THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

"The following paper by Dr. Edward Kremers entitled, 'Introductory Lecture to a Course in History of Pharmacy,' was presented at the Madison meeting of the American Association of Colleges of Pharmacy. Its importance from the standpoint of history was at once recognized and the Association voted that the paper should be printed in this Section of the JOURNAL OF THE A. PH. A. in order to give a wider distribution. It is with great pleasure that the Editor presents this historical material by Dr. Kremers."—C. B. JORDAN, *Editor*.

INTRODUCTORY LECTURE TO A COURSE IN HISTORY OF PHARMACY.

BY EDWARD KREMERS, UNIVERSITY OF WISCONSIN.

Frequently I have been asked to write a history of pharmacy. Quite aside of personal limitations and the want of necessary leisure, it has seemed to me that we are not prepared to write a history. What we are sadly in need of is detail work which may serve as building material for a future historian. True we have several valuable treatises that either style themselves history or are regarded as such. Even the ponderous tome of Schelenz, a valuable reference work because of the twenty-five thousand primes in its index, is not a history in the true sense. History is not a chronicle of events arranged according to centuries, any more than science is a collection of facts, no matter how well arranged.

Having refused again and again to attempt to write a history of pharmacy, I was happy to respond to a request made by the Chairman of our Executive Committee to read a paper on the "Teaching of the History of Pharmacy," moreover to present such a paper here in Madison where it might be supplemented with illustrative material. Even before the request came to me, I had jotted down certain ideas which, it seemed, might serve as an introductory lecture to a course on the History of Pharmacy. These notes I have supplemented for this occasion with the briefest possible outline of a year's course. If after having presented to you this subject you are sufficiently interested therein to want to know about particular details I shall be happy indeed to discuss these with you, either individually or collectively, using the material here exhibited for the purpose of illustration. The student of history of medicine is apt to regard pharmacy as an offshoot of the practice of medicine. Indeed, there are representatives of the calling to-day who look upon it as one of the many specialized departments of medicine. On one occasion, LaWall appears to have taken satisfaction in telling the physicians of Philadelphia that pharmacy came first, hence medicine developed out of it. Friendly rivalry may be tolerated even in history, but the serious discussion concerning the priority of medicine over pharmacy, or vice versa, seems to be about as futile as the quarrel which was first, the hen or the egg. The fact is that history teaches us that both had a common origin, *viz.*, in the animal instincts of primitive man.

Wild animals to-day bathe their wounds in water or cover them with a layer of

mud. Domesticated dogs lick their wounds, other animals relieve internal disorders by fasting. The "Heilinstinkt" manifests itself in a variety of ways. When Kristin, the daughter of Lavrans, is described by Sigrid Undset as licking the pus that prevents her infant from opening his eyes, she practices that animal instinct referred to. As hunter and warrior, primitive man bore most of the wounds, but it was primitive woman, as wife and mother, who acted as nurse to her husband and child.

Wounds, also skin affections due to insects, were external and, while not always curable, did not partake of the element of the mysterious. The cause was readily apparent. The remedy, *viz.*, washing, or the application of a poultice of green leaves or comminuted fresh bark, or the application of an animal fat, was no more mysterious. It was different with internal disorders. In nature that surrounded man on all sides, he recognized evil as well as beneficent forces. They were his superiors. To the beneficent he rendered thank offerings. To the evil ones he rendered offerings of atonement, he even fought them. Nature gave him food and drink, the givers of which man personified; it also sent the destructive lightning which likewise he personified. The evil demon sent his equally evil spirits to plague man in the form of disease. Hence, disease was cured by driving out the evil spirit.

If in the first step of the development of primitive medicine and pharmacy the methods employed were natural, the second step in the development of combating disease partook of the supernatural. The original healer, in the person of wife and mother, was supplemented by a person of superior attainment, the priest and medicine man. Though appealing to the religious beliefs of the people, the new healer did not discard the earlier material practices of mankind, but extended his observations not only with regard to man's physical defects, but also with regard to the remedies which nature provided. What is more, he learned to improve on the preparation and modes of administration of these remedial agencies.

In the development of human society, both groups of healers have played important rôles and play them to this very day. Not only may we study the practices of both among primitive peoples in our own day and age, but the settling of this continent and the westward movement have demonstrated again and again the persistence of both types in more advanced, yet pioneer, society. However, it appears to have been in Greece during the height of her civilization that a separation of lay medicine from temple medicine took place. True, even in Egypt irregular practitioners had existed at least a thousand years earlier. The "Papyrus Ebers" is said to have been the formulary of such a lay practitioner, but he was irregular, hence had no social status such as that enjoyed by the priest mediciner. It was Hippocrates who, during the latter part of the fifth century and the early part of the fourth century B. C. raised independent medicine to its high standing. True, not all lay practitioners attained a social status, for not a few, even later in Rome, were Greek slaves. Yet there developed a medicine that discarded supernatural practices, and based its doings more and more on natural observations.

While this is true, it is equally true that Greek medicine was influenced profoundly by the philosophical speculations of the age. Thus, comparable to the general theory of the four elements there developed the specialized theory of the four cardinal juices of the human organism. The remedial agents, the materia medica, underwent a like classification. Both theories were perpetuated for more

than a millenium and are reflected in modified form in the theories of Paracelsus. The perfect mixture of the four humors was said to bring about eucrasia (ευ well, and κρασι to mix); their imperfect mixture dyscrasia (bad). These speculations constitute the foundation of the humoral theory favored by Vesalius and recognized by medical practice for centuries.

During this high stage of medical theory and practice, the maxim was: Nature heals, the physician assists in the healing process. The sad aspect of the situation lay, it has been said, in the fact that it did not continue indefinitely. With Galen, who transferred his activities from Greece to Rome during the second century of the Christian era, ancient medicine is said to have come to a close. To him has been attributed the statement that the physicians no longer knew the medicaments which they administered because they left the preparation thereof to others. This segregation of pharmacy from medicine had not come about over night as it were. Even in Greece special root gatherers (rhizotomoi) and cutters, preparers of medicaments (pharmacopœi) and of ointments (migmatopœi), also sellers of medicaments (pharmacopoloi) and of ointments (migmatopoloi) had appeared upon the scene. In Rome there had likewise developed herbarii and others. Because some of these drug sellers occupied the Seplasium, they were known as seplasiarii. Like the Greek slaves practicing lay medicine, they were of low social status. Unlike the occasional Greek slave who was freed because of the medical services which he had rendered, we do not read of a Greek rhizotomos or a Roman herbarius who was thus elevated.

As already pointed out, ancient medicine had passed its zenith with Galen. True, there were many medical writers of note who came after him, but medicine partook of the common downgrade of Roman civilization. The conquest of Rome by the Germanic barbarians toward the close of the fiftieth century was but an outward expression of an internal decay. The Middle Ages that followed, while spelling stagnation so far as Mediterranean civilization was concerned, meant an awakening not only of the Arabic world but also of the vast transalpine countries of Europe. Medico-pharmaceutical practice of the primitive Celts and Germans had been largely in the hands of "wise" women and priests as was the case with other primitive peoples. With the spread of Christianity, the Christian priest replaced his pagan precursor. He was the bearer, not only of scholastic learning in general, but of medico-pharmaceutical knowledge in particular. Witness the building and garden plans of St. Galls with its medicinal herb garden separate from the culinary garden. Witness also the dispensary of the monastery Muri, now a part of the Schweizerisches Landesmuseum in Zuerich. However, the change from pagan to Christian civilization was not infrequently a surface change, not a more deep-seated change of heart. Pagan practices, medico-pharmaceutical as well as religious, centered about the descendant of the "wise" woman of an earlier civilization. Naturally, these practices were combated by the Christian priest and condemned as witchcraft. A worth-while picture of this combat has been drawn for us by Scheffel in his "Ekkehard," the monk from St. Galls who, on the Swabian Howentwiel, threatens the "Waldfrau" with the stake. They differed possibly less in their medico-pharmaceutical practices and the herbs they employed than in their religious attitude: the Christian prayer of the one and the heathen prayer, called incantation, of the other.

If at the beginning of this period medico-pharmaceutical knowledge and skill as well as general scholastic learning were primarily a possession of the monks, the time came when a pope forbade medico-pharmaceutical practice by priests. That of the monks continued far beyond the middle ages into modern times. This change in church attitude may have been brought about by the introduction of Arabian medicine into Christian monasteries. An account of this we find, *e. g.*, in "How Constantine, the African, Brought the Art of Medicine to the Christians," *viz.*, from Carthage in Africa to Salerno in Italy. If Greek literature was brought to Italy and thence to countries north of the Alps after the capture of Constantinople by the Turks, when Greek scholars sought refuge for themselves and their manuscripts in Italy and elsewhere, Greek medical texts had previously been spread over northern Africa and across the Mediterranean into Italy and Spain by the Moors. Not the original Greek, it is true—in this respect the medico-pharmaceutical renaissance differed from the later rebirth of classical Greek literature—but through Syrian and Persian translations and then into Arabic. Just as in ancient Greece lay medico-pharmaceutical practice had gained for itself a social position of its own as opposed to priestly standing, so during the middle ages, medicine and likewise pharmacy acquired footholds of their own quite independently of the monasteries and convents. With it came the separation of pharmacy from medicine as foreshadowed by the public apothecary shop of Bagdad in the 9th century and as it was further developed in some of the Italian cities as reflected in the edict of Roger of Sicily, and more particularly in the edicts of Frederick II, ruler of the Holy Roman Empire of the German Nation from 1215 to 1250. Not that the separation was complete. For a long time physicians and apothecaries were members of the same guilds. Moreover, the physicians for a long time constituted the ruling branch of the professions united in the same guild and lorded it over their former confrères even after the apothecaries were permitted to have their own guild.

A new era, however, was in the dawning. The discovery of a new continent widened the geographic horizon of man and thus prepared him mentally for other changes. The revival of classical learning seemed to bridge over the chasm so often referred to as the dark ages. The discovery of the use of individual type by Gutenberg made the printing press an instrument that exerted a most profound influence on the spread of ideas. The Reformation and the Counter-reformation were but ecclesiastical manifestations of the changes that were going on, not only in the religious world, but in the world at large. Medicine and pharmacy both shared in these changes from scholasticism to the renaissance in literature, art and the sciences.

The year in which the first voyagers to the West Indies returned witnessed the birth of one who was to exert a most profound influence on medicine and pharmacy as well as on chemistry. Theophrastus von Hohenheim, known to the scientific and literary world as Paracelsus, became the representative of the Nordic renaissance. The revival of classical Greek medicine *via* the Arabic school had prepared the way. Yet it was he who broke away from the Greek concepts of the crasia and humoral pathology. Nature, in and by the large, he regarded as the macrocosm, of which man, the microcosm, was a part and in whom the macrocosm was reflected.

In the place of the four so-called Aristotelian elements he accepted the three

commonly known as the Paracelsian elements, *viz.*, sulphur, mercury and salt. As all chemical processes in nature are represented by sublimation, combustion and incineration, so the processes of the human body. Yet, strange as it may seem, the distinctly chemical processes of digestion Paracelsus attributed to archæus, an incomprehensible something, a sort of spirit. He is also supposed to be responsible for generation and reproduction.

Just as Greek medicine regarded the normal human body as an equilibrium of the four humors, so Paracelsus looked upon the healthy human body as a proper combination of the three elements. Again, as the Greek physician corrected the defect by administration of a drug representing the defective humor, so Paracelsus corrected any defect in the deficient element by a medicament rich in that element.

Thus it came about that changes resulted in the materia medica. Indeed, Paracelsus preached that it was the duty of the chemist to produce medicaments rather than to transmute baser metals into nobler ones. Not that he did not believe in transmutation. Indeed he believed, after a fashion, in the four ancient elements as well as in the modern three. Thus it came about that mineral medicaments, which had been restricted for the most part to external application, were now recommended for internal use. This was revolutionary and resulted in a century-long feud between Galenist and Paracelsist.

By the time that Paracelsus began to teach his new doctrines, the exploration of America had made the old world acquainted with a number of new drugs first described by Monardes. Moreover, the discovery of the all water route to the East Indies had greatly cheapened oriental drugs (spices and aromatics) and had made them available to ordinary medical and pharmaceutical practice. Not only that, new processes looking toward the extraction of the quintessence of these drugs were introduced. As a matter of fact, such preparations as tinctures and extracts, aromatic spirits and waters, now commonly referred to as galenicals, were introduced by Paracelsus and his followers. Extraction and distillation were regarded as distinctively chemical processes.

If the physician's medical armamentarium was greatly enriched by pharmacognostical as well as chemical additions, the apothecaries' activities were equally enlarged. Just as the physician was rapidly outgrowing his diagnostical symbol, the urinal, so the apothecary outgrew, as it were, his mortar and pestle, the symbol of his art. With this change we enter upon that phase of modern pharmacy during which the apothecary shop became the cradle in which were rocked the infant sciences of chemistry and botany.

If thus we have hastily sketched some of the phases of development of the art and science of pharmacy, it does not follow by any means, that, with the ease of the spread of knowledge, made possible by the development of the art of printing with individual type, the progress of pharmacy in the several European countries was uniform. The subsequent development of the calling of the pharmacist depended as much upon political, social and economic conditions as upon the further development of the underlying sciences. Thus, whereas the status of chemistry, at the beginning of the nineteenth century, was much the same in England, France and Germany, the status of the apothecary in these countries differed greatly.

When we turn to the study of the development of pharmacy in the several countries, it seems reasonable to classify the history of pharmacy into ancient,

medieval and modern as does general history, for as already pointed out, the history of pharmacy reflects, not only the status of the underlying sciences, but the political, social and economic conditions of the respective countries as well.

Even if the time available for the study of the history of pharmacy were much greater than it is apt to be, it would be unwise to attempt to outline the development of pharmacy in all countries of antiquity. It may be well to restrict ourselves to Egypt on the one hand and Greece and Rome on the other.

So far as the middle ages are concerned, an outline of the development of Arabic pharmacy should suffice. Christian medieval pharmaceutical development may be touched upon later in connection with the several countries to receive consideration.

As to the modern period, no useful purpose will be served by attempting ever so brief a review of all European countries. The countries selected should represent as many special phases of pharmaceutical development at large.

A beginning may well be made with Italy from which the renaissance spread to the transalpine countries. Florence issued the first city-state pharmacopœia in 1498. Hence the study of the bible of the apothecary may be emphasized.

In connection with France, the development of guilds, first together with physicians and spicers, later independently, and finally the change from guild to college just before the outbreak of the French Revolution should receive special attention.

Germany next affords an opportunity to study the practice of pharmacy under direct state control: the concession, both personal and real.

Finally, England is a good example of laissez-faire and all that this implies.

While these fundamental phases of pharmaceutical development are emphasized, it does not follow by any means that other aspects of pharmaceutical history should be neglected. However, the mere memorizing of dates and names should not be indulged in. Moreover, while it seems expedient to stress the development of the official pharmacopœia in connection with Italy, that of the growth of guilds with France, etc., it should not for a moment be assumed that these phases of pharmaceutical development are necessarily peculiar to the countries mentioned.

Possibly one of the best educational methods to bring in the innumerable accessories, as it were, is to make use of the lantern slide. Pictures of men, of apothecary shops, of laboratories, of drugs, of the hundred and one other phases of the practice of pharmacy may thus be brought to the attention of the student.

While the lantern slide talk may well serve the purpose of stimulating a general interest, it should not be regarded as an equivalent of home study. For this purpose the topic may be used to advantage. It will not only supply the necessary substance, but it will enable the instructor to induce the student to acquaint himself, in a measure at least, with the literature on the history of pharmacy. In order to do this, the instructor will have to collect for years the material that has become available. Mere reference to one or the other of our so-called histories of pharmacy will scarcely be satisfactory.

Having thus reviewed, though ever so briefly, the development of modern European pharmacy during the first semester, the second semester may be devoted to a somewhat more detailed study of the development of American pharmacy. New Spain, New France, New England, New Netherlands and even New Sweden

afford opportunities to study the contributions which these countries have made to American pharmacy, also what contributions to American materia medica their exploring representatives carried back to Europe.

The Revolutionary War affords an opportunity to touch upon the army hospital apothecary, an institution imported from England, not from the European continent.

With the period of reconstruction after the Revolution, there begins that westward movement of the frontier, each wave of which saw revived the frontier conditions in which the wife and mother was the family healer, the missionary not only a healer of the soul but of the body as well, in which the drug store scene described by Cooper in "The Pioneers" was reënacted again and again.

While history repeated itself on the frontier, it also repeated itself, though in modified form because of modified conditions, in the more settled states along the Atlantic seaboard. The organization of the College of Apothecaries in Philadelphia in 1821, changed after a year to a College of Pharmacy, reflects the changes in French organization from guild of apothecaries to college de pharmacie of a generation previous. The P. C. P. was not, as now commonly considered, an educational institution, but a closed corporation which, it is true, conducted an evening school for the apprentices of its members, as it maintained a library, a museum and, somewhat later, a journal.

The influx of German apothecaries before and after forty-eight not only brought a better educated type of apothecaries to this country, but with them the idea of state control. State control in turn was preceded by the organization of state associations, a movement stimulated by the AMERICAN PHARMACEUTICAL ASSOCIATION which had been organized in 1852. State legislation, which followed state organization, paved the way to our present status. While the state boards kept out those completely incompetent, their low educational standards are, no doubt, responsible for the present unsatisfactory conditions as to rank and file.

Having referred to present economic conditions, it may be well to indicate the turning point between the old and the new. If in King Phillip's War the medicine chest of Surgeon Locke proved inadequate, the Revolutionary War demonstrated still more strikingly the inadequacy of the drug store as a provider of medicaments for large bodies of men. However, it remained for the Civil War to set into motion the wheels of pharmaceutical industry, at least in the North. This development against which the retail druggist fought unsuccessfully for a generation, changed the economic foundation of pharmacy and with it commercial practice. Whether the socialization of all health institutes will once more revolutionize the American drug store remains to be seen.

Thus one phase after another of American pharmaceutical development may be taken up with antecedent European conditions as starting point. Whatever the contributions of the several European countries, American pharmacy of to-day is not merely a blend of European donations, but, in its finality, largely a product of American soil.

In closing this all too sketchy outline permit me to end, as I began, with a plea. Do not make a course in the history of pharmacy a cram of dates and names. That is easy but scarcely satisfactory. It will be more difficult to instil into the

student's mind some of the spirit of pharmaceutical history. No matter how little you accomplish in this direction, it will at least be worth while.

DISCUSSION.

Dr. Edward Kremers: Before you inspect the material that has been arranged here for demonstration purposes, I want to say just a word or two by way of specific illustration.

First of all, I should say that we have not a collection but a selection. Professor Miller, a medical colleague of mine, once became rather incensed when his collection was referred to as a collection. He said, "it is not a collection; it is a selection." This selection is not even a select selection. We have brought here a few things that might show those who want to teach the history of pharmacy what is available, and that even an advertisement may sometimes serve a useful purpose.

I should like to use two special illustrations, however, to make my point. Some of you may remember Elbert Hubbard who wrote a lot of biographies of poets, sculptors, men of science and what not. In writing of Dante he says: "Just what his every-day occupation was we are not sure, but as it was he clerked in a drug store and often expressed himself thus: 'Lady, I am all out of liverwort to-day, but I have here something just as good.'

"And he read her a few stanzas from the *Vita Nuova* that he had just written behind the screen at the prescription counter."

Elbert Hubbard used his imagination a good deal in writing a biography. Some of our pharmaceutical biographers do the same, though.

Florence had a guild, not only one guild but at the time of Dante had twenty-one guilds representing some seventy or eighty callings. These different callings were organized into twenty-one guilds for political and military reasons, and in order that a citizen might exercise his franchise he had to be a member of a guild, for it was through the representative of the guild on the common council, as we should say, that he could exercise his franchise, and in no other way.

Dante was not an apothecary. He was a member of the guild of physicians, speziali (apothecaries) and merchants, and inasmuch as the painters and the dealers in paints were a part of that guild he evidently found congenial souls therein.

I mentioned the fact that Florence was the first to have a pharmacopœia in the modern sense. Why should it be that Florence should be the first to have a pharmacopœia? Why not, for instance, Venice or Genoa, the drug-dealing merchant cities? Florence is right here (indicating on a map) just below the Lombardy Plains. The reason, however, is evidently very apparent if we stop to consider, for instance, that the Saint Gothard Pass, the Engadin Pass, and so on, lead the roads through Florence on the way to Rome, and all roads that led to Rome had to lead through Florence. Florence, therefore, became the city of the crusaders on their way to the East, and the way of the returning crusader invalids after they had stopped at Salerno, and so on.

If you will stop to look at this valley of the Po, it is up here that in Florence, Mantua, Verona and Bergamo the first four city-state pharmacopœias were developed in this industrial and agriculturally rich center of the Lombardy Plains. Rome came later. Venice and Genoa came much later. Naples came much later. The seaports were by no means the first. It was because of the active life of which the Medici were the sponsors. The Medici, from "medicus," physician, were originally said to have been apothecaries, and the three pills in their coat of arms indicate their apothecary origin. They afterward became bankers, and the pills degenerated ultimately into the three plates of the sign of our American pawn shops.

I just want to point out the importance of the background. Why should Florence have the first pharmacopœia? The pharmacopœia doesn't answer that question. You have to go back of that.

I have mentioned that the person who wants to teach the history of pharmacy will first have to be a collector. I have here a little book (I don't know whether there is another copy of it here in the U. S.; there may be one in the Congressional Library, but I am not sure) which I looked for, for thirty years. One day I found a copy announced in an antiquarian catalog, and I asked our librarian to order it. Unfortunately, I fear, he procrastinated and we did not get that copy of the book. As luck would have it, within a year I saw another copy announced, only $300. I told our librarian about it. "Well," I said, "I have been looking for that book for thirty years, and $10 a year for thirty years isn't too much for it."

It is the first treatise on American materia medica written by Monardes, a Spanish physician of Cadiz, the port of entry of the two Indies, East and West. All of the ships that returned from the two Indies had to report there, and Monardes collected from the surgeons and sailors and anybody else who collected drugs all the material he could get and thus established the first drug cabinet, and wrote the first treatise on American materia medica. That book was early translated into every language of all seafaring people: French, English, Dutch and Italian. It was also translated into Latin, the scientific language of that time. The Germans were the last. It was translated the year before our World's Columbian Exposition commemorating the four hundredth anniversary of the discovery of America.

Just a single instance of how a drug may be interesting and reflect not only medico-pharmaceutical history, but economic history as well. In our historical library we have the Jesuit Relations, seventy volumes edited by the former superintendent of the Society, Reuben G. Thwaites. Fortunately, he supplied a two-volume index to those seventy volumes, so it became possible for us to glean a few pharmaceutical facts. We learn from one of the Relations by Father Jartoux, who was in Manchuria at the time, how the ginseng was collected for the Chinese emperor. He wrote about it in his story to the headquarters at Paris. Paris sent out copies to the other Jesuits, hence a copy came to Canada presumably, because Jartoux pointed out that he thought the woods of Manchuria resembled those of Canada, and that possibly the ginseng might be found over there.

It was Father Lafitau who was stationed not far from Montreal, and having read this Relation from his confrère in way-off Manchuria he went out into the woods to look for ginseng. He almost despaired finding it. Finally, he did find it, and here we have his illustration of the plant and his story of it. The book was dedicated to that roué, the brother of Louis XIV, the Prince of Orleans. He went with that drug to an Indian squaw and wanted to know what they called it. She said, "garentongen."

He said, "What is the meaning of "garentongen?"

"Man root." Ginseng in Chinese also means man root. We have here an illustration of why ginseng is a panacea. The liverwort is good for the liver because the leaf of the liverwort resembles the human liver. According to the doctrine of signatures, God has providentially not only cursed us with disease but also has provided us with remedies to cure those diseases if we but open our eyes to his creations. So the ginseng, having the shape of a man, you see, represented not only an organ or an extremity but resembled the whole body, and therefore was the panacea for all troubles of mankind.

No sooner had Father Lafitau discovered the ginseng when they began to collect ginseng, and the Indians were among the first to collect it. Here we have our first strike, possibly in New France. The Indians, instead of working for the settlers, refused to do the heavy agricultural work and preferred to collect ginseng and sell that to the merchants in town. So the farmers of New France greatly resented this new discovery.

You have heard of the French and Indian wars. Those French and Indian wars were conducted in part for the furs which, on the one hand, the French bought from the Indians, and on the other hand, the English settlers bought from the Indians. The ginseng also played a rôle with us. After fur hunting ceased in the Kickapoo Valley, ginseng hunting began, and the squatter and the settler, when he wanted some powder and shot and a bottle of whisky, would go out to hunt ginseng and take it to the store and trade it in for what he wanted more than ginseng.

More than that, after the Revolutionary War, when our thirteen original states tried to recover from the first depression, they found that they had little money, if any, but they had ginseng. An economist of that period points out that it was the good fortune of the citizens of the early U. S. that they could send a ship load of ginseng to China and exchange it for silk and tea, extravagances in which some of them cared to indulge. I might add, finally, that ginseng was one of the two items of trade which was valuable enough to be able to afford the wagon freight from Kentucky over the Alleghenies to the Atlantic seaboard.

Here I have given you just two illustrations, and if any of you are interested I shall be glad to visit here with you and talk over others, but I must not detain you any longer. I shall be glad to answer any questions, as I said before, either individually or collectively, as you may see fit.

If any of you want to teach the history of pharmacy (and several of you have spoken to me about it), the first thing you ought to do is to become a member of two societies, or have your libraries subscribe if you can't afford in these days of depression to become members of the two

societies. One is the Société d'Histoire de la Pharmacie which publishes Revue de l'Histoire de la Pharmacie. Here are the original bulletins published.

Then the second organization which you should join is the Gesellschaft fuer Geschichte der Pharmazie which publishes its "Abhandlungen." It has been my practice to subscribe for not only one copy but two or three. One copy I file away as the proceedings of the organization. The other two copies I use to tear up and file the articles and illustrations with the different chapters.

Finally, I have two articles, one by Herman Schelenz, the author of the "Geschichte der Pharmazie"—"The Use and Necessity of Teaching History of Pharmacy," and the other by Georg Urdang, the founder of the Gesellschaft fuer Geschichte der Pharmazie on "Wesen und Bedeutung der Geschichte der Pharmazie."

I have here a few library cards which are not up-to-date (they were published in 1921) which will tell you about the literature on history of pharmacy in general, and then give you a brief outline of the individual treatises and references to reviews so that you can get the opinion not only of the author and of the person who wrote the card, but of the reviewers of that time as well.

SYMPOSIUM ON PRACTICING PROFESSIONAL PHARMACY.*

THE FOUNDATIONS OF SUCCESS FOR PROFESSIONAL PHARMACY.

BY E. FULLERTON COOK.

The promotion of professional pharmacy is very dear to the hearts of many who sit in this room, and yet as I go about I find that many pharmacists in this country are greatly disturbed because they say they have little opportunity to really practice pharmacy. Some will say to me, "Our colleges are now offering four years of scientific training for professional pharmacy. Why are they doing it? In my pharmacy I have little need for this training."

Fortunately, there are some who have faith and a vision, and are practicing professional pharmacy in such a magnificent way that there is encouragement, as never before in my experience, in the possibilities of professional pharmacy.

We have had brought to our attention in a most spectacular fashion by two groups in the last year the importance of pharmacy in the United States. The Committee on the Costs of Medical Care has brought to our attention a report which shows that there are used in the United States something between $600,000,000 and $700,000,000 worth of drugs and, to the astonishment of most of us in pharmacy, eighty-seven per cent is sold through retail drug stores in the United States. I don't believe those facts have come effectively to the attention of the practicing pharmacists of the United States. In support of that, along come the remarkable figures of the Department of the Census of the United States Government just published. They report approximately $600,000,000 worth of drugs sold in the United States, of which ninety-five per cent is sold in drug stores; through department stores, one and one-tenth; through cosmetic and toilet stores, two and one-tenth per cent; through general country stores one and two-tenths per cent; through general merchandising stores, one-tenth of one per cent; through mail order houses three-tenths of a per cent. Such figures indicate the importance of medicine and medical sales in retail drug stores of the United States.

What I am trying to bring to your attention is the possibility of success through strictly professional activity in retail pharmacies, the departments that in the large chain stores have been a small factor. May I make it perfectly clear now, and without any misunderstanding, that I am not saying there cannot be a large chain store or a large commercial pharmacy with a splendid professional pharmacy department. George B. Evans in Philadelphia demonstrated that it could be done. The physicians of Philadelphia had great confidence in his professional departments and in the ability of his pharmacists, and the quality of his medicines was well known.

Ordinarily, there are chiefly three general outlets for this very high type of professional service of pharmacy at present. One is in the hospitals, where there is great opportunity for

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* See page 1021, October JOURNAL, and page 1196, November issue. It is hoped to complete the papers, not printed here, in another issue of the JOURNAL.