he contributed liberally to its reports and it was largely due to his energy and efforts that the Committee was continued. The speaker moved that a brief statement outlining the work of Professor Patch be included in the report of this year. The motion was seconded and carried.

The report of the Committee on the Chairman's Address was called for; First Vice-Chairman F. F. Berg assumed the Chair. Chairman Robert J. Ruth of the Committee made a verbal report, recommending the acceptance of the recommendations of Chairman J. P. Snyder. E. V. Howell seconded the recommendation.—The motion was carried.

Election of officers was proceeded with; Arno Viehoever moved that the Chairman of the Committee on Nominations cast an affirmative ballot for the nominees; the motion was seconded and carried.

The officers were duly installed and each expressed appreciation for the preferment. A vote of thanks was given retiring Chairman J. P. Snyder. The final session of the Scientific Section was then adjourned to convene at the next annual meeting of the American Pharmaceutical Association.

JOINT SESSION OF THE SCIENTIFIC SECTION AND THE SECTION ON PRACTICAL PHARMACY AND DISPENSING.

The joint session of the Scientific Section and the Section on Practical Pharmacy and Dispensing was convened by Chairman J. P. Snyder of the Scientific Section at 8:00 P.M., Thursday, August 28, who stated that the purpose of the meeting was to listen to, receive the reports on and discuss the revisions of the U. S. Pharmacopœia and National Formulary. The following report was presented:

SOME FEATURES OF THE FORTHCOMING PHARMACOPŒIA (TENTH REVISION).

BY E. FULLERTON COOK.

As the time is not far distant when the U. S. Pharmacopœia, Tenth Revision, is expected to make its appearance, it is fitting that a review of its salient features should be placed before this Association, which has always contributed so largely to its development and success.

The Chairman of the Committee of Revision has recently completed a review of much of the Pharmacopœial literature of the past century and is impressed anew by the immense amount of labor and the untiring and unselfish service entering into the creation of our present National standard for medicines. The Tenth Revision has been builded upon the visions and ideals of a group of physicians and pharmacists whose names must not be forgotten. The book to-day stands as an enduring monument to the memory of Dr. Lyman Spalding, Dr. Franklin Bache, Dr. George B. Wood, Dr. Joseph Carson, Dr. Robert Bridges, Alfred B. Taylor, William Procter, Jr., George D. Goggeshall, Dr. E. R. Squibb, C. Lewis Diehl, William H. Thompson, Frederick B. Power, Albert B. Prescott, Joseph P. Remington, Charles Rice, John M. Maisch, Dr. Horatio C. Wood, Louis Dohme, S. A. D. Sheppard, Frederick Hoffmann, P. W. Bedford, George F. H. Markoe, Charles Caspari, Jr., Oscar Oldberg and hundreds of others who properly share the credit due from our generation.

The Pharmacopœia was started by physicians, but they early acknowledged the necessity of securing the coöperation of their pharmaceutical associates and in fact at one period pharmaceutical interests largely dominated the revision.

In the Tenth Revision this former condition has been adjusted by placing responsibility for the scope upon the 21 physicians of the Committee. They also decided doses and all therapeutic questions, so that the physicians are contributing a constructive and fundamentally important part of the revision. In many other divisions such as nomenclature, biological products and in bio-assays they are also taking an active part in the revision. More than in any previous revisions the work is being divided among specialists and each group held responsible for the decisions in its division and the several sub-committees have been strengthened by the election of sixty or more experts, serving as auxiliary members to the sub-committees.

Throughout the current revision the General Committee has been asked to vote only on general questions. All reports and discussions are placed before the General Committee and members are invited to comment freely on every proposition, and their comments are published in the Circulars, but the final decision on technical questions has remained with the groups of ex-

perts on the several sub-committees who should be best qualified to settle differences when they occur.

The selection of the therapeutically valuable substances for the new book has therefore been decided by the physician and the U. S. P., Tenth Revision, will represent a materia medica selected from the entire world, and, as only controlled products were restricted, the list of drugs, chemicals and preparations of the new Pharmacopœia should represent the most valuable medicinal agents known to the medical science of our times.

A total of about 650 articles has been admitted; among these are found some articles required only in manufacturing processes, while others represent different forms of the same remedy, so that the actual number of individual medicinal agents is much less than the total number of titles.

Admissions.—Among the titles added to the U. S. P. X are the following:

Proposed English Title.	*Similar Market Products.*
Acetylsalicylic Acid	Aspirin
Diacetyl Tannin	Tannigen
Albumin Tannate	Albutannin, Protan
Amidopyrine	Pyramidon
Strong Silver-Protein	Strong Protargin, Proganol Protargentum, Protargol
Mild Silver-Protein	Mild Protargin, Argyn Argyrol, Gargentos
Arsphenamine	Arsenobenzol, Diarsenol Salvarsan
Barbital Sodium	Sodium Diethylbarbiturate Veronal-Sodium
Barbital	Diethylbarbituric Acid
Barium Sulphate	(Purified for X-ray examinations)
Ethyl Aminobenzoate	Benzocaine, Anesthesin
Calcium Iodobehenate	Sajodin, Calioben
Carbon Tetrachloride	(Highly purified)
Carbromal	Adalin
Chloramine	Chloramine-T
Dextrose	Grape Sugar
Dichloramine	Dichloramine-T
Epinephrine	Adrenaline
Ipomoea	Replaces Scammony
Solution of Epinephrine Hydrochloride	Solution of Adrenaline Hydrochloride (1 in 1000)
Surgical Solution of Chlorinated Soda	Carrel-Dakin Solution
Neoarsphenamine	Neodiarsenol, Neosalvarsan, Neoarsenobenzol
Chaulmoogra Oil	
Chlorinated Paraffin	Chlorcosane
Phenobarbital	Phenyl-ethyl-barbituric Acid, Luminal
Phenolsulphonephthalein	Phenol Red
Procaine Hydrochloride	Novocaine
Quinidine Sulphate	
Quinine Ethylcarbonate	Euquinine
Resin of Ipomoea	Replacing Resin of Scammony
Sodium Diphosphate	Sodium Acid Phosphate, Sodium Dihydrogen Phosphate
Spiritus Frumenti	Whisky
Spiritus Vini Gallici	Brandy
Thyroxin	

Nomenclature.—The Sub-committee on Nomenclature has carefully studied all Latin and English Titles, also abbreviations and synonyms, and these have only been changed for the sake of greater scientific accuracy or for simplification.

Some modifications are indicated in the table below:

English Titles Proposed for U. S. P. X.	*U. S. P. IX English Titles.*
Diphtheria Antitoxin	Purified Antidiphtheric Serum
Tetanus Antitoxin	Purified Antitetanic Serum
Crude Tetanus Antitoxin	Antitetanic Serum
Orange Flower Water	Stronger Orange Flower Water
Tolu	Balsam of Tolu
Chloral Hydrate	Hydrated Chloral
Cinchophen	Phenylcinchoninic Acid
Eucaine Hydrochloride	Betaeucaine Hydrochloride
Gluside	Benzosulphinide
Soluble Gluside	Sodium Benzosulphinide
Lactose	Sugar of Milk
Lead Oleate Plaster	Lead Plaster
Solution of Pituitary	Solution of Hypophysis
Methenamine	Hexamethylenamine
Pituitary	Desiccated Hypophysis
Sucrose	Sugar
Sulphonal	Sulphonmethane
Trional (proposed)	Sulphonethylmethane
Mercurial Ointment (33 per cent.)	Diluted Mercurial Ointment
Stronger Mercurial Ointment (50 per cent.)	Mercurial Ointment
Ointment of Oleated Lead	Diachylon Ointment
Small Pox Vaccine	Vaccine Virus

Standardization.—The medicinal profession is asking for dependable medicines. An outstanding feature of the U. S. P. X will be its effort to provide methods for standardizing chemicals and preparations. One of the difficulties heretofore in the application of biological assays has been the variable standards used. The sub-committee has carefully defined and fixed the standard for each substance so to be assayed and the Department of Agriculture, Bureau of Chemistry, is coöperating by offering manufacturers (without cost, it is hoped) samples of the standard, conforming to the requirements of the U. S. P., these samples to be used in adjusting the activity of new lots.

This service of the Bureau of Chemistry is entirely optional but it is confidently believed that it will be taken advantage of by most manufacturing pharmacists and that in practice it will produce a degree of dependability not heretofore possible.

The opportunity and duty is before every pharmacist to supply physicians and their patients with only such official medicines as conform to Pharmacopœial standards and this means not only a careful preparation or selection of the original product but also intelligent and conscientious storage and handling while under his control.

The comparatively recent investigations into the active constituents of Cod Liver Oil have led to the suggestion that an optional assay method for determining the "Vitamin A" content be provided for the U. S. P. X.

A special committee, with Dr. John F. Anderson as the referee, is studying this question and is inclined to recommend its introduction. The adoption of an optional assay for Cod Liver Oil would have the advantage of standardizing a method, and if but a minimum standard is established, it will permit a physician to select an oil of high vitamin content when a lack of fat tolerance makes large doses objectionable. It would be required that a statement be placed on the label of any oil so assayed to the effect that "this assay does not indicate the antirachitic value." Unfortunately no practicable assay for this specific and most valuable activity of Cod Liver Oil is yet available.

Tests for Identifying Chemicals.—The details for identifying tests for many inorganic chemical substances have been placed in a special chapter in Part II and are only briefly referred to under the chemical. This feature is but an extension of the policy followed in previous revisions for special tests such as those for *arsenic* and *heavy metals*, avoiding the necessity of frequently repeating details.

Sampling Drugs.—The sub-committee on botany has recognized the necessity of standardizing "sampling methods" in the examinations of commercial drugs and when the various tests for purity or strength are to be applied, the lot must represent as nearly as practicable a fair and average sample. Limits have also been fixed in many drugs for "ash insoluble in hydrochloric acid" ("acid-insoluble ash") as a means of forcing the proper cleaning of crude drugs.

Whisky and Brandy.—The decision by the physicians of the Committee to admit these articles that they might be standardized has been widely and favorably commented upon in the press of the country.

The proposed texts will soon be published and will include tests for detecting impurities which might be present, especially for those denaturing substances authorized for use in industrial alcohols as methyl alcohol and diethylphthalate.

The proposed official requirements do not specify that Whisky must be "bottled in bond" although this is a provision of the revised "Regulation 60" of the Treasury Department.

Sub-Division of Texts.—The description and tests of chemicals and drugs in the new Pharmacopœia will be slightly different in appearance from those in the U. S. P. IX, as they will be divided with appropriate sub-titles.

"Description and physical properties," "Tests for identity," "Tests for impurities," and *"Assay"* will be those most frequently used. The accurate sub-division of monographs under such titles is, in some cases, practically impossible and often the description of color and taste is a factor in determining both identity and purity, but it is believed that this condition can be covered by a statement in the "General Standards." The sub-division is only for convenience and in no degree releases the manufacturer or dealer from any of the requirements of the text.

General Standards.—For several revisions important general standards have been placed in that part of the Pharmacopœia which precedes "Part I" and the heading "Introductory Notices." It is proposed to place these statements in Part I, of the U. S. P. X, under the heading "General Standards," and have them precede the monographs.

This place will emphasize their importance and give them prominence.

Changes in Preparations.—It will be of interest to many to know that but one *Tincture* of *Opium* will be official and that made from opium deodorized by the paraffin process.

Chalk Mixture is to be made directly from prepared chalk with 10 per cent. glycerin and sufficient cinnamon water and water. The sugar and acacia are to be omitted. *Compound Chalk Powder* will remain official, however, for those physicians who care to use it in powders or mixtures.

The title *Cinchona* will include "Yellow" and "Red" cinchona and the compound tincture will no longer specify the Red variety.

The Tincture and Oleoresin of Capsicum will include an organoleptic test in which 5 cc. of a sweetened, aqueous solution, representing about 1 part of the drug in 7000 parts of liquid (about 1/100 grain of capsicum), "should produce a distinct sensation of pungency and the taste of capsicum in the mouth and throat."

Proofs.—Galley proofs of the new Pharmacopœia are now being issued to members of the Committee of Revision and Board of Trustees and will continue regularly, at the rate of about 25 pages a week; when the entire manuscript has appeared in "galley," "page proofs" will be sent to the Committee and Board and also to a limited number of qualified proof readers, not members of the Committee, and the first printing will be in sufficient quantity to meet the immediate demands.

The Spanish Translation.—Arrangements have been completed for translating and printing the Spanish edition and as soon as page proofs are available this will be started that the new revision may be immediately available in Latin-American Countries.

In presenting this brief review of the forthcoming Pharmacopœia the immense mass of available material renders it difficult to know what will be of greatest general interest. Pages could be written of the changes in the chemical texts alone or the field of vegetable drugs, where the sub-committee discussions, more than 1500 typewritten pages, could occupy all of the time, but, outstanding features have been brought to your attention and any one who is interested in a specific field may obtain upon application a copy of the published "Abstract of Proposed Changes and New Texts."

Chairman Cook spoke of the Chinese edition of the U. S. Pharmacopœia. See pp. 662–663, July JOURNAL A. PH. A.

Dr. I. M. Kolthoff said the Pharmacopœia of the Netherlands was being revised very much along the lines of the U. S. Pharmacopœia.

Chairman Ruth of the Section on Practical Pharmacy and Dispensing presided during the discussion of the report of the Committee on National Formulary by Chairman W. L. Scoville. See report and abstract of discussion in October JOUR. A. PH. A., pp. 972–974.

After the discussion of the report on the National Formulary, Chairman J. P. Snyder resumed the chair. He introduced Dr. J. C. Munch as the next speaker.

BIOASSAY STANDARDS.

BY J. C. MUNCH.*

The variation in strength of pharmaceutical preparations on the market is uniformly recognized as undesirable and, in many instances, as dangerous. Much effort has been directed toward reducing this variation. Most manufacturers are attempting to produce pharmaceutical preparations in compliance with definite specifications, both qualitatively and quantitatively. The various steps in manufacturing processes and the factors affecting subsequent deterioration have been closely studied. More uniformity has been obtained where accurate methods of assay are available, such as those used in testing strychnine preparations, than in connection with preparations for which no definite assay methods have been worked out.

Chemical methods of assay have been worked out, tested and adopted, for a number of drugs and their preparations. For a group of products, however, chemical assays are not at present feasible. The active principle (or principles) of such products may be unknown, or it may not be possible by present methods chemically to separate their physiologically active constituents. Included in this group are some of the most-used drugs, such as digitalis and pituitary extract. Their clinical importance has led to extensive investigation of means of assay, and in assaying certain of these drugs the reactions of animals have been utilized.

The necessity for providing adequate assay methods in order to reduce variability to commercially feasible limits has been under consideration by several pharmacopœial revision committees. The Committee of 1890 reported (Preface, U. S. P., 7th Revision, 1890, p. XXIX):

> "Among the subjects brought prominently to the attention of the Convention of 1890 was the establishment of a fixed proportion, or of fixed limits, of the active principles in preparations made from the more energetic drugs capable of being assayed. * * * the Convention finally decided to refer the introduction of assay processes and of so-called standardized preparations to the discretion of the Committee. The Sub-Committee, which was subsequently appointed to take charge of this work, * * * finally came to the unanimous conclusion that reliable methods of assay * * * are available at the present time, for only a few drugs. * * * after a careful study of the subject, it was resolved to apply processes of assay, in this revision, only to cinchona, Nux Vomica, and Opium. * * * There is a fair prospect, however, that a further, extensive study of the problem will render it possible to increase the number of assayed preparations materially at the next revision."

The following statement was made in the "Abstract of the Proceedings of the National Convention of 1900," U. S. P., 8th Revision, 1900, page XXXI:

> "4. *Assay Processes.* The Committee is instructed to append assay processes to as many of the potent drugs and preparations made therefrom as may be found possible, provided that the processes of assay are reasonably simple (both as to methods and apparatus required) and lead to fairly uniform results in different hands. As regards the products of such assays, tests of identity and purity should be added wherever feasible. Physiological tests for determining strength should not be introduced by the Committee."

In the "Abstract of the Proceedings of the Ninth Decennial Convention, 1910," U. S. P., 9th Revision, page XXXIII, the following recommendation occurs:

> "10. *Assay Processes.* * * * it is recommended that biological tests or assays, when accurate and reliable, may be admitted."

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* Bureau of Chemistry, U. S. Dept. of Agriculture.