

SECTION ON HISTORICAL PHARMACY, AMERICAN PHARMACEUTICAL ASSOCIATION.*

ABSTRACT OF THE MINUTES OF THE SESSION HELD IN CHICAGO, ILL., AUGUST 15, 1918.

The session of the Section on Historical Pharmacy of the Sixty-sixth Annual Convention of the American Pharmaceutical Association was convened by Chairman L. E. Sayre in Congress Hotel, Chicago, August 15, at 9.30 A.M. The Chairman read the following address:

ADDRESS OF CHAIRMAN L. E. SAYRE.

EARLY HISTORY OF BIOLOGICAL PRODUCTS.¹

SMALLPOX VACCINE.

The oldest form of biologic treatment is prophylactic immunization to smallpox. Reports of smallpox epidemics are found in the Chinese literature as early as the fourth century, and the idea of protective inoculation seems to have developed in China during the fifteenth century but not to have spread beyond its boundaries until some time in the eighteenth century, when it found its way into Japan and other eastern countries. It was introduced into England from Turkey by the wife of the British Ambassador to the latter country late in the eighteenth century.

The relationship between cowpox and smallpox and the protection against smallpox resulting from accidental inoculation with cowpox, appears to have been recognized as early as 1753. The first deliberate application of cowpox virus recorded was by a farmer, Benjamin Jesley, in 1774. Other sporadic experiments of this nature were made but no one seems to have attached any real significance to the observation or to have recognized its possibilities prior to the investigations of Jenner.

Dairy workers directed to Jenner's attention the fact that milkers who contracted cowpox inoculations from the udders of infected cows, were subsequently immune to smallpox. He collected data on 16 cases with histories of accidental cowpox inoculations in whom subsequent inoculations with smallpox virus were negative. Supported by the advice of John Hunter, probably the greatest medical student of the eighteenth century, Jenner determined to try this method of immunization. He accordingly vaccinated an eight-year old boy from a cowpox vesicle on the hand of a dairy maid. The inoculation ran the characteristic course, and six weeks later Jenner attempted unsuccessfully to inoculate the boy with smallpox. Jenner published the report of this case, along with the data previously collected, and brought upon his head a storm of criticism, abuse and ridicule. He persisted in his experiments, however, and in the course of a few years convinced some of the broader minded medical men and scientists of the truth of his theory.

Vaccination with cowpox virus now spread rapidly, not only throughout England, but to the continent, and was introduced into the United States in the very beginning of the nineteenth century. The first vaccination in America was done by Dr. Benjamin Waterhouse, of Boston, on his own son in July 1800.

It is difficult for us at this time to appreciate what vaccination has meant to the world. It is necessary to bear in mind that up to the beginning of the nineteenth century smallpox was the most widely disseminated and dreaded disease to which the human race was heir. Practically everyone had it sooner or later, and from a thirteenth to a fourteenth of each generation died of smallpox.

Aside from this appalling toll of lives the disease left in its wake a population with scarred faces, blind eyes and numerous other serious afflictions. In the early work on vaccination it was customary to use very largely "humanized lymph." Patients were inoculated with cowpox material and from these original inoculations "arm to arm" vaccination was carried out. This procedure is still used in certain countries, notably, Mexico, but is objectionable because

* Papers with discussions thereon will be printed apart from the Minutes.

¹ Assistance in preparation of this article was rendered by the biologist of the laboratory of Parke, Davis & Co., to whom the author expresses hearty thanks.—L. E. S.

of the possibility of transmitting disease, especially syphilis. Most countries used exclusively virus from animal sources, and "arm to arm" vaccination is illegal in many countries, as it should be.

ANTITOXIN.

The scientific treatment of a disease must be preceded by the study of its pathology. This is very well exemplified by the discovery of antitoxin which followed a series of investigations, each of which formed a necessary link in the chain. Only brief references need be made to the fundamental work of Louis Pasteur on the relationship of microorganisms to the cause of disease, and the extension of this work by Koch and his pupils. These early investigations constituted the foundations of bacteriology and immunology.

Two general ideas or explanations developed early in the study of immunity, the one dominated by the idea that body fluids are chiefly concerned, and the other attributing the most important action to the cells, especially leucocytes. The latter view, or "cellular hypothesis," had for its chief supporter, Metchnikof. On the work of Metchnikof, and his school, is based the theory of phagocytosis. According to this view, immunity depends on the activity of the phagocytic leucocytes which have the ability to engulf the microorganisms and destroy them.

Another group of workers devoted their attention mainly to body fluids, including the blood serum and in the course of these investigations it was ascertained that blood serum has certain bactericidal properties of a specific character. It was further observed that serum of naturally immune animals had in most cases a higher bactericidal action than the serum of susceptible animals.

The next important step was the observation of Nissen and Behring (1888-89) that serum of artificially immunized animals possessed this bactericidal property in a very marked degree. In studying cases of acquired immunity it was further noted that in certain of them no bactericidal substances were demonstrable in the body fluids, and this observation ultimately resulted in the discovery of antitoxic immunity.

The cause of diphtheria (*Bacterium diphtheriae*) had been discovered a few years before by Klebs and Loeffler (1884). Roux and Yersin in 1888 obtained diphtheria toxin by filtering the organisms from broth cultures of the diphtheria bacillus.

These various researches had paved the way for the discovery of antitoxin, and in 1890 Behring and Kitasato announced the discovery that an animal, immunized against tetanus or diphtheria, produces in its blood substances capable of neutralizing the poison (toxin) elaborated by the specific microorganisms, and that the blood serum of such immunized animals, injected into other animals, would protect them against otherwise fatal doses of this toxin.

During the next three years favorable reports on the serum treatment of diphtheria were made by Kossel, Behring and Boer, Schupert and Canon, Katz and Bogenski, Huebner, Ehrlich and Wassermann. It was not, however, until the remarkable work of Roux of the Pasteur Institute, in Paris, that the antitoxin treatment of diphtheria was really established on a stable basis.

In October 1894 the International Congress of Hygiene met at Budapest to consider the various subjects relating to the welfare of the human family. This Congress will always be memorable as there was presented to a doubting World the final proofs of the possibility of immunizing animals against diphtheria by means of the toxic substances formed by these germs when grown in the laboratory. It was a great victory for the science of bacteriology, which had received so severe a set-back four years previously, through the failure of the much vaunted tuberculin brought to the attention of the Medical Public for the treatment of tuberculosis by Koch.

On the second day of the Congress, Roux of France, and Aronstrom of Austria, and on the third day Behring of Germany presented papers on this subject. In many respects the most important paper was the first mentioned, as it gave exhaustive and conclusive data showing that the new remedy could be expected to reduce the death rate from diphtheria to at least one-half of that expected. A good many American workers attended this Congress and brought home with them a little of the antitoxin, but more especially enthusiasm and belief that the key for unlocking the secret of combating the infectious diseases had been found. It was the climax of nearly ten years' work which had been inaugurated by the epoch-making but almost

forgotten work of an American physician, Dr. Henry Sewall, of the University of Michigan, who was able to show the possibilities of immunizing pigeons against rattle snake poison. Unfortunately, on account of poor health, Dr. Sewall was obliged to discontinue his work and seek the health-giving climate of Colorado, where he has since devoted his energies to the practice of medicine.

Roux's observations were based on the serum treatment of 488 children. Among these there were 109 deaths, a mortality rate of a little more than 24 percent, whereas, during the years of 1890-1893, 3971 patients in the same institution suffering from diphtheria and not receiving antitoxin had a mortality of 51 percent. During the same year that Roux had treated these 488 cases with antitoxin 520 other children in another hospital in Paris in which antitoxin was not employed showed a mortality of 61 percent. This remarkable reduction in the fatality of the disease based on such an extensive series of cases, awakened world-wide interest, and for the first time serum treatment of diphtheria was seriously considered.

As soon as those attending the Budapest Congress reached home they discussed the subject of serum therapy with their friends and co-workers, the result being that immediately it was realized that there would be a demand for diphtheria antitoxin for the treatment of the most dreaded infectious disease, which, up to this time, was regarded as the most fatal infection with which physicians were called upon to combat. It was expected that practically one-half the patients treated, no matter by what method, would succumb. Furthermore, it had the reputation of killing more doctors and nurses than any other disease which they were called upon to handle.

Parke, Davis & Company, of Detroit, Michigan, New York City Board of Health, H. K. Mulford & Company, Philadelphia, and the Marine Hospital Service, I believe, in Washington, each immediately commenced organizing a laboratory suitable for developing serum. Within a couple of months horses were being treated for the production of the new serum. By February or March sufficient American serum had been produced for experimental purposes. In the meantime, a very small quantity of the product had been obtained from Germany or France.

The development of antitoxin at that time was a slow procedure as biologists did not understand the intensive methods of toxin immunization now generally employed. The average length of treatment of a horse serum before the antitoxin was utilized was a year, so that a period of two years elapsed before any considerable amount of American produced serum was available.

The serum treatment of diphtheria made slow headway during these early years, being less popular in America than it was in Europe. Reviewing the literature from 1895 to 1900 we find various articles assailing the value of serum treatment, and advocating in preference the so-called "antiseptic treatment" of diphtheria. Accumulated evidence gradually broke down this prejudice and by 1900 the great majority of physicians accepted the value of antitoxin treatment.

Gradually physicians and the general public became convinced that the new agent was indeed all that was claimed for it, and the death rate from diphtheria dropped to one-half, and steadily declined thereafter until probably it does not, or should not exceed 5 percent if the serum is properly and promptly used at the beginning of the disease.

In 1898 Behring, to the astonishment of both the medical profession and serum producers of this country, was granted a patent in the United States on antitoxin. Behring had been endeavoring for three years to obtain such a patent with a spirit entirely foreign to all scientific principles or medical ethics, and in keeping with the type of Prussianism we have become familiar with in recent years. American laboratories had spent several years in developing their facilities for antitoxin production, and were supplying at lower prices, antitoxin of higher potency than the German product.

This patent, if allowed to stand, would have placed the medical profession and suffering humanity of America at the mercy of a single German manufacturer who had already shown unmistakable evidence of cupidity and avarice. A storm of protest arose throughout the country. State and National medical societies passed resolutions against the tolerance of this mercenary gouging, and prominent Medical Journals took up the fight. Parke, Davis & Company, one of the first commercial producers of antitoxin in America, announced their willingness to bear the brunt of any litigation which might develop through the use of their antitoxin, continued to supply the product, and insured protection to its users. The German producers cowed by the evidence

of public sentiment never tried to defend their patent, and the production and distribution of antitoxin in the United States proceeded unhampered.

About 1898 antitetanic serum was brought out as an analogous remedy for the treatment of lockjaw, but it was soon found, not alone by laboratory methods, but at the bedside, that it could not compare with diphtheria antitoxin as a treatment for the disease. As someone has remarked, symptoms of tetanus which come on a week or more after the infection which produces it, are symptoms of death, and the patient receives the antitoxin too late to exhibit its fullest efficiency. It was soon shown, however, that it possessed marvelous value as a prophylactic when given at the time the wounds were made which resulted in the production of tetanus. The recognition of the value of the serum for this purpose has steadily increased until at this time the world is convinced that it is the most successful agent for preventing disastrous results following Fourth of July accidents, and eliminating the fearful disease that has ever attended wars, millions of doses being used during the present conflict, it being the custom to administer it to every wounded man as promptly as possible after the wound has been received.

OTHER SERA.

Successful results obtained from the use of diphtheria and tetanus antitoxin naturally stimulated early attempts to apply the same principle to other types of infection. Antistreptococcic serum was developed in 1903, antimeningococcic serum in 1906, and antigonococcic serum in 1907.

Various attempts have been made to develop serum treatments for pneumonia and tuberculosis, but with only a limited degree of success. The early antipneumococcic serums were worthless, but it has been shown in recent years that there are several types of pneumococcus, and that serum to be of value must be specific for the particular type involved, and that all types are not amenable to serum therapy. The best known antitubercular serums are those developed in 1903 by Marmorek and in 1906 by Maraglino. It is pretty well accepted at present that serum therapy in tuberculosis is of little or no value.

Serum therapy has also been attempted with varying degrees of success in a number of other conditions—such as staphylococcic infections, Asiatic cholera, bubonic plague, blackleg, and several other diseases.

VACCINES.

The possibility of vaccination with bacterial products was discovered by Pasteur in 1870 while working with cultures of chicken cholera. He observed that cultures which had lost their virulence were still capable of immunizing fowls, and was quick to grasp the significance of this fact. Shortly after Pasteur developed a prophylactic vaccine against anthrax, which is still used to a considerable extent, although the "spore vaccine" subsequently developed is somewhat more efficient.

In 1880 Pasteur started his epoch-making work on rabies developing what was subsequently known as the Pasteur treatment for the preventive immunization of individuals who had been bitten by rabid animals. Subsequently he successfully prepared prophylactic vaccines for swine erysipelas, blackleg, and rinderpest.

During the year 1898 and 1899 extensive application of bacterial vaccines was made in the prophylactic of cholera, bubonic plague, dysentery and typhoid.

Prophylactic vaccination against cholera was introduced by Haffkine in 1899. It was extensively used in Japan in 1902 during a severe epidemic of cholera which prevailed there at that time, and resulted in a marked reduction, both of the case incidence and mortality of the disease. The most successful application of cholera vaccine, however, was made in the Philippine Islands a few years ago by Dr. Richard Strong, of the United States Public Health Service, who used a vaccine prepared according to his own formula. Strong has subsequently used the same type of vaccine in the Red Cross work in Serbia.

The pioneer work on "plague" vaccine was also done by Haffkine, in 1899.

The most extensive and successful application of dysentery vaccine has been in Japan based on the work of Shiga, in 1898.

Prophylactic vaccine against typhoid was introduced by Wright and Leishman in India in 1898. It was later used in the British Army during the Boer War. The wonderful developments of typhoid vaccine during subsequent years, and its importance in the control of typhoid fever in military and civil life are so well known as to require no discussion.

The use of bacterial vaccines on a therapeutic basis dates to the work of Wright and Douglas on opsonins, in 1903. Such vaccines have subsequently been applied with success to a great variety of infectious conditions proving especially efficient in infections of a chronic or sub-acute nature.

TUBERCULINS.

Reference has already been made to the unsuccessful attempts to work out an efficient method of serum treatment for tuberculosis. In 1890 Koch announced the discovery of tuberculin and great hopes were entertained for the success of this therapy. Koch recognized, however, that this agent had only limited possibilities and needed to be used with extreme caution. He did not by any means regard it as a specific in the sense that antitoxin is specific for diphtheria.

Regardless of the caution urged by Koch tuberculin was used in an irrational manner by the great majority of physicians, and the results were not only disappointing but hundreds of tubercular subjects were prematurely sent to their graves. The reaction from this "tuberculin delirium" resulted in wide-spread skepticism from which the medical world is just now emerging. We now know that tuberculin intelligently applied is a valuable diagnostic and therapeutic agent, but that it is not a "cure-all," and that its successful use demands knowledge and caution.

The prominent place attributed to glandular therapeutics during recent years has perhaps given the impression that this line of treatment is of new development. It is true that little was known of certain of these glands, notably, the pituitary and pineal, prior to the research of the last decade. The idea of using animal derivatives, however, is one of the oldest of our therapeutic conceptions.

Medical literature 600 B.C. contained references to the use of testicular extracts. At about the same time such animal derivatives as swine's fat, hair of a virgin goat, and human bone were employed. These agencies were used, however, with the idea that their vile tastes and odors would drive away the offending disease. The modern use of glandular derivatives on the other hand is based on the knowledge that in these tissues chemical substances are elaborated and stored up which profoundly influence the functional activity of the body.

The rational use of glandular derivatives is only about 25 years old. The first serious study of ductless gland action was that of Reverdin and Kocher in 1883 who published the results of their observations upon patients from whom thyroid glands had been removed. This stimulated a series of researches which resulted in the establishing of the relationship between the thyroid gland and certain definite diseases, such as cretinism. The use of thyroid gland in the treatment of these deficiency diseases soon followed, and proved to be one of the most successful applications of glandular treatment that has ever been developed. In fact, conversion of a cretin into a normal individual through thyroid feeding is one of the miracles of medicine.

Clinical reports based on the use of ovarian preparations date back to 1904, although it was only in more recent years that the real possibilities from the use of such preparations were clearly understood. Ovarian treatment is now regarded as the one efficient means of dealing with the disturbances incidental to both artificial and natural menopause.

Oliver and Schäfer made the important discovery that extracts of the medullary portion of the suprarenal gland when injected intravenously produced a marked rise in blood pressure. This led to the discovery by Takamine of adrenalin, the active principle of the suprarenal, a product well known to every pharmacist.

Brown-Sequard, in 1889, carried out clinical experiments with testicular extracts, which, while having only a limited value "per se," stimulated interest in the possibilities of glandular treatment.

Preparations of the thymus have been used therapeutically for quite a number of years, but the developments in therapeutic application of the parathyroid gland, pineal gland and pituitary gland are of more recent development. Of these latter, the pituitary is by far the most important in biologic therapy. The extract of the posterior lobe of the pituitary (pituitrin) has practically revolutionized the practice of obstetrics. It is by far the most efficient oxytocic agent that has ever been developed, and intelligently employed constitutes a safe method of shortening the duration of labor and decreasing the necessity for instrumental deliveries. The anterior lobe of the pituitary is used in certain growth disturbances.

There are a number of other glands which have been used more or less therapeutically,

but in this fleeting consideration we can do no more than to touch on those which are known to be of definite importance.

Secretary Hugo Kantrowitz read the program for the session. The report of the Historian was presented by E. G. Eberle.

REPORT OF THE HISTORIAN.

FELLOW MEMBERS:

Another year has been added to the records of the American Pharmaceutical Association and pharmacy, notwithstanding that its service has not been recognized by the Government as a profession, the products of pharmacy made possible by pharmacists have an important place in the war, where death, injury and disease are ever present. Without aspiring for undeserved recognition it can be said with no possibility of contradiction that the reliable drug supply for our soldiers has been made possible by the years of persistent and devoted study of the *materia medica* and its preparations by pharmacists and largely under the direction of the American Pharmaceutical Association. The splendid coöperation of pharmacy and pharmacists under conditions that did not offer desired encouragement exhibits their loyalty to the country under any and all conditions. When the history of the war is written medicine will be accredited with all the achievements to which it is justly entitled, and certainly no more heroic or patriotic votaries ever engaged in a country's service—but will the work that pharmacy and pharmacists have contributed be given deserved credit? Will it ever be admitted that the fine medical service was, in part, made possible by pharmaceutical manufacture and, if organized pharmaceutical service had been provided, still better service would have been given our soldiers? I am reminded of a newspaper article in which the bravery of the surgeons was indicated by the headlines and pharmacists not at all mentioned, whereas the whole half column of news items spoke practically only of the brave acts of pharmacists.

To me, among the grandest words I ever read are: "Quentin's mother and I are very glad that he got to the front and had the chance to render some service to his country."

That after all is the thing worth while—to render service to the country, to the world, in this trial of humanity. We are first and above all citizens, and there is our whole duty, but it is not immodest to have pride in our profession, which is engaged for service to humanity, and aspire to its greater service by being accredited with some degree of rank.

History is being recorded at each of our various sessions and Sections, and later it will be written. Space was offered us at the Smithsonian Institution for exhibition of historical matter. There seems to be little in the possession of the Association that would make a creditable display. Since the writer took charge of historical matter all has been made up of photographs, sketches, a few badges, books, programs, etc. These cannot of course be displayed to advantage.

There are in most schools original or first products of many chemicals, apparatus, etc., that in many instances are in the way and which if of historical association could be utilized for such display. Whether there is available material at the Lloyd Library I do not know. I hope to have a meeting here in Chicago with the Committee appointed for securing such material. Last year we had a nice display at Indianapolis, but largely of local interest; still there were a few items that might be acceptable and Mr. E. G. Eberhardt expressed his opinion that some of the articles could be had, either as loan or donation. This year we doubtless will have an interesting display, and I now make the same suggestion as last year, that wherever we may meet an historical exhibit be provided. These displays bring us into contact with those who promoted pharmacy and this Association.

During the year we have received many additional photographs, sketches and clippings, all of which are filed and are recorded on the attached sheets.

As far as my records go we have had 26 deaths since last we met. They are:

Dr. John C. Otis, Cincinnati, Ohio.	Prof. Joseph P. Remington, Philadelphia, Pa.
John S. Muth, Baltimore, Md.	John F. Fischner, Chicago, Ill.
Dr. Kirkland, Los Angeles, Cal.	Charles T. George, Harrisburg, Pa.
Prof. Charles Caspari, Jr., Baltimore, Md.	E. A. McFadden, Hackensack, N. J.
S. E. R. Hassinger, Philadelphia, Pa.	George Weldon, Paris, Idaho.
Hugo L. Boyd, Kosciusko, Miss.	Dr. Alfred Birch Husted, Delmar, N. Y.
President Charles Holzhauser, Newark, N. J.	Ferdinand C. Schapper, Chicago, Ill.

Samuel Mansfield, Baltimore, Md.

Charles J. Shulmyer, Providence, R. I.

E. P. Correll, Eureka, Cal.

Max Morris, Macon, Ga.

Henry Maisch, Baltimore, Md.

Rudolph Fack, Cincinnati, Ohio.

W. F. Jackman, Detroit, Mich.

George Leis, Lawrence, Kansas.

W. L. Dewoody, Pine Bluff, Ark.

Prof. Geo. D. Timmons, Valparaiso, Ind.

Charles F. Dare, Bridgeton, N. J.

Among them an ex-president, a president, an honorary president, a long-time faithful secretary and many devoted active members. Doctor Otis passed away just before our last meeting, Professor Remington lived to the first day of this year, and Professor Timmons entered the unseen temple last month. These twenty-six members represented 574 years of service in the American Pharmaceutical Association, an average of twenty-two years for each. The oldest in years of membership was Professor Remington, 51 years; the oldest in age, Dr. A. B. Husted, born in 1840. Over half of the number had been members for twenty years or more. I suggest that we rise in memory of these faithful members who have ceased their labors here.

Each year some of our members go away from us and we lose the joy of their companionship, the profit of their valuable counsel and comfort of their examples. But such is history, we contemplate upon our loss and, while we reflect, there is growing up another generation who have profited by their experience and who in turn may look upon us as exemplars. So, though we are saddened and sorrowful because of the loss of our friends and associates, let us rejoice that others representing new life and energy are coming among us. The purposes of our organization have been tried and have stood the test of honest endeavor and devotion to the service of humanity. Let us believe in the Association heart and soul, be optimistic relative to its mission and convey assurance of its great purposes to others who are not affiliated.

Thanking you for your confidence in me, and assuring you that I am always glad to be at your service,

Respectfully submitted,

E. G. EBERLE, *Historian*.

The list of photographs, etc., referred to in the Historian's report comprise 17 programs of various associations and occasions; 4 badges, 21 photographs and sketches of members; 8 sketches of members, no photographs accompanying; 423 photographs, and a large number of clippings relating to the associations and drug interests. The list is filed in the records of the Historical Section. It should be stated that Treasurer H. M. Whelpley was a large contributor, and many of the photographs came through him from the Ebert home.

F. L. Lewton, Acting Curator, Division of Medicine, U. S. National Museum, then addressed the Section on

A NATIONAL PHARMACEUTICAL COLLECTION.

The question of collecting and preserving in the United States National Museum at Washington, D. C., such historical objects connected with the beginning and early history of pharmacy in the United States as are now obtainable is one which has received a great deal of thought and consideration by the officials of the Institution.

In 1904 Professor Edward Kremers, Chairman of the American Pharmaceutical Association's Committee on Historical Pharmacy, addressed a communication to the Secretary of the Smithsonian Institution inquiring concerning the advisability of establishing a pharmaceutical section in the Museum. The correspondence on the subject was continued by Dr. Murray Galt Motter when he became chairman of the American Pharmaceutical Association Committee on Proposed Collection at Washington. From the very first the National Museum was anxious to acquire such collections of historical material as were controlled by the American Pharmaceutical Association. However, at that time the new Museum building had not been erected and there was not space in the old building to house the material. It was of course necessary for the matter to be held in abeyance until the new building was completed. At about this time Dr. J. M. Flint, who had been Honorary Curator of the Division of Materia Medica (now the Division of Medicine) since 1881, tendered his resignation. This caused a further delay in the negotiations

with a view to obtaining pharmaceutical material, and no further action appears to have been taken in the matter until January, 1917.

On January 31, 1917, at the request of the President of the Washington Branch of the American Pharmaceutical Association, Mr. F. L. Lewton, Acting Curator of the Division of Medicine, addressed the local branch on "The Opportunity for Developing Historical Pharmacy Collections at the National Museum," and asked for the assistance of the Washington Branch. This address resulted in the appointment of a committee which brought the subject before the Association at the Indianapolis meeting. A committee of the Council was appointed to investigate the facilities of the National Museum for caring for such collections as are the property of the American Pharmaceutical Association, and I understand that a favorable report was made.

It might be well to point out in a brief way what the Division of Medicine has accomplished since its establishment and to say something with reference to the contemplated plans for its development. Soon after the division was established efforts were made to procure a full collection of the materia medica of the world. The attempt to obtain a complete collection of the official pharmacopoeias of all nations, met with great success and from these were compiled, for use in the arrangement of the collections, a list of all the articles of the materia medica of the world and the authorized preparations of each. A large amount of drug material had been obtained from the Centennial Exhibition, and great assistance in building up the collections was rendered by Schieffelin & Company, New York City; Parke, Davis & Company, Detroit; McKesson & Robbins, New York; Wallace Brothers, Statesville, North Carolina, *et al.*

For the reason that the general public is not interested in a large series of scientific specimens installed in glass jars it was decided that the greater part of the materia medica collections be installed as a study or reference series, separate from the exhibition material, where it may be consulted by students and others interested in the subject. This separation was made during the present year and at the same time a reclassification of the collections illustrating materia medica according to the best modern classification was begun.

The collections of the Division of Medicine have recently been grouped into four classes: The History of Medicine, Materia Medica, Pharmacy, and Sanitation and Public Hygiene. The classification adopted to illustrate the History of Medicine is intended to show the evolution of the healing arts and includes: Magic Medicine, Psychic Medicine, Physical or External Medicine, Physiological or Internal Medicine, and Preventative Medicine. Objects illustrating the history of Indian, Egyptian, Chinese, Greek and Roman Medicine appear in the order named. The history of medicine in America is presented pictorially in the form of biographical sketches and photographs of prominent medical men since the settlement of Jamestown. This section will be developed by the addition of material illustrating in a simple and brief manner the basic principles of the different schools of medicine.

A number of important accessions to the materia medica collections were obtained during the past fiscal year. Armour and Company of Chicago contributed some fine specimens illustrating the subject of Organotherapy. Fairchild Brothers and Foster of New York City donated material showing the progressive steps in the manufacture of Pepsin. Some exceptionally good specimens of crude vegetable drugs were contributed by Gölpin, Langdon & Company, Inc., of Baltimore Maryland. The museum is indebted to Merck and Company of New York City for specimens of chemicals which were made synthetically, and to the Heyden Chemical Works of New York, New York, for the contribution of specimens of synthetic medicinal chemicals. Frederick Stearns and Company of Detroit, Michigan; Hoffman-LaRoche Chemical Works of New York City, Roessler & Hasslacher Chemical Company of New York City, and the William S. Merrell Chemical Company of Cincinnati, Ohio, also rendered valuable assistance during the past fiscal year by the contribution of material for the materia medica collections. It is proposed to illustrate the development and modern application of serumtherapy, vaccinertherapy, etc., and specimens and charts for this purpose are being prepared for the National Collections. The Section of Sanitation and Public Hygiene has grown slowly and as a beginning there has been illustrated the composition of the human body, with additional exhibits showing the daily income and outgo of foodstuffs and waste products. Coöperation with other Government Departments is already under way in the preparation of exhibit material dealing with subjects already in the public mind, as for example, the prophylaxis against typhoid fever now being practiced by the military forces, etc.

The Section of Pharmacy having been only recently established but very little material has been obtained relative to this subject. The beginning of medicine and pharmacy are so closely co-related that it is nearly impossible to separate one from the other. The classification as given in the beginning of Wooten's *Chronicles of Pharmacy* is practically the same as that of the Museum's collections arranged to illustrate the history of medicine. Specimens of modern medicinal forms have been promised for the Section of Pharmacy.

A great expansion of the pharmaceutical library has been made through the transfer from the Hygienic Laboratory, Department of the Treasury, of a large number of books and periodicals relating to the subject of pharmacy, etc. Two rooms have been assigned for use as a pharmaceutical library. Shelves have been placed in the rooms, upon which the books are placed and arranged so they can be readily consulted. Desks and chairs will be provided for the use of persons visiting the library.

Now that we have pointed out briefly what has been accomplished by the Division of Medicine, and have mentioned some of the plans for its development, it will be clear that its future success will depend to a greater or less extent upon the coöperation of pharmacists, pharmaceutical manufacturers and pharmaceutical societies and associations. The National Museum is the authorized place of deposit for all objects of natural history, mineralogy, geology, archaeology, ethnology, etc., belonging to the United States or collected by the Coast and Interior Survey, The Geological Survey, or by any other parties for the government of the United States, when no longer needed for investigations in progress. There is ample space in the National Museum for the collections of the American Pharmaceutical Association, and for this reason it was deemed advisable to have the matter brought to the attention of this Convention. It will also be appropriate at this time to state the conditions under which the exhibit material can be accepted by the Museum. The National Museum would prefer, wherever possible, that specimens be offered as outright gifts, but where this is not desirable or feasible, it will gladly accept as loans or deposits, valuable material. It is customary for loans to be accepted with the understanding that they will be left undisturbed for a year or more, while deposits are usually made for a longer indefinite period. The Museum cannot bind itself to permanently install any exhibit, or to keep any certain assemblage of specimens always exhibited to public view. It can, however, agree to safeguard them and keep them available for examination and study whenever desired. In order to avoid duplication of material, the Museum would request that all exhibits offered it as gifts, loans or deposits, be first arranged for by correspondence, and the submission of a list or inventory giving an idea of the character and quantity of the material offered.

Washington is the mecca to which come, sooner or later, the people of the United States. About 400,000 persons each year visit the National Museum. Should not the precious relics of the beginnings of Pharmacy in this country be placed where all can see and enjoy them?

DISCUSSION.

F. J. WULLING: It seems to me that here is an opportunity which we ought to accept quickly and without question. I say this in a way, observing the question of details, of course.

It seems to me only great profit can grow out of it, for both the American Pharmaceutical Association and also the Institute.

EDWARD KREMERS: I can only say a word in regard to the text that I adopted for my Report of the Committee on Research of the American Pharmaceutical Association, that all things come to them who wait. After having waited many years, I am more than pleased to have the Representative of the National Museum here to-day. For years it seemed impossible to secure the coöperation of the Institute, and when we would approach them, we were told that we would have to wait until the building was completed.

As Historian ten years, I collected a considerable quantity of material, but naturally we had to restrict ourselves to such material as did not occupy very much space, and as the present Historian has told you, the material that he has collected is mostly all small things, such as photographs, sketches, and things of that sort, rather than objects that are very bulky. Now that the National Museum has provided for exhibits, it seems to me that we ought to begin to collect systematically along other lines.

What pleased me more than anything else is the statement made by Mr. Lewton, that the National Museum of Pharmacy is to be placed on an equal footing with Medicine. What can be done along this line has been demonstrated not only by the Museum in London, but also

the *Materia Medica* collection in Paris and collections elsewhere. So it is about time that the National Museum should fall in line, and it is certainly gratifying that after these many years of waiting we should have a Representative here from the National Museum and we hope they will annually send a representative to the Historical Section meetings of the American Pharmaceutical Association. Possibly some of the officers of the Association may be willing to request that they attend, in order that we may remain in constant touch with them, especially the Historian of the American Pharmaceutical Association.

The following papers were read:

A History of Glassware—Ancient and Modern, by W. W. Figgis.

Reminiscences of the Origin of Laws and Organizations; Origin of Some Pharmaceutical Associations; Recollections of How the First Narcotic Law in Illinois Originated; by Wilhelm Bodemann.

Pharmacologic Assaying, Historical and Descriptive, by Herbert C. Hamilton.

The Chairman appointed the following Nominating Committee: E. G. Eberle, John G. Godding and Edward Kremers.

Next followed an address on Ebert, Hallberg and Oldberg, illustrated by lantern slides, by H. M. Whelpley. The speaker denominated the address "a talk;" it was far more; during many years of association with the subjects he had learned to know them intimately, and he spoke largely from such intimate knowledge of their personal traits and qualities.

The Historian stated that the Historical Section was growing more interesting each year and that the program of this session was replete with interesting papers and addresses. He suggested that hereafter there should be two sessions instead of one.

Chairman Sayre advised that another session of the Section would be held at 2.30 P.M.

SECOND SESSION.

Chairman L. E. Sayre called the second session of the Section on Historical Pharmacy to order at 2.30 P.M.

General Secretary William B. Day reported on the historical exhibit in the Association rooms of the Hotel. The interest of the members was shown by the many visitors. A list of the exhibits follows:

LIST OF THE HISTORICAL EXHIBIT MADE BY THE UNIVERSITY OF ILLINOIS SCHOOL OF PHARMACY.

Publications of the American Pharmaceutical Association:

Proceedings of the A. Ph. A. 1852-1911. (No meeting in 1861); Volumes 1 to 59.

Index to Proceedings of the A. Ph. A., 1851-1902, 1 volume.

Year Book of the A. Ph. A., 1912 to 1916, Volumes 1 to 5.

Bulletin of the A. Ph. A., 1906-1911, Volumes 1 to 6.

Journal of the A. Ph. A., 1912-1917, Volumes 1 to 6.

National Formulary: 1st Edition, 1888; 2nd Edition, 1896; 3rd Edition, 1906; 4th Edition, 1916.

Pharmacopœia of the United States of America, complete 1820-1910; 1820 (2nd. Ed. 1828), 1830 Philadelphia Ed., 1830 N. Y. Ed., 1840, 1850, 1860, 1870, 1880, 1890, 1900, 1900 Spanish Ed., 1910.

Pharmacopœia of the Massachusetts Medical Society, Boston, 1808.

The United States Dispensatory, complete Editions 1 to 20, 1833-1918.

Galen's Works, 7 volumes, Venice, 1556.

Sydenham's Opera Medica, Venice, 1762.

Dalecampii Historia Generalis Plantarum, Lugduni, 1587, 2 volumes.

Fauna Suecica, Linnaeus, Stockholm, 1746.

Flora Suecica, Linnaeus, Stockholm, 1745.

Historie Generale des Drouges, Paris, 1735,
2 volumes.

Basilica Chymica, Crollius, Prague, 1608.

The Druggists Manual, compiled by direc-
tion of the Philadelphia College of Pharmacy,
Philadelphia, 1826.

Medicinal Edict, Prussia, Berlin, 1725.

A Compendious Medical Dictionary, R.
Hooper, London, 1799.

Observationum de Aëre et Morleis Epidemi-
cis. Joanne Huxham, London, 1752.

The Elaboratory Laid Open, or the Secrets
of Modern Chemistry and Pharmacy Revealed,
London, 1758.

Pharmacopoeia Edinburgensis, 3rd Edition,
London, 1737.

The Universal Medicine, or the Virtues of
the Magneticall on Antimoniäll Cups, John
Evans, London, 1642.

Chicago Pharmaceutical Collection:
Prescription Book, 1849.

Recipe Book.

I. Ph. A. Register.

Mementos of A. Ph. A. Convention at Chi-
cago, 1868—Picture of 1868 Meeting.

Mementos of A. Ph. A. Convention at Chi-
cago, 1893.

World's Fair number of Western Druggist
(Oct. 1893).

Registration Book at the College Exhibit.

Biroth Picture, Local Secretary 1893.

Ebert Historical Exhibit: Case, Shelf Jars,
The Boar, Leech Jar, Balance, Replica, Bas-
relief, Faculty Picture, Alderman Card, Lec-
ture Notes—1863, Ebert Memorial Vol., Ac-
count Book, 1873, Ebert Correspondence,
Ebert Diplomas, Ebert Picture (Goodman),
Brass Mortar, Revision Committee Picture,
Ebert Cup (C. V. D. A.), Counter Balance.

C. P. Wimmer delivered an address, illustrated by lantern slides, on Edward
R. Squibb's Lecture Course in Pharmacy, 1869-1871.

The following papers were read:

Note on the Early History of Prescription Scheme Idea, by L. F. Kebler.

Biography of George Leis, by his son, E. R. Leis.

Missouri Pharmacy and the American Pharmaceutical Association, by Mitchell
Block.

Charles Holzhauser, by Edward A. Sayre.

The History of the New Jersey Pharmaceutical Association, by Edward A.
Sayre.—This contribution brings the History of the New Jersey Pharmaceutical
Association up to and inclusive of 1917, and contributed by the same author.

The Nominating Committee reported the following nominees for Section
officers:

Chairman—Hugo Kantrowitz, of New York.

Secretary—W. O. Richtmann, of Wisconsin.

They were unanimously elected. The Chairman stated that the Historian
was a permanent officer of the Association.

The request was made that an historical exhibit be provided for the New
York meeting next year.

The Section on Historical Pharmacy then was adjourned.