plant furnishes the drug?' The writer stated that the term matico was applied in South America to a number of different plants which possessed vulnerary properties; but he believed the above plant yielded the bulk of matico in commerce.

"In answer to the query, 'Rhubarb has of late been much damaged by insect pests; does the rhubarb as shipped in China contain the insect, or does it become infested after arrival in Europe and America?' William Saunders, of London, Canada, stated that he reared specimens of the insect through the different stages. He had supposed it was the moth common in drug stores, but found it to be a different species, new to him.

"A paper in answer to the following query was read by Prof. Emil Scheffer: 'Is pancreatin converted into pepton when it is digested with acidulated pepsin?' The writer was enabled by his experiments to assert positively that pancreatin when brought into the stomach became destroyed, and that it therefore could have neither physiological nor therapeutic effect when administered internally."