RESPONSIBILITIES AND EDUCATIONAL BACKGROUND OF THE PHARMACIST.

RADIO BROADCAST FOR NATIONAL PHARMACY WEEK.

BY A. G. DUMEZ.[1]

As just stated by the announcer, this broadcast is the beginning of the program for the annual observance of National Pharmacy Week, a week set aside by the pharmacists of this country in which a united effort is made by them to acquaint the public with the ways in which Pharmacy serves the community and with the responsibilities which this entails.

The observance of National Pharmacy Week, begun fifteen years ago, is now so well established and its importance as a factor in stimulating an interest in public health activities is so widely recognized, that it has become the custom for the President of the United States, himself, to issue a public statement calling attention to the approach of this event and to its significance. In a statement issued on September 25th of this year, the President wrote: (See page 563, September JOURNAL.)

As my contribution to the program for the observance of this week, I shall endeavor to tell you something of the responsibilities and educational background of that unassuming person, who stands behind his counter ready and eager to serve you, whether you desire to have a prescription compounded, to purchase some simple family remedy or, perhaps, only a postage stamp, and who you call your pharmacist.

Herbert Spencer, in his essay on education, makes use of the following statement which he attributes to an unnamed writer: "The first requisite to success is to be a good animal," and he adds: "To be a nation of good animals is the first condition to national prosperity."

A sound body is generally recognized as an essential factor in making for success. Without a sound body, man is handicapped, not only in the achievement of success in his calling, but also in the attainment of a full measure of happiness and comfort in living. The condition of our bodies is, therefore, of vital concern to all of us.

Pharmacy is one of the several professions, the practitioners of which consecrate their lives to the service of helping us to maintain sound bodies. Legally and morally, the pharmacist's responsibilities are as great as those of the physician. notwithstanding the fact that economic necessity and public demand generally compel him to conduct a commercial emporium in conjunction with the practice of his profession.

The practice of pharmacy, considered strictly from the standpoint of professional service, comprises all of the processes and operations involved in the selection and identification of drugs and chemicals, their manipulation or combination into forms suitable for administration to man or animals and the proper labeling of the finished product. This service, commonly referred to as the filling of prescriptions, requires a broad knowledge of the properties of the materials handled, accuracy and skill, and is undoubtedly the most important of the several services rendered by the pharmacist.

---

[1] President of THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Considered from a broader standpoint, the practice of pharmacy comprehends all of the related services now offered by the average drug store, the most important of which are the administration of first aid in cases of injury due to accident and the giving of information and advice upon matters pertaining to public health. With respect to the latter service, the report of a study of the activities and duties of the pharmacist financed by a grant from the Commonwealth Fund and directed by Dr. W. W. Charters of the University of Pittsburgh, carries the following pertinent statement: "The pharmacists are more strategically situated than any other group of individuals to give personal advice upon matters of public health on which they are informed." This service is given free of charge and can be obtained within easy walking distance from your home or place of business. The materials which may be needed to make use of this information or advice are kept in stock and can be obtained promptly. Here again, a broad knowledge of the subject is required and accuracy and good judgment are essential.

The responsibilities of the pharmacist are many and not all of them are easy to bear. He is legally accountable for any deviation from standard in the quality of the drugs and medicines which he sells over the counter or dispenses on prescriptions, for neglect to register the sales of poisons, for failure to comply with the law in the sale of habit-forming drugs such as the narcotics and certain hypnotics, for dispensing drugs or medicines which are not the same in all respects as those ordered by the physician, for mistakes made in the filling of prescriptions, for inaccuracies in dosage and for the improper labeling of drugs and medicines. In most of the states, he must have on file in his store the latest revised editions of the two official standards for drugs and medicines, the United States Pharmacopœia and the National Formulary, and it follows as a logical sequence that he must be equipped with the proper pharmaceutical utensils to enable him to compound the preparations contained in these two books of standards and to fill prescriptions properly.

Some of the foregoing carry a moral as well as a legal responsibility, but the pharmacist is also morally answerable for the sale of certain drugs and medicines for improper use, for raising false hopes in the minds of the sick by recommending the purchase of medicines for the cure of diseases which are known to be incurable, for giving false information with regard to the value of a drug or medicine as a remedy in order to make a sale, for failure to supply the poor with drugs and medicines when needed for immediate use, even though they cannot pay for them, for the injury to character which may result from divulging information with regard to the purchases made by his customers, and for many other acts of both, commission and omission.

Because of the importance of the pharmaceutical services heretofore mentioned as a factor in the maintenance of the health of the public and because of the legal and moral responsibilities involved, it follows that pharmacists must have a special kind of education and training to fit them to give these services and to assume their responsibilities. As a matter of fact, the necessity for some official requirement covering this point is recognized as so essential that all of the various states have made provision for it in the regulatory laws which they have enacted.

Every state in the Union has on its statute books laws regulating the practice of pharmacy. All of these laws require that applicants for a license to practice pharmacy must pass a satisfactory examination given by a board of pharmaceutical

examiners and most of them require graduation from high school and an approved college of pharmacy before the applicants are eligible to take this examination. In addition, the laws of the states, with one or two exceptions, require that the applicants before presenting themselves for examination shall furnish evidence of having had one to four years of experience in a pharmacy where physicians' prescriptions are regularly compounded.

The subjects covered in the examinations given by the examining boards of the different states are not identical in all cases, but embrace, as a general rule, Theoretical Pharmacy, Practical Pharmacy, Dispensing, Pharmaceutical Mathematics, Pharmaceutical Chemistry, Pharmaceutical Botany, Materia Medica or Pharmacology, Posology, Toxicology and Therapeutics, Serology and Immunology and Pharmaceutical Law; all of which subjects apply more or less directly to the every day work of the pharmacist, the object of the boards of examiners being to determine the fitness of applicants for licensure to practice pharmacy. Students beginning the study of Pharmacy, however, must take certain foundational courses to prepare them to undertake the study of these applied subjects, *e. g.*, General Chemistry, Qualitative and Quantitative Analysis, Physics, Biology, Physiology and Mathematics (Algebra and Trigonometry).

To furnish the kind of education needed to prepare pharmacists to give the service which the public expects of them and to meet their legal and moral responsibilities, there are sixty-eight colleges of pharmacy now operating throughout the various states. Fifty-three of these are integral parts of universities, most of which are state universities, four have university affiliations and eleven operate independently. All of these colleges require the completion of a minimum of four years of college work for graduation, including, in addition to the subjects already enumerated, courses in the cultural subjects, Economics, Public Health and a variety of other subjects intended to fit the student to render the many non-professional services expected of the pharmacist and to prepare him to take his proper place in the life of the community.

To make certain that every college will give at least the minimum amount of instruction necessary for a thorough understanding of the essential subjects and to provide for greater uniformity in the pharmacy curricula in other respects, there was created in 1906 the National Pharmaceutical Syllabus Committee. The duties of this committee are to fix the content and scope of the pharmacy curriculum and to outline the work to be given in each of the thirty-five or more subjects comprising it. To provide for the maintenance of proper standards in laboratory and classroom instruction, there has been set up still another supervisory committee. This committee is known as The American Council on Pharmaceutical Education. For the first four years of its existence, the Council worked on the preparation of standards which an acceptable college of pharmacy might reasonably be expected to meet. Since the completion of this task about a year and a half ago, the Council has functioned as an accrediting agency and is now engaged in inspecting the colleges to determine which ones meet these standards and, therefore, merit accreditment.

In view of what has already been accomplished in building and maintaining a proper educational background for the pharmacist, it is believed that you will agree with me when I assert that Pharmacy has recognized its responsibility in this re-

gard, that its practitioners are fully qualified from the standpoint of education and training to assume the responsibilities placed upon them and to give the high-type of professional service which you have the right to expect of them, and that they are, therefore, deserving of your confidence and trust.

A. G. DuMez,
President.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. PROGRAM OF SECTION ON PHARMACY.

DESHLER-WALLICK HOTEL, COLUMBUS, O.

Wednesday, December 27, 10:30 A.M.

1. The Chemistry of the Viburnums, Justin L. Powers, University of Michigan.
2. Methenamine Mandelate: Preparation, Toxicity and Antiseptic Value, Glenn L. Jenkins, University of Minnesota.
3. The Bioassay of Aconite, B. V. Christensen and J. W. Nelson, Ohio State University.
4. The Use of Oral Vaccine in the Prophylaxis of the Common Cold, Leonard J. Piccoli, Fordham University.
5. Solanum Carolinense, R. L. Murray, Ohio State University.

Wednesday, December 27, 2:30 P.M.

6. A Method for the Determination of Peptic Activity, Carl J. Klemme and Lee F. Worrell, Purdue University.
7. Employee Predictive Tests, C. M. Brown, Ohio State University.
8. The Pharmacology of Soaps, Leroy D. Edwards, Western Reserve University.
9. A Criterion for Distinguishing between Virgin and Parous Animals, Richard A. Deno, Rutgers University.
10. The Uterine Sedative Action of Viburnums, James C. Munch.

GLENN L. JENKINS, *Chairman Program Committee.*

GOLDEN GATE DENTAL CONGRESS.

This Congress was held at the Fairmount Hotel, San Francisco, Calif., September 25–28, 1939. Prof. T. C. Daniels, Assistant Dean, College of Pharmacy, University of California, addressed the Scientific Section of the Congress on the subject of "Practical Aspects of Dental Pharmacy."

At the request of the officials of the Congress, the A. PH. A. supplied material for a dental exhibit through the coöperation of Dr. George C. Schicks, Chairman of the A. PH. A. Committee on Dental Pharmacy. Copies of "Notes for the Dentist on Official Medication," were furnished for distribution.

INFORMATIVE STATEMENT ABOUT THE U. S. PHARMACOPŒIA.*

The nine years of the decade which will close in May 1940 have probably been the most important period in the history of the Pharmacopœia. Medical and pharmaceutical progress has been more rapid and has brought about more important changes in medication than in any preceding decade. In addition, the enactment of the new Federal Food, Drug and Cosmetic Act has brought many additional and exacting problems to the Pharmacopœia which require prompt and accurate solution if the Pharmacopœia is to maintain its present recognition under that legislation and under similar legislation by the states. Furthermore, the financial outlay necessary to meet the usual as well as these added responsibilities of the Pharmacopœia has been greater than in any preceding decade and this has required careful supervision of income and disbursements.

In recent decades, the Committee of Revision was practically inactive after the Pharmacopœia was issued and the expenses of revision during the latter half of the decades were very greatly reduced. However, the conditions referred to above have led to a policy of continuous revision of the Pharmacopœia which in turn has required the issuance of a First Supplement in 1937 and of a Second Supplement in 1939 to the original U. S. P. XI, which was issued in 1936. In other words, the Pharmacopœia of 1939 consists of three volumes instead of one volume as heretofore, and since the present Committee of Revision plans to present the practically completed manuscript of the U. S. P. XII to the U. S. P. Convention in May 1940, it will have prepared the manuscript of two full editions of the Pharmacopœia in one decade.

In view of these unusual developments, the Board of Trustees is issuing as a preliminary report the following general statement of progress, including the accompanying financial statement, both of which cover the operations of the first nine years of the decade. These statements are being sent to the members of the 1930 Convention, to the delegates to the 1940 Convention as they are appointed, to the medical and pharmaceutical press, and to others interested in Pharmacopœial revision and management, in the hope that they will be informative and helpful to all concerned.

How to keep Pharmacopœial revision fully abreast of medical progress and at the same time fully responsive to the increased responsibilities placed upon it by food, drug and cosmetic legislation, is one of the important problems before the Pharmacopœia. Whether Supplements are the best means of keeping revision up-to-date or whether some other method is more suitable, is to be determined. The 1930 Convention authorized the issuance of Supplements and this method has been followed during the decade.

The Pharmacopœia and the Public.—The original purpose of the Pharmacopœia was to serve the professions of medicine and pharmacy. With its recognition under the Food and Drugs Act, its purpose was broadened to include service to

---

* Issued by the U. S. Pharmacopœial Board of Trustees.

Walter A. Bastedo, M.D.

S. Solis Cohen, M.D.	E. F. Kelly, Phar.D.
E. Fullerton Cook, Ph.M.	Robert L. Swain, Ph.M.
James H. Beal, Sc.D., *Chairman*	Samuel C. Henry, Ph.M., *Secretary*

the public in providing standards which would protect the people in the purchase and use of the drugs and medicines which they required. The protection of the consuming public in its field has become a responsibility of the Pharmacopœia, and those who direct its revision and management have tried to discharge this responsibility by working in close coöperation with the authorities charged with law enforcement, federal, state and local.

The Pharmacopœia, the Physician and the Pharmacist.—The value of the Pharmacopœia from the point of view of the physician and the pharmacist rests largely upon its official list of medicinal products. The Pharmacopœia of to-day, under the leadership of the Sub-Committee on Scope, has endeavored to provide a selected list of medicines for the use of prescribers and dispensers which includes the most important therapeutic agents available and adequate for necessary medical needs. Some medicinal agents of first importance are under proprietary control and are therefore not available for U. S. P. recognition. The plan approved by the Convention in 1930, providing that decisions of the Sub-Committee on Scope could be changed only by a two-thirds vote of the entire Committee of Revision, of which 17 out of 50 members are physicians, has been carried out. This plan contemplated that decisions as to the admissions and deletions of therapeutically active substances should be under the control of the medical members of the Committee of Revision.

The Pharmacopœia is increasingly providing the necessary armamentarium for the practice of medicine and this service has been notably increased by the issuance of Supplements and Interim Revisions. The introduction of an additional method for careful selection of the list of official medicines has been made possible by two recent Pharmacopœial developments. Recommendations concerning the most valuable therapeutic agents available for treating the diseases under consideration are being obtained from outstanding clinicians in every field of medical practice and when these specialists recommend medicinal substances not already recognized, these are reviewed for possible Pharmacopœial acceptance. To insure correct decisions in the final selection, each new item is having consideration in the light of current medical literature and an abstract of clinical evidence will be made available for the Sub-Committee on Scope before the final votes on admissions and deletions for the next Pharmacopœia are taken.

The U. S. P., the N. F. and the Enforcement Officials.—When the first Food and Drugs Act was passed by Congress in 1906, only a few established standards for foods were available, but in the field of therapeutics, the Pharmacopœia had already been in existence for almost one hundred years and the National Formulary for about twenty years. These books were so well established that they were recognized as standards under the federal and state acts.

Fortunately these books have been so efficiently revised and so professionally controlled that they have increasingly established their qualifications and were again recognized under the 1938 Federal Food, Drug and Cosmetic Act. Under this legislation, their responsibility has been greatly increased and close affiliation with enforcement officials has been made progressively more important.

The Pharmacopœia, as will be indicated later, is receiving valuable assistance from the technical experts and enforcement officials of the Government in solving the many intricate and difficult problems of revision and in accordance with a fully

established policy, the Committees of Revision of the U. S. P. XI and N. F. VI have maintained an effective plan of coöperation. The Chairman of the U. S. P. Committee was made an Associate Member of the N. F. Committee and he has attended every meeting of the N. F. Committee and received all communications. Likewise, the Chairman of the N. F. Committee, being a member of the U. S. P. Committee of Revision, has received all U. S. P. Circulars. Furthermore, the two chairmen, during the time when the two books were in press, held a number of conferences and corresponded continuously with the object that the two books would be in harmony.

Process of Revision.—As is provided in the Constitution and By-Laws of the Convention, the responsibility of revising the Pharmacopœia rests on the Committee of Revision, consisting of fifty members, with the President of the Convention, who has always been a physician, as an ex-officio member. In this capacity the President has always had a vote and the status of other members. Seventeen of the Committee are physicians and the other thirty-three members include pharmacists and the specialists whose services are required in order to deal effectively with the many problems of revision.

The Committee of Revision in turn elects its General Chairman, Vice-Chairmen and Secretary, and an Executive Committee of Revision. In this decade, the members of the Executive Committee have been the chairmen of the fifteen Sub-Committees. In addition, each Sub-Committee may select auxiliary members and this plan brings into the program of revision many able workers on special problems. The recommendations of each Sub-Committee are submitted to the full committee for final consideration and decision.

Two meetings of the general committee and one special meeting of the Executive Committee have been held during the nine-year period. Several Sub-Committees have held extra conferences, notably the Sub-Committees on Scope, on Inorganic Chemicals, on Organic Chemicals and on Reagents and Test Solutions. These Sub-Committees are mentioned because the first named is interested in almost every monograph and the others deal with the chemical monographs, of which there are nearly three hundred in the Eleventh Revision of the Pharmacopœia.

Extensive experimental procedures have been carried out under the supervision of Sub-Committee Chairmen in all of these fields, for the establishment of the standards of the U. S. P. XI. To illustrate, comprehensive studies are being made to improve the assay methods for Digitalis, Posterior Pituitary and Ergot, and other assay procedures are under investigation for determining the value of Aloe and Capsicum.

For proper organization each Sub-Committee operates under the direction of its Chairman. In its bulletins will be found the proposals, discussions and decisions of the Sub-Committee with respect to all monographs for which it is responsible. In the Sub-Committees where the greatest work is concentrated, the Chairman, besides directing the program, often carries out studies with the aid of a technical assistant, and he or the institution with which he is affiliated usually offers without charge the laboratory and other facilities necessary for carrying out the investigations. This policy has brought to the Pharmacopœia the free use of some of the best-equipped and most adequate laboratory facilities in the country, as well as the voluntary direction of experts and specialists in each division of

Pharmacopœial activity. The fifty-one members of the Committee of Revision were selected by the 1930 Convention to insure that able and interested workers would be secured and that experts in every phase of revision work would be included. The results of the work of this group speak for themselves in the U. S. P. XI and in the two Supplements. These results do not, however, record the magnitude of the work of revision nor the details that are involved.

The fifteen Sub-Committee Chairmen have issued to date 1158 official Bulletins, covering 4308 pages, and hundreds of individual letters; 843 Circulars covering 3195 pages have been sent to the Committee of Revision, and the correspondence in the General Chairman's office is extensive and constantly increasing.

Advisory Boards.—Because of unexpected developments early in the current Revision of the Pharmacopœia it was found necessary to obtain the advice of experts who were not members of the Committee of Revision, but who were willing to serve in an advisory capacity on special Boards. In each instance a member of the Committee of Revision has been made Chairman of the Board. When possible, a special expert of the Council on Pharmacy and Chemistry of the Ameican Medical Association was chosen as one of the members. All other members were selected because of their special knowledge of the subject and their national or even international recognition in the field. Each Board is made up of five members. These Boards are: the U. S. P. Vitamin Advisory Board, the U. S. P. Anti-anemia Preparations Advisory Board, the U. S. P. Endocrine and Hormone Advisory Board and the U. S. P. Sterile Products Advisory Board. The members of these Boards have served without remuneration and have received only their expenses in attending meetings, etc.

The U. S. P. Vitamin Advisory Board.—The first problem before this Board was the establishment of standards and adequate biological assay methods for Vitamins A and D, primarily for the assay of Cod Liver Oil.

A specially selected lot of Cod Liver Oil was made the "U. S. P. Reference Standard." Through the collaboration of about twenty laboratories in this country and abroad, the potency of this oil was established by comparison with the Vitamin A and Vitamin D standards of the Commission on Biological Standardization of the League of Nations. This "U. S. P. Reference Cod Liver Oil" has since been distributed not only in this country but in many European and Asiatic countries, for the purpose of standardizing Cod Liver Oil, Halibut Liver Oil, Percomorph Liver Oil, Viosterol and many other Vitamin A- and Vitamin D-containing substances. It has also been made the basis for the determination of the Vitamin A potency of fish-liver oils by the spectrophotometric method and for that purpose has been used throughout the world. The Board is now preparing a new lot of Cod Liver Oil to replace the original Reference Oil. A composite sample of authentic Cod Liver Oil has been secured from four of the most important producing centers and the potency of this new Oil is now being determined with the coöperation of fifteen biological laboratories.

More than 5000 packages of Reference Oil have been distributed from the office of the Revision Chairman within the last few years.

When the Pharmacopœia established its "U. S. P. Units" for Vitamin A and Vitamin D these immediately superseded the many other Vitamin A and Vitamin D units in use in this country and clarified the great uncertainty of values which these

varying unofficial units had created. The official biological assay methods for Vitamins A and D have also replaced all other methods and these have been perfected, through revision, in both the First and the Second U. S. P. XI Supplements.

The Vitamin Advisory Board has also been coöperating in extensive research into the spectrophotometric methods for Vitamin A determination, and it is hoped that this can be developed sufficiently to receive recognition in the official monograph of Cod Liver Oil in the U. S. P. XII.

The Vitamin Advisory Board has also directed studies over a period of about four years for assaying Vitamin B_1. Three such researches were directed by the Board in the selection of the most effective or efficient bio-assay method. Twenty-one biological laboratories have participated in these Vitamin B_1 studies, some of them conducting many assays and submitting their results in the collaborative studies. For several years the Pharmacopœia distributed a Vitamin B_1 Standard consisting of activated clay, identical in character and potency with the International Standard, but it has now prepared and is distributing a blend of synthetic Vitamin B_1, the potency of which has been determined by many biological laboratories in comparison with the original International Standard. This synthetic, crystalline, Vitamin B_1 Reference Standard for the U. S. P. has been proved to be identical in physical and chemical characteristics and also in its potency, with the new International crystalline standard. The Second U. S. P. XI Supplement has recognized this substance, "Crystalline Vitamin B_1," under the name "Thiamine Hydrochloride," and has made the biological assay method official.

The Vitamin Board has also had the coöperation of an auxiliary U. S. P. Vitamin Committee, composed of about one hundred and twenty-five vitamin experts in the United States and abroad. This Committee has held four meetings.

The U. S. P. Anti-Anemia Preparations Advisory Board.—This Board was created because the U. S. P. XI had introduced Liver Extract in powdered form and also as a purified solution for parenteral administration and these products most urgently needed standardization. There were no known chemical or biological assay methods for determining their potency and, therefore, the Pharmacopœia, with the aid of the members of this Advisory Board, undertook the evaluation of these through clinical results. Since it was not possible to establish Reference Standards and detailed assay procedures, as in the case of Vitamins, Digitalis, etc., an entirely new procedure was undertaken. Eminent authorities in the anti-anemia field volunteered to serve and manufacturers consented to submit their products, with clinical evidence of their value in the treatment of pernicious anemia. This Pharmacopœial Board set up its own standards of response in the formation of reticulocyte cells and red blood cell restoration, and made this the U. S. P. unit. The determination of value gave consideration to all clinical factors presented. In the few years since this Board was established practically all anti-anemia preparations from liver sold in the United States have been evaluated, and the Federal Food and Drug Administration will not permit the importation of any products of this type unless they have been approved and have been assigned a unit value by this Advisory Board.

The Endocrine and Hormone Advisory Board.—This Board was established because of the extensive development of hormones and the importance of their

standardization for medicinal use. None of these products has been given official recognition, but most of them have received international standardization, and this new Advisory Board has already provided a United States standard for estrone. This standard is now distributed by the Pharmacopœia, and standards for three other hormones are in the course of preparation. This Board will also assist in the establishment of standards for other hormones and endocrines as they become sufficiently important as medicinal substances. The group of experts composing the Board has also been serving in an advisory capacity for the Sub-Committee on Scope in the consideration of the inclusion of this class of products in the next Pharmacopœia.

The Sterile Products Advisory Board.—Several years ago the Food and Drug Administration called attention to the importance of providing Pharmacopœial standards for a number of substances used in surgical practice. The National Institute of Health, the American Medical Association, the American College of Surgeons, the American Hospital Association and a number of other organizations interested in surgical practice also urged Pharmacopœial standardization of this class of important medicinal aids. In order that the Pharmacopœia might meet this demand, an additional Advisory Board of experts was appointed. This Board enlisted the aid of all of the organizations already named, and also invited recommendations from the Surgeons General of the Army, Navy and Public Health Service and from the manufacturers of surgical cotton or sutures, and also from the producers of other surgical products. After several conferences of the Board, the standardization of Surgical Gut and the determination of its sterility, and the standardization of Surgical Cotton, both for sterility and fiber length, were made official in the "Second U. S. P. XI Supplement." The Board is continuing its study of such products as Surgical Gauze, Bandages, First Aid Dressings, Adhesive Plaster, etc., and it is expected that Pharmacopœial monographs covering this group of preparations will be ready for inclusion in the next Pharmacopœia. This Board will also assist the Pharmacopœia in establishing the standards for other sterile products such as those suitable for parenteral administration.

Digitalis Investigation.—During this decade three separate studies of Digitalis, with respect to its storage, deterioration and assay have been started and are still under way. Under the supervision of Dr. C. W. Edmunds, Chairman of the Sub-Committee on Biological Assays, the new U. S. P. Reference Standard for Digitalis, which is identical in potency with the International Standard, was established. Many comparative assays were conducted and more than a year was required for final determinations.

A second extensive study of both the assay and a revised Pharmacopœial Reference Standard is now being promoted actively under the direction of Dr. E. E. Nelson, who has been requested by Dr. Edmunds to direct the investigation. About fifteen pharmacological laboratories are participating in this study, which involves the technique of the assay and the development of additional Reference Standard material. It is believed that this will require at least another year for completion.

The third Digitalis investigation involves elaborate clinical studies under the supervision of Dr. Henry A. Christian, and also bio-assay studies. In this study, 36 noted specialists in cardiac disease, and 25 pharmacologists are co-

operating. In this investigation, 200,000 tablets and about 7000 bottles of Tincture of Digitalis have been provided by the Pharmacopœia.

Reference Standards.—Prior to 1931, the reference standards then required were furnished without charge by the Food and Drug Administration. The rapid developments in the field of standardization, which required reference standards, made it necessary for the U. S. P. Board of Trustees to arrange to provide these standards and to distribute them.

In addition to the reference standards already mentioned, namely, Vitamin A, Vitamin D, Vitamin B_1 and Estrone, the Pharmacopœia has prepared and is distributing reference standards for use in official biological assays of Digitalis, Ergot, Posterior Pituitary, Strophanthin, Pepsin, Epinephrine and Aconite. This service of the Pharmacopœia has been made possible through the assistance of various Sub-Committees and technical experts associated with the Government or with industrial organizations, and, with the exception of Estrone, the Pharmacopœia has purchased all of the materials and paid for the researches and standardization procedures necessary in preparing the standards. These standards have been used extensively in this country and in some foreign countries in research, and especially in standardizing and evaluating official and many unofficial medicinal products.

During the past few years the Pharmacopœia has distributed a total of 2496 packages of reference standards, in addition to the more than 5000 packages of Vitamin A and D standards mentioned before. All of these reference standards are stored under suitable preservation conditions and are shipped, stored and billed from the office of the Chairman of the Committee of Revision. The expense involved in carrying out this important new service has been covered by the returns.

Revision Publicity and Public Hearings.—In addition to the publication of abstracts of revision changes in the pharmaceutical press, as recommended by the Convention, a new feature has been established during the past few years which has proved important and valuable. In addition to receiving the assistance and advice in almost every phase of Pharmacopœial revision, from laboratories connected with the Government, from colleges and universities, and industrial organizations both through correspondence and conferences, the Pharmacopœial Committee has adopted the policy of holding public hearings.

When proposed U. S. P. monographs have reached the stage of page proof, these page proofs are widely distributed, and without charge, to those who have demonstrated their interest in the Revision, and a date is announced when all who are interested are invited to appear at a public hearing in Washington to discuss details of the proposed standards.

The Chairmen of the Sub-Committees responsible for the monographs being revised are also invited to be present and they answer questions or explain proposed standards and consider recommendations made by those in attendance.

All proposals and discussions are stenographically recorded and those who desire to submit specific proposals are asked to do so in writing.

The members of the Executive Committee also hold conferences with the officials of the Food and Drug Administration and the Public Health Service on the day following the public hearings, and obtain their suggestions and advice concerning the proposed new Pharmacopœial standards. Following these confer-

ences, the members of the Committee give final consideration to every factor and decide the details of the new Pharmacopœial monographs.

Extending Pharmacopœial Information.—Early in the U. S. P. XI program the Board of Trustees recognized the importance of establishing a systematic procedure for extending information to physicians and pharmacists concerning the use and application of the Pharmacopœia. A special Pharmacopœial Committee, consisting of three pharmacists and three physicians, was appointed. This committee enlisted the coöperation of the A. M. A. officials and one of their joint activities was the securing and publishing, in the *Journal of the American Medical Association*, of twenty-nine articles written by clinical experts and dealing with the treatment of specific diseases in which the drug requirements have been especially considered. The authors selected to write these articles were all clinical experts with national or international reputations and their articles were widely accepted as authoritative. After their original publication in the *A. M. A. Journal*, these articles were distributed as reprints to a large group of physicians, interns and pharmacists, and used in teaching therapeutic practice. The authors of these articles were not asked to confine their recommendations to U. S. P. or N. F. products, but were given complete freedom to indicate the most important of known medicines in the treatment of the diseases under consideration. This test has largely confirmed the completeness of the Pharmacopœial lists by their suggesting 83 per cent of official medicines and 17 per cent of unofficial items. As has already been indicated, the medicinal products which are not now official but which have been named by these physicians, are being considered for possible adoption in the next U. S. P.

This program has been so well received that nineteen additional articles have been secured and will appear in the *A. M. A. Journal* during the coming year.

The first series of 24 A. M. A. articles referred to above, and which appeared under the caption, "The Pharmacopœia and the Physician," are now being issued in book form by the American Medical Association as one of their series of publications. They have also been translated into Spanish, with the aid of the Pan American Sanitary Bureau, and have appeared in the Bulletin of the Bureau, which is sent to about 10,000 physicians and pharmacists in the 20 republics of Central and South America. These articles, in Spanish, will also soon be available in book form, as published by the U. S. P. Board of Trustees.

The special Pharmacopœial Committee on Extending Pharmacopœial Information has also sponsored the placing of exhibits in many medical and pharmaceutical conventions. In these exhibits the value and use of official medicines have been emphasized.

Preservation of Medicinal Products.—The Pharmacopœia has for a number of decades directed the methods for the packaging and storage of a number of the official products. These official directions have been based upon the practical experience of manufacturers, distributors and dispensers of medicines, and also upon special investigations conducted over a number of years and in which the Pharmacopœia assisted financially.

When the new Food, Drug and Cosmetic Act was passed in 1938, it included among its provisions the enforcement of the packaging requirements established by the Pharmacopœia. Knowing that this feature was proposed for the new law,

a special U. S. P. Committee, made up chiefly of Chairmen of Sub-Committees, was established about five years ago and has made a special study of every packaging and storage specification for the U. S. P. XI. Every requirement is again under review and into the study have been brought officials of the Food and Drug Administration, the U. S. Bureau of Standards, manufacturers and packaging experts.

It is also necessary for the Pharmacopœia in the near future to define much more specifically the meaning of the terms used in U. S. P. requirements. For instance, in the requirement that a "tightly-closed" container shall be employed in packaging certain chemicals or drugs which are readily susceptible to atmospheric influence, either by deliquescence or efflorescence or perhaps oxidation, the meaning of such a term must be specifically defined and testing methods devised. This program is now actively under way.

International Pharmacopœial Relations.—Both the U. S. P. X and the U. S. P. XI were greatly assisted through having the use of International Standards. The present Pharmacopœia has duplicated most of these for distribution within the United States.

Very intimate and valuable relations have been maintained with the British Pharmacopœial Commission, both organizations sharing their researches and conferring on many questions. It is expected that the new British Pharmacopœia and the U. S. P. XII will appear at approximately the same time and will establish even more completely identical nomenclature and standards for most of their official products.

Within the last two years the League of Nations has appointed and financed the expenses of an International Commission of Pharmacopœial Experts. This group, representing Great Britain, Switzerland, France, Denmark, Holland, Belgium and the United States, has held two meetings in Geneva, and already has prepared about 100 texts for possible international adoption. The work of this Commission is progressing energetically and when about 300 of the most important therapeutic agents commonly used throughout the world have been described and standardized, these will be offered to all nations of the world as suggestions for adoption within their own Pharmacopœias. The United States representative on this International Commission is the present Chairman of the U. S. P. Revision Committee.

The Spanish Edition of the U. S. P. XI.—Following the precedent of three decades, the Board of Trustees published the U. S. P. XI in Spanish. The Pharmacopœia was especially fortunate in securing the enthusiastic coöperation on this translation of the experts of the Pan American Sanitary Bureau, at Washington. These translators called into council the pharmacists of Cuba who had been responsible for previous translations, and also obtained the coöperation of the Auxiliary Pharmacopœial Commissions of Porto Rico and the Philippines.

The publication, in Spanish, of the articles on "The Pharmacopœia and the Physician" still further assisted in introducing the U. S. P. XI in Spanish into Central and South American countries, with the result that Costa Rica, Cuba, the Dominican Republic, Nicaragua and Panama have adopted the United States Pharmacopœia as their official medical authority, and Argentina, Bolivia, Chile, Columbia, Ecuador, Honduras, Peru and Uruguay have this action under con-

sideration. At the last meeting of the Pan American Sanitary Congress a resolution was passed urging the republics of Central and South America which did not already have their own Pharmacopœias to take advantage of the opportunity for uniformity in medicinal standards in Pan American countries by adopting the U. S. P. XI as their Pharmacopœia.

The U. S. P. Supplements.—When the Pharmacopœial standards were made an important part of the new Federal Food, Drug and Cosmetic Act, and the enforcement of the Act extended to additional features, such as packaging, through a greatly enlarged enforcement organization, it became necessary for the Pharmacopœia to adopt a policy which would make it possible to revise standards promptly if found necessary, and make official the important new medicinal agents developed between decennial revisions.

A new feature of the Federal Food, Drug and Cosmetic Act directs the Secretary of Agriculture to call the attention of the Pharmacopœial Committee to any existing U. S. P. standards which require revision, or are believed to be inadequate, and to allow a reasonable time for their revision. The act, however, further provides that should the Pharmacopœia not comply with this request within a reasonable time the Secretary of Agriculture must prepare governmental standards. This situation has been met by utilizing the authority granted by the 1930 Convention to issue revised texts or Supplements whenever this was believed necessary. When the need for revision was urgent, as when products could not be imported because of unsatisfactory standards, the Pharmacopœia issued "Interim Revision Announcements," such Announcements being accepted as official revisions. However, to give such Interim Revision Announcements permanent form, or to revise other monographs which have been found to be unsatisfactory, and, still more important, to give official recognition to new therapeutic agents the importance of which have made Pharmacopœial recognition desirable, Supplements have been issued. In these Supplements the entire revised monographs have been copied with the sections which have been altered distinctly marked and indicated as superseding the text of the original U. S. P. XI.

In the recently published Second U. S. P. XI Supplement a Cumulative Pharmacopœial Index has been provided which indicates the location of all official monographs. Most of the official texts are still to be found in the original U. S. P. XI. Seventy-eight monographs were revised and published in the First U. S. P. XI Supplement, while the Second Supplement carries eighty-six revised texts, thirteen new monographs and numerous general tests, reagents, etc.

While the main advantage of the U. S. P. Supplements is to keep Pharmacopœial standards in conformity with the latest scientific developments, yet one of their greatest advantages is the fact that monographs can be thoroughly studied and revised and a satisfactory text obtained before the necessity of publication. Under the old decennial revision method, when the Pharmacopœia went to press on a given date, every monograph had to be printed whether or not its revision was satisfactorily completed.

U. S. P. Finances.—The entire cost of revision, including every phase of the work, has averaged $19,162.07 per year. The total for nine years is $172,458.64, of which $27,015.06 was for research alone. The balance covers honoraria, clerical assistance, postage, telegrams, meetings, etc., for the period. These costs would

have been multiplied many times had it not been for the contributions, without charge, of laboratory and office facilities by colleges, universities, industrial organizations, private laboratories and the Government. Another tremendous cost has been avoided through the voluntary service in the direction of revision work, by outstanding physicians, pharmacists and other scientists of this country, many of these collaborators having served throughout the entire period of revision. Members of the Revision Committee have received modest honoraria, in no instance averaging more than $100.00 per year.

Research studies of assay methods in the vitamin field, in the establishment of standards for Thyroid, Nitroglycerin, Digitalis, Ergot, Hyoscyamus, and for the solution of many other difficult Pharmacopœial problems have alone been possible because of help rendered by voluntary assistance, often at a considerable cost to those who have participated. This situation is most gratifying and satisfactory and reflects the fine professional spirit of those who have coöperated in perfecting the official standards.

By the maintenance of this policy it is believed that the Pharmacopœia will always be able to secure the guidance and advice of the most eminent scientists in this country and abroad. Such services could not be purchased, but are willingly given voluntarily.

Prior to this decade, it had been customary to have an annual audit of the accounts of the Pharmacopœia by members of the Board of Trustees and a decennial audit by an outside auditor. The developments referred to in this statement made it apparent that a complete annual audit was required and this was arranged.

The necessary extension of the revision program has required increased expenditures. Fortunately the contract for printing and distributing the U. S. P. XI and the two Supplements resulted in a considerable reduction in cost and an increase in return. As a consequence, the Pharmacopœia during this period has operated within its income without drawing on its reserve.

November 20, 1939.

In an effort to curb the practice of manufacturers who make a point of selling drug products to their employees, Mr. Douglas Hunt, president of the Wisconsin Pharmaceutical Association, announced recently that druggists throughout the state have been urged to contact the association's headquarters in the event that they know of manufacturers selling drug products to their employees. Mr. Hunt pointed out that the laws of 1939, chapter 129, state: "Prohibit the sale by manufacturers to employees or other persons of products not of its own manufacture, production or handled in its regular course of trade."

"We believe that this law forbids the sale of drug products by manufacturers to their employees." Mr. Hunt said, "our Association will endeavor to enforce this law for your pharmacy."

Taken from a bulletin of the West Virginia State Pharmaceutical Association: "We know of at least one member of the ASSOCIATION who requires that his registered pharmacists be members of the state association and the AMERICAN PHARMACEUTICAL ASSOCIATION. He states that. 'I am not offering employment to any man in my prescription department who is not interested in these organizations and willing to support them.'"

A FINANCIAL STATEMENT COVERING THE RECEIPTS AND EXPENSES OF THE FIRST NINE YEARS OF THE U. S. PHARMACOPŒIAL DECENNIAL PERIOD—APRIL 15, 1930 TO APRIL 30, 1939

A financial statement, indicating the receipts and expenditures of the United States Pharmacopœial Convention for the first nine years of the Eleventh Revision period, April 15, 1930, to April 30, 1939, is herewith submitted by the U. S. P. Board of Trustees.

This is being forwarded as a report to the delegates of the 1930 Pharmacopœial Convention and will also be sent to delegates appointed to the 1940 Convention, that they may have information concerning Pharmacopœial Revision finances.

A final financial statement covering the entire decade will be submitted by the Treasurer of the Convention as a part of the regular order of business on the first day of the 1940 Convention. Such a statement has always been submitted at previous Conventions.

For the U. S. P. Convention,
SAMUEL L. HILTON, *Treasurer.*

For the U. S. P. Board of Trustees,
JAMES H. BEAL, *Chairman,* SAMUEL C. HENRY, *Secretary.*

FINANCIAL STATEMENT OF THE UNITED STATES PHARMACOPŒIAL CONVENTION.

BALANCE SHEET AS OF APRIL 30, 1939.

(Giving effect to inventories and par value of investments.)

ASSETS.

Cash:		
Demand deposits	$ 18,836.88	
Revolving Fund	1,000.00	$ 19,836.88
Accrued interest receivable on investments	$ 799.69	
Accounts receivable, due from sales of Pharmacopœias	1,604.16	
Accounts receivable, due from sales of reference standards, A. M. A. articles, etc	339.50	2,743.35
Investments (par value):		
$43,000 H. O. L. C. 3 per cent bonds	$ 43,000.00	
$15,000 U. S. Treasury 2¾ per cent bonds	15,000.00	
*$20,000 U. S. Treasury 1⅜ per cent notes	20,000.00	78,000.00
Inventories:		
Publications and binders (see Schedule 1)	$ 16,115.58	
Revision Chairman's furnishings and equipment	1,326.44	
Revision Chairman's stationery supplies	370.00	
"The Pharmacopœia and the Physician" reprints	180.00	
Reference Standards (cost of materials without allowance for research or conference costs)	2,130.00	20,122.02
Premium paid on Investments		1,525.00
Total Assets		$122,227.25

NET WORTH.

†Net Worth, April 15, 1930	$121,696.83	
Increase in Net Worth, nine-year period (as per Income and Expense Statement)	530.42	
		122,227.25

* These securities include the principal of the "Remington Research Fund" of $20,000.00.

† The net worth of $110,726.08 reported as of April 15, 1930, did not include certain assets valued at that time at $10,970.75 (see U. S. P. Convention Proceedings, page 58). The net worth has accordingly been adjusted to include this amount.

INCOME AND EXPENSE STATEMENT—APRIL 15, 1930, TO APRIL 30, 1939.

GENERAL ACCOUNT.

INCOME:			
Sale of English and Spanish Editions of U. S. P. X and XI and the first U. S. P. XI Supplement		$230,326.04	
Sale of Reference Standards and A. M. A. articles		14,081.93	
Interest on Investments		22,804.83	
Use of U. S. P. Text by authors of other books		4,855.00	
Miscellaneous income		1,180.28	
Gross income			$273,248.08
EXPENSES:			
PUBLICATION EXPENSES.			
Cost of Composition, Printing and Binding (Covering the U. S. P. XI English and Spanish Editions and the First U. S. P. XI Supplement)		$ 77,584.19	
Less increase in value of inventory:			
April 30, 1939 inventory	$16,115.58		
April 15, 1930 inventory	7,300.88		
		8,814.70	
Cost of publications sold		$ 68,769.49	
ADMINISTRATION EXPENSES.			
Meetings of the Board of Trustees	$ 4,818.96		
Clerical	13,650.00		
Supplies	1,119.75		
Postage and telegrams	290.00		
General expense (less cost of furnishings and equipment)	1,700.13		
Honoraria	1,800.00	$ 23,378.84*	
MISCELLANEOUS EXPENSES.			
1930 Convention Expenses		$ 3,726.18	
Sundry disbursements under the Remington Research Fund		5,319.11†	
Cost of acquiring and disposing of investments		1,375.40	
REVISION EXPENSES.			
See details in appended Notes. Page No.			
3 .....1—Meetings	$17,075.38		
3 .....2—Clerical	34,870.81		
4 .....3—Supplies	13,997.28		
4 .....4—Postage and telegrams	6,308.84		
4 .....5—General expenses	22,572.37		
5 .....6—Honoraria	48,323.90		
6 .....7—Research appropriations†	27,000.06†	$170,148.64‡	
Total expenses			$272,717.66
Net gain for the period			$ 530.42

* Average yearly cost for Administration, $2597.65.

† For research—from Revision Expenses, $27,000.06, from Remington Fund, $5319.11—Total $32,319.17.

‡ Average yearly cost of U. S. P. Revision from April 15, 1930, to April 30, 1939, $18,905.40.

SCHEDULE NO. 1—INVENTORY OF PUBLICATIONS, SUPPLEMENTS AND BINDERS ON HAND APRIL 30, 1939.

5085 volumes U. S. P. XI, English Edition, bound in buckram, cost $.97597 each	$ 4,962.81
5000 volumes U. S. P. XI, English Edition, unbound, cost $.50847 each	2,542.35
9 volumes U. S. P. XI, English Edition, leather bound, cost $2.71 each	24.39
1153 volumes U. S. P. XI, Spanish Edition, bound, cost $5.3315 each	6,147.22
1334 First U. S. P. XI Supplement (second printing), bound, cost $.4735 each	631.65
2118 First U. S. P. XI Supplement (second printing), unbound, cost $.238 each	504.08
713 Supplement binders, cost $1.16 each	827.08
Translation of "Pharmacopœia and Physician" articles into Spanish	476.00
Total	$16,115.58

A More Detailed and Supplementary Financial Statement of the Revision Expenses of The United States Pharmacopœial Convention, Inc.*

NOTE 1.—MEETINGS OF THE GENERAL AND EXECUTIVE COMMITTEES OF REVISION, AND OF SUB-COMMITTEES, SPECIAL CONFERENCE GROUPS, ETC.

From May 1, 1930, to April 30, 1939.

First General Committee Conference (1931)	$ 4,199.74
Second General Committee Conference (1933)	4,465.65
Sub-Committee on Scope Conference	1,335.60
First Supplement Public Hearing	630.51
Executive Committee Meeting (1938)	994.27
Traveling, hotel, and incidental expenses, during nine years, of the General Revision Chairman, for conferences with Sub-committee Chairmen, sub-committee groups, Food and Drug Officials, and others assisting in the Revision (Annual average $382.71)	3,444.42
Public Vitamin Conferences	2,005.19
Total	$17,075.38

NOTE 2.—CLERICAL, EDITORIAL AND TECHNICAL ASSISTANCE TO THE GENERAL REVISION CHAIRMAN.

From May 1, 1930, to April 30, 1939.

Secretarial and stenographic assistance		$29,930.17
Editorial and technical assistance		4,940.64
In preparing manuscript, proofreading, handling return proofs, control of "Reference Standards," aid in Pharmacopœial exhibits, etc., the following assisted and were paid as indicated:		
Wm. Batt	$ 1.50	
H. R. Boggs	7.50	
F. Brockman	19.00	
D. Butz	8.00	
H. P. Frank	541.09	
Mr. L. Lorand	75.00	
J. N. McDonnell	14.50	

* NOTE: The detailed and classified lists of expenses which follow, numbered from 1 to 7 under "Revision," summarize all itemized bills for revision expenditures as authorized by the Board of Trustees and approved for payment by Chairman Cook up to April 30, 1939.

E. H. McLaughlin	11.00	
A. B. Nichols	1,610.14	
A. Osol	20 03	
C. Perkins	26.50	
C. C. Pines	12.00	
W. Reuning	57.00	
G. Savitz	235.37	
R. Schrey	329.01	
W. Sechrist	1,823.30	
L. F. Tice	15.00	
Mrs. Watts	134.70	
	$4,940.64	
Total		$34,870.81

NOTE 3.—SUPPLIES.

From May 1, 1930, to April 30, 1939.

Stationery for the General Chairman and for all members of the Committee of Revision		$ 2,033.62
Binders for all official circulars and correspondence		1,136.19
Mimeograph supplies (paper, for circulars, stencils, ink and maintenance)		3,197.49
Secretarial supplies for General Chairman's office		2,460.63
Sub-committee supplies, clerical help, etc., as follows		5,169.35
1. Scope	$ 11.00	
2. Therapeutics	30.14	
3. Biological Assays	56.59	
4. Biological Products	.....	
5. Botany and Pharmacognosy	157.03	
6. Proximate Assays	831.13	
7. Inorganic Chemicals	1,511.43	
8. Organic Chemicals	2,003.41	
9. Reagents, etc	120.56	
10. Volatile Oils	98.88	
11. Extracts, Fluidextracts, etc	88.65	
12. Waters, Solutions, Syrups, etc	91.07	
13. Ointments, etc	127.69	
14. Tables, etc	.....	
15. Nomenclature	41.77	
	$5,169.35	
Total		$13,997.28

NOTE 4.—POSTAGE AND TELEGRAMS.

From May 1, 1930, to April 30, 1939.

Postage and telegrams	$6,308.84

NOTE 5.—GENERAL EXPENSES.

From May 1, 1930, to April 30, 1939.

Translating the U. S. P. XI into Spanish	$ 2,006.00
Contributions to the A. PH. A. toward an Abstract of Pharmacopœial Literature	9,000.00
Reproducing and distributing abstracts of U. S. P. literature for 8 years as supplied free by E. R. Squibb and Sons	2,345.12
U. S. P. Exhibits at the Annual A. M. A. Conventions	1,451.74

Extending U. S. P. information to physicians by many exhibits (other than A. M. A.); by publishing 3500 sets of A. M. A. reprints of the First "Pharmacopœia and Physician" Series and by other publicity programs, less $180.00 inventory of A. M. A. articles. (NOTE: This cost is reduced by the $2570.06 received to May 1939, from sales of the A. M. A. reprints as listed among "Receipts" in this report)	4,199.85
Rent for Chairman's secretary's office and storage space for U. S. P. property, at 7th and Race Streets, from May 1930 to October 1934	1,645.00
Offices, light and heat for Chairman Cook and U. S. P. Secretaries at the Philadelphia College of Pharmacy and Science from May 1930 to April 30, 1939, and for storage space for U. S. P. property since October 1934	no charge
A part of the cost of the U. S. P. "Reference Standards" including Vitamins A, D and B_1, Posterior Pituitary, Epinephrine, Ergot, Digitalis, Pepsin, Aconite and Ouabain, less $2130 inventory of Reference Standards (NOTE: See "Research Appropriations" for the balance of this expense.)	64.50
Dues for Membership in National Council on Pharmaceutical Research	225.00
Publication of Abstracts of U. S. P. changes	311.25
Various Interim Revision Announcements	45.60
Cod Liver Oil Assay reprints	59.15
Taking inventory of U. S. P. property, Washington, D. C.	31.54
Three typewriters in Chairman's office, also files	429.41
Mimeograph machine in Chairman's office	385.00
Miscellaneous expenses of General Chairman's office	373.21
Total	$22,572.37

NOTE 6.—HONORARIA.

From May 1, 1930, to April 30, 1939.

Chairman Cook (at $300.00 per month)		$32,250.00
Revision Committee Members as follows		14,100.00
Henry V. Arny	$ 300.00	
Walter A. Bastedo	200.00	
George D. Beal	1,000.00	
E. J. G. Beardsley	100.00	
Oscar W. Bethea	200.00	
Francis E. Bibbins	200.00	
A. Richard Bliss	200.00	
Theodore J. Bradley	200.00	
Charles L. Brown	100.00	
Mortimer Bye	100.00	
Charles E. Caspari	100.00	
B. V. Christensen	100.00	
Henry A. Christian	750.00	
W. G. Crockett	200.00	
Edward D. Davy	200.00	
Marion S. Dooley	100.00	
A. G. DuMez	600.00	
C. W. Edmunds	750.00	
Bernard Fantus	200.00	
E. N. Gathercoal	200.00	
W. F. Gidley	50.00	
Loyd E. Harris	100.00	
L. D. Havenhill	200.00	
Arthur D. Hirschfelder	100.00	
Reid Hunt	500.00	

C. W. Johnson	100.00	
C. B. Jordan	750.00	
John C. Krantz	1,000.00	
Edward H. Kraus	100.00	
H. A. Langenhan	500.00	
J. Leon Lascoff	100.00	
Charles H. LaWall	300.00	
Townes R. Leigh	100.00	
Ernest Little	400.00	
George W. McCoy	500.00	
Hugh C. Muldoon	100.00	
C. E. Nelson	100.00	
E. E. Nelson	200.00	
Edwin L. Newcomb	400.00	
Joseph Rosin	500.00	
George B. Roth	100.00	
Wilbur L. Scoville	500.00	
Leonard A. Seltzer	500.00	
Earl R. Serles	100.00	
Virgil E. Simpson	100.00	
Isaac Starr	100.00	
A. L. Tatum	100.00	
Frank P. Underhill	100.00	
C. B. Wood	100.00	
H. C. Wood	200.00	
Heber W. Youngken	300.00	
Honorarium to Dr. E. E. Nelson (Ergot Investigation)		200.00
Honoraria to authors of articles in "The Pharmacopœia and Physician" Series (for clerical and stenographic assistance)		1,773.90
Total		$48,323.90

NOTE 7.—RESEARCH APPROPRIATIONS.

From May 1, 1930, to April 30, 1939.

Standards for Color Nomenclature			$ 1,348.90
(A. Ph. A. Fellowship for Kenneth L. Kelly		$750.00	
and Studies under direction of Prof. E. N. Gathercoal		598.90)	
Dues for Membership in Color Council			150.00
Sub-Committee Research Assistance as follows			19,782.15
6—*Proximate Assays:*			
Dr. G. DeKay	$1,300.00		
Dr. A. Hayden	1,500.00		
Dr. A. Viehoever	200.00		
Mr. Kauffman	150.00		
Mr. L. Tice	40.00	$3,190.00*	
7—*Inorganic Chemicals:*			
Dr. J. Carr	$2,250.00		
Dr. J. Schmidt	350.00		
Prof. L. Tice	20.00		
Dr. A. Osol	7.50		
Dr. F. K. Bell	3,766.65	$6,394.15*	

* See Footnote page 1018.

8—*Organic Chemicals:*			
Dr. C. Szalkowski	$5,128.10		
Dr. M. W. Green	2,941.67		
Miss Elinor Sackter	1,558.33†	$9,628.10*	
10—*Volatile Oils:*			
Dr. A. Osol	$ 150.00		
Prof. L. Tice	45.00		
Mr. Uranson	15.00	$ 210.00*	
12—*Waters, Solutions, etc.:*			
Mr. E. E. Johnson	$ 342.40		
Mr. C. E. Evans	8.50		
Mr. A. Poole	9.00	$ 359.90*	
Prescription Survey to assist in Scope Decisions (under the direction of Prof. E. N. Gathercoal)			419.88
Study of Preservation and Packaging Requirements for U. S. P. Chemicals (under the direction of Prof. H. V. Arny)			500.00
Digitalis Clinical and Biological Research (under the direction of Dr. Henry A. Christian)			235.02
Expenses for Anti-Anemia Standardization program			1,289.27
Expenses for U. S. P. Sterile Products Board			151.65
Special Investigation of Solution of Magnesium Citrate standards—by Profs. A. Osol and L. F. Tice			70.00
Pharmacological study of digitalis			742.23
Portion of the cost of U. S. P. "Reference Standards" to be classified under research (see General Expenses for the balance of this expense)			2,310.96
Total from the U. S. P. General Fund			$27,000.06

* The Colleges and Institutions where Sub-Committee Chairmen were affiliated have contributed office and laboratory facilities without charge to the U. S. P.

† The check drawn to Mellon Institute, to be paid out for U. S. P. assistant when due, includes Miss Sackter's salary to April 30, 1939, the balance being held for subsequent salaries for the U. S. P. assistant.

LAIRD J. STABLER.

The passing of Dean Stabler leaves a void that cannot be filled. His name is known and loved by thousands of men and women now scattered throughout the United States, filling high and important places in the field of Pharmacy and Oil Technology. They learned from him. His service to the youth of California was not only in the knowledge he imparted but in the contact with his original mind and kindly interest which stimulated them to greater achievement in their profession.

As Dean and Builder of our college his keen insight into character enabled him to bring out the best in those under his direction and to influence them to greater usefulness in their daily lives. Much of the success which he achieved was due to his unselfishness in the promotion of the welfare of others.

His life is woven in the American pattern. As a citizen, Dr. Stabler took an active interest in the affairs of the community, as well as the state and nation. He gave liberally of his time and learning in support of legislation both State and Federal, for the betterment of conditions in the field of Pharmacy. His inventive genius was productive of usefulness and the results of many of his discoveries are being extensively used. And yet their very nature impels in us the feeling that is not beyond our ability to achieve along these lines in the future, as he has done in the past.

Unassuming, kindly, always ready to lend a listening ear and a helping hand Dean Stabler will be universally mourned and long remembered by all who knew him.