Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

THE CHAIRMAN'S ADDRESS.

OTTO RAUBENHEIMER, BROOKLYN, N. Y.

There is much more to pharmacy than the dispensing of drugs, the preparation of galenicals, the compounding of prescriptions and incidentally the sale of soda water, cigars, candy and postage stamps. There is a fascinating field of study, which shows the pharmacist the growth and development of his beloved profession, namely, the study of the history of pharmacy.

OTTO RAUBENHEIMER, CHAIRMAN.

The writer even goes so far as to make the bold statement that in order to truly love his profession, the pharmacist must necessarily be acquainted with its history.

Our A. Ph. A. is celebrating its sixtieth anniversary at the Denver Convention. Three score of years of fruitful work have passed, and during this time our A. Ph. A. has been one, if not the greatest, factor in the uplift and development of pharmacy from a mere trade to a profession, which is on equal footing with medicine. Truly a record to be proud of!

In connection with this sixtieth anniversary your Chairman of the Section on Historical Pharmacy considers it his privilege and also his duty to give a short

recapitulation of the history of the Section which at the same time celebrates its decennial anniversary. Besides this, I will endeavor to present a resumé of a great many newer historical events which should be recorded in the archives of the A. Ph. A.

HISTORY OF THE SECTION ON HISTORICAL PHARMACY, 1902-1912.

The great and general interest in the History of Pharmacy manifested at the Semi-Centennial Jubilee of the A. Ph. A. at Philadelphia in 1902, resulted in the appointment of a Committee on Historical Pharmacy, consisting of Prof. Edward Kremers as chairman, and E. J. Kennedy as secretary. The excellent report of this Committee, presented at the Mackinac Island, Mich., meeting in 1903, can be found in Vol. 51 of the Proceedings, pp. 531-542, and should be read and studied by all members interested in the history of pharmacy. The second report of this Committee was given at the Kansas City, Mo., meeting in 1904, and contains a very valuable compilation of a "*Bibliography of American Pharmaceutical History*." Proc., Vol. 52, pp. 428-430. By the establishment of a *Section on Historical Pharmacy* in 1904, with our beloved Albert E. Ebert as chairman, the recording of pharmaceutical history has taken a definite form in the A. Ph. A., and the yearly transactions can be found in the Proceedings.

As a matter of record and convenience, I have compiled a list of the officers of the Committee and the Section on Historical Pharmacy since their existence:

COMMITTEE ON HISTORICAL PHARMACY.

1902-1904 Edward Kremers, Chairman, and E. J. Kennedy, Secretary.

SECTION ON HISTORICAL PHARMACY.

CHAIRMAN.	SECRETARY.	HISTORIAN.
1904-1905—Albert E. Ebert.....	Caswell A. Mayo.....	Edward Kremers
1905-1906—John F. Hancock.....	C. S. N. Hallberg.....	Edward Kremers
1906-1907—Ewen McIntyre	Eugene G. Eberle.....	Edward Kremers
1907-1908—Edward V. Howell.....	Eugene G. Eberle.....	Edward Kremers
1908-1909—John B. Bond.....	Eugene G. Eberle.....	Edward Kremers
1909-1910—Eugene G. Eberle.....	John A. Dunn.....	Edward Kremers
1910-1911—Jos. L. Lemberger.....	Otto Raubenheimer....	Edward Kremers
1911-1912—Otto Raubenheimer	Caswell A. Mayo.....	Edward Kremers

BIBLIOGRAPHY.

Besides the excellent list of reference works on the history of pharmacy, chemistry, materia medica and medicine by one of our late members, Dr. Friederich Hoffman, published in the Proceedings, Vol. 52, pp. 462-464, your Chairman, a book-worm, by the way, begs leave to present an additional list, arranged in chronological order:

Dr. August Hirsch, Biographisches Lexikon der hervorragenden Aerzte aller Zeiten und Völker. 6 Volumes, 1884-1888. Urban & Schwarzenberg, Wien.

B. Reber, Gallerie hervorragender Therapeutiker und Pharmakognosten der Gegenwart. 1987; Paul Dubois, Geneve.

Sir Edward Thorpe, Essays in Historical Chemistry. 1902. MacMillan & Co., New York and London.

Herman Schelenz, Geschichte der Pharmazie, 904. Julius Springer, Berlin.

Ernstoon Meyer, History of Chemistry, from the earliest times to the present day. Third Ed. 1906. English by George McGowan, MacMillan & Co., New York.

Dr. Franz Strunz, Ueber die Vorgeschichte und die Anfänge der Chemie, 1906. Franz Deuticke, Leipzig.

- Prof. J. Berendes, *Das Apothekenwoesen*. 1907. Ferd. Enke, Stuttgart.
- Sir Edward Thorpe, *History of Chemistry*, 2 Vol. 1909. G. P. Putnam's Sons, New York.
- Dr. David Allyn Gorton, *History of Medicine, Philosophical and Critical*, 2 Vol. 1910. G. P. Putnam's Sons, New York.
- A. C. Wooton, *Chronicles of Pharmacy*, 2 Vol. 1910. MacMillan & Co., New York and London.
- Herman Peters, *Aus Pharmazentischer Vorzeit, in Wort und Bild*. Third Ed. Vol. I. 1910. Julius Springer, Berlin.
- Dr. James J. Walsh, *Makers of Modern Medicine*. 1910. Fordham University Press, New York.
- T. P. Hilditch, *A Concise History of Chemistry*. 1911. D. Van Nostrand Co., New York.
- Max Neuburger, *Geschichte der Medizin*. 1911. Ferd. Enke, Stuttgart.
- Dr. James J. Walsh, *Old Time Makers of Medicine*. 1911. Fordham University Press, New York.
- A. Tschirch, *Handbuch der Pharmakognosie*, Vol. I, Part 1 and 2 and Vol. II, Part 1. 1909-1912. Chr. Herm. Tauschnitz, Leipzig.

The latter, although not strictly a historical work, is included in this list, because it contains the history of Pharmacognosy or pharmakohistoria in Vol. 1, Part 2, and also the history of each drug in its respective monograph.

The extensive library of the writer contains these works and he will be more than pleased to be of help to his fellow-pharmacists, especially in their historical studies.

LITERATURE.

The number as well as the quality of historical papers during the fiscal year 1911-12 has been quite large. Hermann Schelenz, the German pharmacist and historian and author of the *History of Pharmacy*, quoted above, excels in this line, and I call special attention to his following papers: "Shakespeare Studien," showing his knowledge of pharmacy and medicine, read before the Section of History of Medicine and Natural Sciences of the *Deutsche Naturforscher* at their eighty-third annual meeting at Karlsruhe, September 24-30, 1911.

"Erfindung des Rückflusskühlers (Invention of the Reflux Condenser), *Chem. Ztg.* 1911. 416.

"Geschichte der Potio Riverii" (*History of Liquor Sodii Citratis*), *Ph. Zhalle*, 1912. No. 8.

Another very productive authority on historical subjects is Prof. Dr. Edmund O. von Lippmann, the author of the "History of Sugar," who contributed the following paper to the Section of History of Chemistry of the *Verein Deutscher Chemiker* at the Freiburg meeting: "Geschichte des Alkohols und Seins Namens (History of Alcohol and of Its Name), *Ztsch. Ang. Chem.* 1912. No. 23, p. 1179.

Among the other numerous historical papers in foreign journals I beg to call the attention of the chemist and the pharmacist as well to Diergart: *Ein Wort zur Wertung der Geschichte des Chemie* (One Word on The Value of History of Chemistry), *Ztsch. Ang. Chem.* 1911. No. 44, p. 2103.

P. Martell: *Geschichte der Chemischen Industrien Oesterreichs* (History of the Chemical Industries in Austria), *Chem. Ind.* 1911, p. 205.

The literature on pharmaceutical history in the United States is equally as im-

portant. Above all, let me call your attention to the excellent "Memoirs of An American Pharmacist," by one of our once very active members, the late James Winchell Forbes, which are published in monthly installments in The Midland Druggist and Pharm. Review. In connection with the sixtieth anniversary of the New Yorker Deutscher Apotheker Verein, the history of the society was published in its official organ, the Deutsch-Amerikanische Apotheker Zeitung of October, 1911.

I must not forget to mention the many valuable papers read and presented at the Boston meeting and printed in the JOURNAL under Section on Historical Pharmacy. The Branches of the A. Ph. A. have also taken an interest in this work, as shown by the three papers on the "History of Pharmacy in Minnesota," by Prof. Fred J. Wulling, read at the June, 1912, meeting of the Northwestern Branch; "History of Cork," one of our daily commodities, by your chairman (Journal A. Ph. A., April, 1912), and "The History of Ointment Bases," by Dr. Eugen Unna (Journal A. Ph. A., July, 1912), the last two being read before the New York Branch. The United States is fortunate in having one of the best authorities on ancient medicine and pharmacy as one of its present residents, namely, the assyriologist and egyptologist, Dr. Felix von Oefele, a member of the New York Branch of the A. Ph. A. One of the recent historical papers from his pen is "Abyssinean Superstition in Gynecology," in Am. Medicine, June, 1912, p. 325, which is well worthy of attention, even by pharmacists.

ANNIVERSARY OF PHARMACEUTICAL AND CHEMICAL ASSOCIATIONS, 1910-1912.

On September 4, 1910, the old and honorable Société de Pharmacie d'Anvers celebrated its seventy-fifth anniversary, at which a number of pharmacists were elected as corresponding and honorary members, Professor Remington being among the latter. A report of this anniversary can be found in Comptes Rendu due Xme Congrès International de Pharmacie à Bruxelles, 1910, pp. 385-389.

In October, 1911, the New Yorker Deutscher Apotheker Verein, the oldest pharmaceutical society in the United States, celebrated its sixtieth anniversary in true German fashion, by a ball with ladies and by a "kommers" with beer. At the latter event two prominent men in the A. Ph. A., namely, Professor Remington and Professor Lloyd, and also the present president of the A. M. A., Dr. Jacobi, were elected as honorary members.

On November 9, 1911, the Allgemeine Oesterreichische Apotheker Verein celebrated its fiftieth anniversary. An illustrated book of 65 pages was published for this occasion, containing the history of the association, its pharmacy school, its chemical, bacteriological and its food laboratory, and its Journal, the Zeitschrift des Allgemein. Oesterreich. Apotheker Vereines.

The Verein Deutscher Chemiker celebrated its twenty-fifth anniversary at Freiburg on May 29-June 2, 1912. Is it not a strange coincidence that phenacetin was recognized as an antipyretic at Freiburg and that sulphonal was discovered and proven to be a hypnotic by Prof. E. Baumann at this very same university town where the German chemists celebrated their silver jubilee. The New York Section of the Verein Deutscher Chemiker will celebrate the anniversary of the society on August 31-September 2, 1912.

In June, 1912, the Association of Druggists (not pharmacists) of Alsace-Lor-

raine celebrated their tenth anniversary at Strassburg and published on this occasion a book by H. Hofstetter, containing not only the history of the society, but also of Alsace-Lorraine and of Strassburg, etc.

With the present meeting in Denver the A. Ph. A. has reached the age of sixty years, three score of years of hard but fruitful work for the benefit of professional pharmacy,

INTERNATIONAL CONGRESSES OF PHARMACY.

The tenth International Congress of Pharmacy was held at Brussels on September 1-5, 1910. Practically all countries were represented by delegates and membership. It is a pleasure for me to state that quite a number of members of our A. Ph. A. were elected as honorary or corresponding members of the congress. As a matter of record I herewith give a tabulation of the International Congresses of Pharmacy thus far held:

I. Braunschweig, Germany.....	September 15-17, 1865
II. Paris, France.....	August 21-24, 1867
III. Wien, Austria.....	August, 1874
IV. St. Petersburg, Russia.....	August, 1874
V. London, England.....	August 1-3, 1881
VI. Bruxelles, Belgium.....	August 31-September 6, 1885
VII. Chicago, U. S.....	August 21-23, 1893
VIII. Bruxelles, Belgium.....	August 14-19, 1897
IX. Paris, France.....	August 2-8, 1900
X. Bruxelles, Belgium.....	September 1-5, 1910

ANNIVERSARY OF UNIVERSITIES AND COLLEGES.

The University of Berlin celebrated its centennial in 1910 and Prof. Dr. H. Thoms, director of the Pharmaceutical Institute of the University, published an illustrated book of 134 pages, showing the development of pharmacy during these one hundred years and giving a very complete description of the up-to-date, modernly equipped pharmaceutical college. In connection with this it is but fair to mention that the centenary of the oldest College of Pharmacy in the United States, that of Philadelphia, will take place in 1921, and that a committee is already at work now so as to arrange for the proper celebration of this important historical event.

To all these associations and colleges and congresses the chairman of the Historical Section of the A. Ph. A. and its members wish a hearty

"Vivat, crescat, floreat!"

ANNIVERSARY OF JOURNALS.

With the close of 1906 the Druggist Circular completed its fiftieth year. In January, 1907, the Golden Jubilee number was published, which contained a biographic sketch of the journal, and among others the following historical essays:

- Fifty Years of Battling for Pharmacy Reform, by Dr. Eccles.
- Fifty Years of Pharmacy, by Prof. Remington.
- Fifty Years of Chemistry, by Prof. Scoville.
- Fifty Years of Materia Medica, by Dr. Rusby.
- Fifty Years of Pharmaceutical Teaching, by Prof. Kremers.

In 1909, the Journal de Pharmacie et de Chimie, of Paris, reached the venerable age of 100 years. On this occasion the editor, Prof. Emile Bourguelot, published

a booklet illustrated with 32 portraits, "Le Centenaire du Journal, 1809-1909," *Histoire du Journal et Notices Biographiques*."

On July 1, 1909, the Golden Jubilee number of the *Pharmazeutische Zentralhalle* appeared containing a reproduction of the very first page of July 7, 1859, with an article on Trimethylamine, by Hermann Hager, its founder and editor and master of pharmacy at that time. Hermann Schelenz, the German pharmaceutical historian, wrote the "Werdegang" of the "Zentralhalle," which is published in the jubilee number.

The "Chemist and Druggist" of London, published its Jubilee number and Summer Issue on July 31, 1909, together with a replica of the first number of September 15, 1859. The reading matter, the advertisements and the price current, f. i. Quinine Sulphate 1 oz= 7s. 3d., in this "replica" are certainly very interesting. The "Jubilee Number" gives a complete history of the "Chemist and Druggist" from 1859-1909 and is well illustrated.

In 1910 the "Apotheker Zeitung," of Berlin, the official organ of the Deutsche Apotheker Verein, reached the age of 25 years, and the "Sueddeutsche Apotheker Zeitung," of Stuttgart, became 50 years old.

In 1911 the "Zeitschrift für Analytische Chemie" celebrated its Golden Jubilee and published photoengravings of Prof. Remigius Fresenius, its founder in 1861, H. and W. Fresenius and E. Hintz, the present editors.

As a matter of record I herewith also give the age of several other foreign pharmaceutical journals in 1912:

Journal der Pharmazie für Elsass-Lothringen.....	39 years
Pharmazeutische Post, Wien.....	45 years
Pharmazeutische Zeitung, Berlin.....	57 years
British and Colonial Druggist, London.....	62 years
Pharmaceutical Journal, London.....	71 years

CENTENARY OF CELEBRATED PHARMACISTS, CHEMISTS AND BOTANISTS—ANNIVERSARY OF IMPORTANT DISCOVERIES.

These are two very important subjects and in order to do them justice your chairman promises you a paper on each for next year's Historical Section. I can, however, not let this occasion pass without reminding you that just about one hundred years ago marks the beginning of the discoveries of our important alkaloids.

Your chairman has presented this somewhat lengthy, but nevertheless condensed, resume with the chief aim of proving the desirability, in fact necessity, of the

KNOWLEDGE OF PHARMACEUTICAL HISTORY.

That scientists, old and new, hold this view is shown by the following abstracts:

Ferdinand Hoefer, in the introduction to his still valuable "Historie de la Chimie," 1842, states: "I have always thought that the best method of popularizing scientific studies consists in presenting, as in a panorama, the different phases a science has passed through from its origin to its present condition."

Wilhelm Ostwald, the pioneer in the field of physical chemistry, makes the following statement of the importance of historical studies for the understanding of the science: "There is no more effective means of vivifying and deepening the study of a science than to *saturate one's-self in its history*."

The paper by Diergart, "Ein Wort zur Wertung der Geschichte der Chemie," above referred to under literature, can well be applied to the value of pharmaceutical history.

In the opinion of your chairman, there are many signs that, among the rising generation, there is an increase of the historical sense with regard to the sciences and quite especially to chemistry and pharmacy.

INCLUSION OF PHARMACEUTICAL HISTORY IN THE CURRICULUM OF OUR COLLEGES.

Above all it is the duty of the pharmacy schools and colleges to include pharmaceutical history in their curriculum, and thus plant into the student the seed which will germinate and give him a knowledge of the history of pharmacy and thereby increase his love for the profession.

At the convention of the German Naturalists and the Association for History of Medicine and Natural Science, at Koenigsberg, in 1910, Dr. S. Guenther, of Munich, made the very true statement that the study of history of a science which is generally considered a learned sport is chiefly intended for beginners. He referred to the former lectures by Poggendorff on the history of physics, by R. Wolf on the history of astronomy and by Cantor on the history of mathematics. He deplored the fact that the study of the history of sciences is not practised to a greater extent. The associations resolved to ask the faculties of the German Universities that questions on the history of the different branches of natural sciences should be included in the examinations, and furthermore that for this purpose a course of special lectures should be given.

Your chairman in his enthusiasm believes that such measures should also be adopted in the United States and that a similar recommendation should be made by the Section on the History of Pharmacy of the A. Ph. A., the first pharmaceutical association in the entire world which has established and successfully maintained such a section. I might point out that chairs on the history of chemistry have been established at the Universities of Berlin, Heidelberg, Erlangen, Dresden, Vienna, Basel, Berne, Riga, Christiania.

Therefore why not follow this good example in pharmacy? Thus far one college of pharmacy, the one connected with the University of Wisconsin, has given a series of lectures on the history of pharmacy from the ancient times to the present condition in the United States and elsewhere. Professor Kremers, our Historian, is certainly to be complimented on this innovation!

In the opinion of your chairman even a few extra lectures on pharmaceutical history in the junior, senior or graduate course would greatly aid to give the student a better understanding of the origin and the development of his profession.

USES OF PHARMACEUTICAL HISTORY.

Pharmaceutical history by no means is a "dead" knowledge, like Greek or Latin, but can be utilized daily in pharmacy, not only theoretically but also practically. To illustrate this I beg to present the following as written on a prescription only a few days ago:

"Sulph. Alkal. Jesuit."

Without a little knowledge of the history of cinchona or "Jesuit's bark" it would be impossible to decipher; this synonym as the sulphate of the alkaloid of cinchona or in other words "*quinine sulphate*."

Hundreds of other similar examples might be given, showing the necessity of historical knowledge in the routine of pharmacy. And from a commercial point of view I beg to point out my paper, "Pharmaceutical Window Displays," read at the Boston meeting and published in the *Journal A. Ph. A.*, August, 1912, p. 866, showing that even a limited knowledge of pharmaceutical history can be utilized to a great advantage by the pharmacist in preparing interesting window displays, displays which are educational, displays which must necessarily impress the public as well as the medical profession, displays which are bound to raise the estimation and confidence in the pharmacist and improve his standing in the community.

How interesting historical events in pharmacy are can be seen by the "Retrospect of Fifty Years Ago," in the "*Chemist and Druggist*" and "Reprinted Seventy Years Ago" in the "*Pharmaceutical Journal*."

HISTORICAL COMMITTEES OF THE BRANCHES.

As far as your chairman can learn none of the Branches of the A. Ph. A. have a "Committee on Historical Pharmacy," which however is equally as important as the other committees. The Philadelphia College of Pharmacy holds the record of having a historical committee which, in February, 1908, published an illustrated 40-page brochure, "The Faculty of the P. C. P."

Thus far two State Associations have historians which are doing good work, namely, Mr. Edw. A. Sayre, of New Jersey, and Miss Lum Shipe, of Texas.

VETERAN TEXAS ASSOCIATIONS.

In a recent postal card received from friend Bodemann he asks, "Why has the A. Ph. A. a Historical Section?" He seems to think that by the establishment of veteran druggists' associations we could do without the Historical Section. While your chairman admits that the Chicago Veteran Druggist Association has done splendid historical work since 1898, he cannot subscribe to Bodemann's idea, but believes that Veteran Druggists' Associations should be formed in different parts of the United States and should help and work in harmony with the Historical Section of the A. Ph. A. More about Bodemann's "Veteran Associations" can be found in *Proc.*, Vol. 58, p. 1294.

PHARMACEUTICAL COLLECTIONS AND MUSEUMS.

The oldest collection of drugs, and drugs from the "new world" was the museum at Sevilla by the Spanish physician, Nicolas Monardes, in 1554. Among the many pharmaceutical museums, especially those of Berne and Zurich, in Switzerland, I also beg to point out the one of the Allgemeine Oesterreichische Apotheker Verein, in Vienna, which was started in 1864, and contains many curiosities. The Germanic Museum, in the old historic city of Nuremberg, the home of the first modern pharmacopoeia or dispensatory, namely, by Valerius Cordus, must not be forgotten. Through the efforts of the historian Hermann Peters the Deutsche Apotheker Verein appropriated the sum of 500 marks annually for 10 years. With this fund, together with collections by other pharmaceutical societies, a historical "apotheker" was erected in the museum, which holds a world-wide reputation. In the United States we have the National Museum at

Washington, which contains a large drug and plant collection, which should be of special interest to pharmacists. Let us hope that in the near future our A. Ph. A. will have a home of their own, in which the archives and historical collections will be safely housed.

LIBRARIES.

It is generally admitted that the library of the average druggist and also pharmacist is a disgrace. And even some of our pharmacy schools can be censured. But other colleges of pharmacy, and I point out Philadelphia and New York as models, are to be highly commended. It should become better known among pharmacists that we have one of the finest and largest libraries in the world in the United States, namely, the Lloyd Library in Cincinnati. This is devoted exclusively to a library of botany and pharmacy and pharmacists should make use of the generous offer of Professor Lloyd to obtain information on these subjects, gratis. The Lloyd Library at present is publishing an index catalogue of the works on botany.

CONCLUSION.

This rather lengthy address has the main object of arousing more interest in the Section and also to prove that pharmaceutical history is not well-nigh forgotten. The collection of a vast amount of material gathered all over the United States is of great importance and should be made a special feature of the Section. And besides this, our foreign members should be asked to contribute to the Historical Section.

Your chairman, with the aid of the other officers of the Section, has prepared a program which he trusts will please the members. To my greatest regret I am unable to arrange my business affairs in such a manner so as to be with you at the Denver meeting and take an active part in the discussions.

This being the decennial anniversary of the Section, I have prepared ten recommendations, which I herewith submit:

RECOMMENDATIONS.

1. The papers of the Section should be published in the JOURNAL A. Ph. A., as by such publicity greater interest will be aroused in historical pharmacy.

2. The Historian should be asked to prepare an index of the material which has accumulated during the 10 years of existence of the Section, and a reasonable sum should, of course, be appropriated for the clerical work.

This index should be kept up-to-date by adding the contributions each year in alphabetical order.

3. The incoming officers should communicate with the local Branches, as to appoint a Historical Committee in each Branch and thereby help to collect material and to write up the history of Associations, Boards, Colleges, etc.

4. They (incoming officers) should also be asked to enter into correspondence with the State Pharmaceutical Associations and recommend the appointment of a Historian for each state.

5. It is the sense of this Section that pharmaceutical colleges be asked to include pharmaceutical history into their curriculum.

6. The correspondence of the office of the President, as well as other officers, should be transferred to the Historian, so as to be preserved in the archives. This innovation was created by President Eberle at the Boston meeting, 1911.

7. Arrangements should be made with the present and the former pharmaceutical members of the Council of Pharmacy and Chemistry of the A. M. A., so that upon their death the bulletins of the Council should be transferred to the archives of the A. Ph. A. These bulletins will, in future years, give a deep insight into American pharmacy that will be unobtainable in any other way. My thanks are due to Professor Puckner, who made the excellent suggestion.

8. Veteran Druggists' Associations should be established in the larger cities, as they would be specially helpful in preparing biographies of the members.

9. Two sessions of the Historical Section should be held and at the evening session an illustrated historical lecture should be given as inaugurated by Professor Kremers at the Boston convention.

10. In order to obtain the names of the members who are interested in the Historical Section a membership list should be compiled.

I trust that these recommendations will be duly considered and to some extent enacted, so as to make the Historical Section of the A. Ph. A. a lasting success and thus prove that even in this age of commercialism there is more to pharmacy than theory and practice, namely, its history, and that after all

"The history of a science is the science itself!"

Brooklyn, N. Y., August 10, 1912.