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In a treatise such as this, one wonders where to begin the telling of the story. Although pharmacy as a profession has only a short history, there is so much that might be said about it that one wonders what one should include and what one should disregard, overlook or omit.

It seems that ever since the dawn of history, people sought ways and means for alleviating pain and for curing ailments and bodily afflictions. Quite early it was realized that plants and trees were a source of the ingredients which had healing power. Especially the roots of plants their seeds, and sometimes the vegetative matter that composed the stem and leaves were sources of these ingredients. These became, then, the home remedies for bodily ailments. Some of these are amusing to us now as we read of them or hear them described. However, even now many of them still are in use.

The Indians long knew of the so-called "toothache tree." They found that by chewing the inner-bark of the prickly ash that toothache was relieved. The seeds of the tree were supposed to be even more potent.

We know that a common remedy for pains of the chest has been a poultice made of flaxseed or mustard seed. Another home remedy for chest ailments was hollyhock seeds boiled in milk or wine. When drunk "at periodic intervals these were supposed to remove a hot cough, and were supposed to be a remedy against consumption."

A plant known as the "rocket" (a member of the mustard family) was of interest to herbalists. The seeds were of special interest to small boys for it was said that if the boy would eat these seeds before he was

THE DRUG STORE PUBLIC LIBRARY AS IT WAS AND IS

by EDWARD EHLERT

whipped "he shall be so hardened that he shall easily endure the pain." Should, however, the whipping come so suddenly that the small boy would not have time to take due precaution, he need only "hasten to the kitchen and take a handful of beans, grind them to a meal, temper them with honey, and those would take away the black and blue spots which come of dry beatings."

In the 19th century the Indians had their witch doctor who used roots and herbs in the concoctions that were used to heal wounds, bodily ailments and disease. In the frontier days, white people had their traveling medicine man who had secret formulas that were supposed to cure a variety of ailments. These medicines sold for one dollar or more a bottle. The patent medicine industry flourished also.

In the years following the Revolutionary War, liberty was a word that had much meaning to people. A war war had been fought to secure it, and people wanted all that they could get of it. The ideal was liberty unlimited and unrestricted. However, it was soon discovered that there were unscrupulous people who knew no limits as to how wealth might be acquired. Some of these were among those who offered home remedies to a gullible public. Thus it was realized that liberty must be accompanied by responsibility to the public.

Until the early years of the 19th century the medical practitioner was at the same time a pharmacist. The Father of American Pharmacy was William Proctor, Jr. It was in 1821 that the Philadelphia College of Pharmacy was founded and Proctor later became its dean.

William Proctor believed that several things were necessary if professional status was to come to the dispensing of drugs and medicines. First of all he felt that persons engaged in the work should be properly trained. Early courses were of two year duration and included such subjects as chemistry, mathematics, English, pharmacology, and materia medica. The latter was the fundamental course, since it related to the properties of each herb, root, and drug. There was instruction given in drug compounding, dosage, and the proper storage of medicines and drugs.

It soon was realized, however, that a profession needed more than a body of knowledge and schools where that knowledge might be acquired. Some legal requirements were necessary. Thus the practice began of requiring licenses of those who engaged in the practice of pharmacy. Candidates were required to take oral and written examinations under direction of a State Board of Pharmacy. This board was usually appointed by the governor of the state, and appointees could be persons who were registered pharmacists. While some states required licenses for persons to engage in pharmacy in the early years of the 1800's, the practice did not become general until after the Civil War period. Wisconsin enacted its first pharmacy law in 1882.

When William Proctor established a drug store in Philadelphia he felt that it should be devoted exclusively to the compounding and dispensation of drugs and prescriptions. A drug store of that day had on its shelves glass bottles each of which had a glass stopper. These contained the crude drugs of the period which consisted primarily of roots and herbs known to have medicinal properties. The U.S. Dispensatory of Drugs was already in existence. This was a



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book which contained a description of the properties of every known drug, the uses which could be made of that drug, some hints for effective preparation of the drug and the like. The U.S. Dispensatory of Drugs is revised every ten years, and today is a publication that is at least four inches thick. It is the chief reference book of every pharmacist.

The tools of a pharmacist consisted of a mortar and pestle, beakers and crucibles, various graduates, a balance scale and a pill tile.

A mortar is a bowl-like vessel into which herbs and roots are placed where they are crushed into a powder with an instrument known as the pestle. The pestle is to a pharmacist what a rolling pin is to a housewife. The "apothecaries scale" was a most delicate instrument. The minimum weight to which the scale is sensitive is 1/10 of a grain. There are 456 grains in one ounce. The metric system of weights and measurements usually was used by the pharmacist.

In the early days pharmacists prepared many of the common medicines. These were supplemented by "patent medicines" of various and sundry kinds. A "patent medicine" was one in which the formula was filed in the U.S. Office of Patents, and thus precluded its manufacture by anyone except the one to whom the patent had been given.

Physicians in the early days were scarce and often were limited to the larger centers of population.

Thus, when persons became ill, the first place that they went was to the drug store, after the home remedies had been tried and found wanting. Sometimes the pharmacist might compound a drug which might prove effective. However, if a physician was available, the professional pharmacist even in the early days worked very closely with him, and prescribed only on receipt of a specific prescription.

This is a very sketchy description of the early history of pharmacy. For those who are interested in other developments, we would suggest a publication such as "The History of Pharmacy" by Kremers and Urdang which can be obtained from the Manitowoc Public Library.

With this background information, we can now proceed to tell about the experiences of several Manitowoc County pharmacists who have had long years of experience, and have been alert to the changes that have come in drug stores and pharmacy through the years. The three men concerning whose experiences we shall devote the rest of this monoaraph are Mark Sindorf, formerly a pharmacist at Valders; Otto Berndt, formerly a Manitowoc druggist and presently the pharmacist at the Memorial Hospital pharmacy; and August Hohn, who has been a registered pharmacist at drug stores in Two Rivers and Manitowoc, and is presently employed at Margenau's Drug Store on Washington Street in Manitowoc.

MARK SINDORF

Mark Sindorf is a native of Milwaukee. He began his career as an apprentice to a registered pharmacist in Milwaukee in 1906. Like apprentices in other trades his duties were varied and consisted of such things as washing windows and the glass of display cases, scrubbing the floor, dusting show cases and the merchandise on shelves, polishing the furniture, washing the dishes that had been used in preparing prescriptions of the previous day, shoveling sidewalks in winter, and running errands.

An apprentice did no prescription work. The nearest that an apprentice came to this phase of the operation was to get the bottles, jars and boxes from the basement storage room and put them where they could be conveniently gotten as there was need for them on a day. He also was required to keep bottles filled containing such things as ammonia, lime water, cotton seed oil, linseed oil, and turpentine.

During those days the shelves of a drug store contained many patent medicines. Often paint was sold in drug stores as well as wallpaper and gasoline. The store in which Mark served his apprenticeship was also a collecting agency for those who had gas, water and light bills to pay.

A good deal of each day was spent in waiting on trade. The salary of an apprentice was \$2.00 a week. The store was opened at seven o'clock in the morning and quitting time was any time between six and ten o'clock at night. Mark had finished the eighth grade in school when he began his apprenticeship.

It is hard to see how a boy having the hours that an apprentice pharmacist had in 1906 would have time to attend night school. Somehow Mark did, however, so over a period of three years he completed a four year high school course in which it was necessary that he earn twenty-two credits. Following graduation from high school he enrolled in the Milwaukee Medical School (now known as Marquette University) where he took the short course in pharmacy.

It was in 1909 that Mark became an assistant registered pharmacist. To acquire the certificate which gave him that title he had to submit to an oral and written examination before the State Board of Pharmacy. The document issued was a one-year license to practice pharmacy. An assistant pharmacist could work in a store only where there was a registered pharmacist. He prepared prescriptions under the supervision of a registered pharmacist.

Druggists in those days often were called upon to perform acts that today are regarded within the province of the physician. For example, if a person had gotten foreign matter of some kind in his eye, the druggist might be asked to administer first aid. Warts frequently were also the object of a druggist's attention. Preparations were compounded which were remedies for such ailments as the common cold or sore throat. Lime

water was prepared as a remedy for an acid stomach or dyspepsia. The druggist prepared a number of home remedies for rheumatic pains, arthritis, headaches, etc. Tincture of iodine was prepared as an antiseptic for cuts and bruises. Laxative preparations were also compounded.

An assistant registered pharmacist did not receive a high salary, so Mark's objective was to become a registered pharmacist. The hours which one was required to work in a drug store, however, precluded attendance at a school of pharmacy even for a part of a week. For that reason Mark became a "relief pharmacist" for some years, that is, he was a part time employee of a number of pharmacists. Thus he was able to choose the days and hours when he would wark. After four years as a relief pharmacist he became a fully registered pharmacist on October 25, 1913.

It was in 1916 that Mark was able to establish his own store in a building that fronted on 20th and Chestnut streets in Milwaukee. Mark states that during those years, in addition to operating the store and taking care of prescription work, he traveled to Neenah, Menasha, Appleton, and then to Manitowoc and Sheboygan to sell patent medicines. He had regular customers whom he served on these travels.

Mark has owned and operated several drug stores besides the one mentioned in Milwaukee. These were in Milwaukee and Racine. It was in 1939 that he established a drug store in Valders, and he continued in that store until 1963 when he retired, having worked as a registered pharmacist for fifty-seven years.

As Mark reminisced concerning his career he took note of the change in the prescription business. During the early years a doctor was very specific as to the quantities of a drug that were to be used in compaunding the prescription. Each of the drugs to be used was named. Today many of these preparations are compounded by the pharmaceutical supply houses, such as Parke Davis, Lilly, Norwich, Mulford, Abbot, Squibbs, Upjohn, and scores of others. All that the pharmacist need do is to take note of the specific ingredients in a preparation to be sure that it conforms to the intention

of the physician, and then give the patient the quantity of capsules or pills that was indicated.

Today there is no such thing as a druggist offering a customer his own personal remedy or concoction for an ailment. Laws are very strict about the dispensing of drugs, and there is the further possibility of litigation begun by a customer who might have gotten an unfavorable reaction when he took the medicine. No druggest would want to assume the risks involved.

In the 1920's, legal restrictions were imposed as to the use of narcotics, such as opium, cocaine, morphine, and heroin. A druggist is required to give an account of every prescription that contains a narcotic. In a hospital where drugs are prescribed, there is the further requirement that the record must indicate the name of the doctor who prescribed it, the nurse who administered it, as well as the pharmacist who compounded or prepared it. All narcotics must be kept in a locked case, separate from other drugs.

Although soda fountains and restaurants in drug stores were already established in 1825, the practice did not become general until the 1920's when the Prohibition amendment to the U.S. Constitution was enacted. In 1929 about two-thirds of the stores had a soda fountain and a

lunch counter. Thus, during all of Mark's years in Valders, a soda fountain was an adjunct to the prescription and drug business.

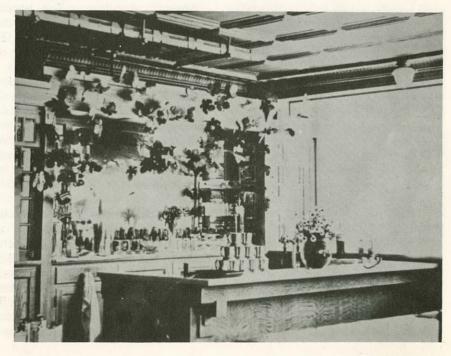
The hours of a druggist have remained largely unchanged through years. Perhaps today there is a somewhat later store opening than in the earlier years. However, drug stores will remain open until 9:00 or 10:00 o'clock at night. Some Sunday hours also are customary.

OTTO BERNDT

Otto Berndt's account as a druggist begins in the year 1914 when he was graduated from Lancaster High School (Wisconsin). He then attended the Marquette School of Pharmacy for two years in which he took such courses as chemistry, mathematics, pharmacology, English, and the fundamental course called materia medica.

Following completion of the twoyear course, it was required that a person have one year of practical experience under supervision of a registered pharmacist. One could then make application for an examination by the State Board of Pharmacy. The examination was both oral and written, and took most of one day. On successful completion of the examination a person received a oneyear license to practice pharmacy, with the privilege of renewal each

The Soda Fountain in Mark Sindorf's drugstore in Milwaukee is typical for the period.



year. Renewal was automatic so long as there were no complaints on file of violations of existing laws with regard to the dispensing of narcotics and drugs.

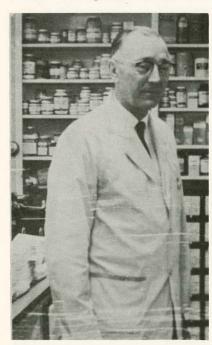
It was in 1925 that Mr. Berndt opened up a drug store in Manitowoc: His store was near what was once the Elks club adjacent to the Manitowoc River.

As Otto looked back on changes that had taken place in pharmacy during the last 40 years, he spoke about the strict laws relating to the dispensing of habit-forming drugs. In the early years of this century some of these were ingredients in some of the patent medicines. When the Federal Food and Drug Act was enacted in 1906 many restrictions were imposed, and among the earliest were restrictions on the use of narcotics.

Today the regulations are so strict that a druggist cannot even have a drug such as heroin in his possession, and most of the others only in limited quantities. Incidentally, heroin was a favorite ingredient of some of the cough syrups in the early years.

In the 1920's the first barbiturates or sleeping pills appeared on the market. At first these could be dispensed by druggists without any restrictions. After about ten years, however, these were placed on the list of those drugs that could be dis-

August Hohn



pensed by prescription of a practicphysician only. Not long after the first barbiturates appeared, tranquillizers also became available. When it became apparent that there was misuse of these, stringent regulations concerning their dispensation became effective also.

Commenting upon the preparation medication by pharmaceutical companies, Mr. Berndt felt that this was a big step forward, because it insured a more uniform dosage of drugs and medication of a kind that had a known and definite potency. While most pharmacists in the early years were very professional about their work, some drugs changed in potency due to age. Thus the results of a prescription were not always as the physician planned or hoped. The freshness of the drug supply is a concern to the pharmacist today, with disposal of all drugs older than a specific number of months becoming a regular practice.

Mr. Berndt mentioned that today many more drugs are used in hospitals than once was the case. As a matter of fact, 29% of all drugs are used in hospitals today. Treatment of a patient in a hospital today is generally the case, whereas once upon a time hospital treatment and care was limited to those who submitted to surgery, or who just could not be treated at home.

When a patient with an infection is admitted to a hospital today, a "smear" is taken. The hospital personnel determines what the nature of the infection might be. The patient's history is taken, and any sensitivity to particular drugs is noted. Following careful consideration of the particular patient, his needs, sensitivities, etc., the doctor prescribes the drug that he feels will "knock out" the infection. Antibiotics form a large segment of medicine today, such as penicillin and tetracycline.

As Mr. Berndt was reminiscing, his attention was directed to a preparation on the shelf of his office which had the label, "CAUTION: Federal law prohibits dispensing without prescription." There are a great number of caution-labelled drugs. Laws are strict about their sale, he said. Prescriptions are in

the same category. The prescription which is given to a patient is one that the druggist can give only to a particular patient. It cannot be filled for someone else even though he may say, "I have the same thing that ails my friend."

Very frequently, people who practice "self-medication" have gotten reactions which were not anticipated, since every person is unique in his own physical nature. No two are exactly alike. To guard against mishaps and unfavorable reactions, laws are very strict about the dispensing of prescriptions. It is illegal to give to any patient a prescription issued to another.

Mr. Berndt directed attention to a file of prescriptions. Every prescription becomes a permanent record of that particular transaction. Although no count has been taken of that file, their number must be in the hundreds of thousands. They are a history of the ailments of people, and also a history of progress in medicine. The skilled practitioner, of course, would find these very interesting and the source of an illuminating article about medical practice with regard to the treatment of diseases.

One more thought came to Mr. Berndt. As he glanced at the latest issue of the U.S. Dispensory of Drugs he was reminded of the effort that is being made to secure new drugs. Men go to the ends of the earth to find plants, seeds and roots that have medicinal properties. Research is constant as to how these plants may be used. He was reminded also that many of the products today are of synthetic preparation. When this thought came to him he spoke concerning the great amount of research that is done before a drug is permitted on the market.

Once upon a time the drug manufacturing companies had a research department which consisted of only a few persons. Today the Bristol Laboratories, for example, have ten Ph.D's in the pharmacology department alone, with a total personnel in the department of over 50 persons. Drug production at the Bristol Laboratory begins in the organic chemistry department where new drugs are synthesized; that is, produced by combining chemicals. Laboratory

and animal experiments in the pharmacology department are then conducted on the drug to search out any possible medicinal value.

After more testing in the toxicology department, to be certain that the drug can safely be used by human beings, the clinical investigation division submits the drug to various medical doctors who determine its value in clinical research and usage. The Federal Food and Drug Administration closely monitors the development of the new drug and must give its final approval before it can be manufactured for distribution by doctor's prescription.

Approval at first is only tentative, pending the testing of the drug on certain patients. Detailed case histories must be taken and kept as to the reaction of the patient to the drug. A number of tests are made on patients within a period of six months. After all the evidence has been studied, a decision is then made as to whether the drug is to be placed on the market. The Federal Food and Drug Administration is ever on the alert for unfavorable reaction to drugs, and is quick to withdraw a drug from the market if it seems that there might be danger in its use.

AUGUST HOHN

August Hohn has been a pharmacist since 1921. In that year he became an assistant registered pharmacist at Wausau. Under the license he then received, he was permitted to engage in pharmacy as an intern under the supervision and direction of a registered pharmacist. salary during the first three months of internship was \$60 a month, with an increase in salary of \$30 a month after the first three months. Mr. Hohn stated that \$90 seemed like a fabulous sum of money, "and perhaps it was, for common labor earned one dollar a day in those days, or even less." The following year he came to Manitowoc and was employed at the Otto Berndt Pharmacy as an Assistant Registered Pharma cist.

It was during the first year of his employment in Manitowoc that Mr. Hohn submitted to examination by the State Board of Pharmacy. On the successful completion of the examina-

tion he became a registered pharmacist. He continued to be employed in the Berndt Pharmacy until the 1930's when he decided to go into ousiness for himself in Two Rivers. The depression came upon the country about this time, and like so many other small businesses, the Hohn Drug Store became only an unpleasant memory. "Augie," as he is known by most of his friends, then became a Registered Pharmacist in the Charles Kirst Drug Store in Two Rivers where he was employed for more than ten years. He then moved to the Kronzer drug store where he remained for fourteen years. It was in October, 1958, that he became a a pharmacist at Margenau Drug Store in Manitowoc, where he has been employed since.

We began our interview with Mr. Hohn by inquiring what the major changes had been in drug stores during the forty-six years that he had been a pharmacist. He quickly replied that in the early days the shelves of a drug store were filled with many more patent medicines than they now are. Such products as Alpen-kreuter, Syrup of Pepsin, Indian herbs, Sal Hepatica, and certain cough medicines were best sellers. Today some of these products are still available; however, they are are asked for but rarely. On the other hand, there are many patent medicines available today which were unknown even ten years ago. Some of these are good sellers only because of the great amount of advertising that is done to promote their sales.

Drug merchandising has become a self-service operation in recent years. Once upon a time a druggist had on his shelves about a half dozen different kinds of tooth paste, and a few kinds of tooth brushes. Nowadays one must have in stock just about every known brand name. This may amount to about thirty different kinds of tooth paste, and eight or ten different kinds of tooth brushes. There are certain products, however, which cannot be sold through self-service. Such products as aspirin, mineral oil, milk of magnesia are considered as drugs and must be kept in closed display cases. Any product listed in the U.S. Dispensory of Drugs is regarded



Otto Behrendt

as a drug and must be so treated.

There has been a change in the kind of product that customers request when they seek remedies for certain ailments. Once upon a time if a person had an arthritic or rheumatic kind of pain a mustard plaster was a common remedy. These plasters are not manufactured any more. The hot water bottle became its successor, soon to be displaced by the electric heating pad. Other ailments have had their changes in treatment, too, with corresponding change in the product which druggists must stock to meet the demands of customers.

While the soda fountain and lunch counter became an adjunct of many drug stores in the early years of the 20th century, it seems that the trend nowadays is away from these. The large chain drug stores have retained these services. However, most of the smaller stores have discontinued them. Space in a drug store is valuable, in view of the vast array of articles that must be stocked, and so the operator of a store features only those aspects of the business which seem to make the most profitable use of available space. In some stores, self-service machines have replaced the soda fountain. Such products are available from these machines as coffee, soft drinks, milk, and even sandwiches.

The products that are sold in drug stores vary with the store. Some have become general merchan-

dise stores. In these one can purchase just about any item that one may wish excepting perhaps certain dry goods and groceries. Most drug stores carry in their stock such items as ladies stockings, hair nets, hair sprays, and hair coloring commodities. These are "convenience items" for drug stores are open during hours and days when general merchandising stores are closed. Should a lady get a "run" in her stocking, the drug store is her "life saver" in such a circumstance.

Most drug stores carry a line of school supplies and stationery. However, there are so many different kinds of products in these lines, some owners are discontinuing these and leaving it to stationery stores to specialize in these products. Then there usually are cigarettes, cigars, tobaccos, and pipes which most drug stores sell. In recent years the trend has been toward packaged cigars rather than to those in boxes. Shaving needs of men are also filled. To the usual shaving creams and soaps have now been added electric shavers.

There are stores which feature certain appliances. For example, there are many today who require the use of wheel chairs, walkers, special canes and crutches, and trusses of various kinds. Special training is needed if one is to adequately meet the demands of customers. Not all pharmacists have this training. However, those who are prepared to give service in these areas are finding this a fine adjunct to the business.

There was a time when little children went to the drug store to spend the penny or a nickel that someone had given them. Bulk candy is no longer sold in these stores, possibly because of certain sanitary regulations that apply to the sale of confections. However, pre-packaged candies are available as well as the usual array of gift boxes of the choicer kinds of candy.

Most drug stores have special products for the diabetic. There are diabetic candies, sweeteners, tablets that can be taken instead of insulin, and items with which a a diabetic can test his current status.

Thus, the modern drug store represents an effort to provide service to customers who have a variety

of needs and desires. There are a number of specialties, and these are so numerous that it is almost impossible to enter into a discussion of more than a few.

As Mr. Hohn reminisced about his experiences he also remarked about the increase in the number of regulations that pertain to the dispensing of drugs. A recent requirement is that no person is ever to be permitted in the prescription room except the registered pharmacist.

Another regulation applies to the filling of prescriptions. There was a time when a prescription could be filled as often as a customer wished to have it filled. Today the limit is five times. After the fifth time the customer must return to the physician to get another prescription. There are regulations also which require the patient to deliver the prescription to the pharmacist in person. Certain prescriptions cannot be requested by telephane. There are regulations that limit the quantity of a drug which a pharmacist can have in stock. The regulations which apply to Wisconsin pharmacists and drug stores are among the strictest of any state in the U.S.A.

One of the aspects concerning drug merchandising about which comment has not yet been made is that of chain drug stores. These are by no means of recent origin. It was in the early years of this century that chain drug stores appeared in America. Europe had several chains several decades earlier. The Liggett chain was the first to appear, to be followed later by the Walgreen chain. The Liggett firm reached its peak in 1930 when it had 672 stores. Around 1905 Charles B. Walgreen was working as a drug clerk in Chicago. By 1916 he had a chain of nine stores in Chicago, with gradual increase in the number of stores in the chain each year until the 1950's when there were over 400 stores in the chain located in most of the states of the U.S.A.

Most chain drug stores are big operations. While independent stores seldom have a gross volume business which reaches the six figure level, it is the rule that the chain operators have a volume business in excess of this figure. Perhaps one of the reasons for the larger volume of business is that these

have become general merchandising establishments while the smaller operators limit their business to the sale of drugs and related products.

Some drug stores are known as "Walgreen Agency" stores. This means that Walgreen products are stocked, but only such items as the druggist feels are in public demand. He is not required to stock all items. These stores are not a part of the chain. The title means only that that particular store carries a stock of items which have the Walgreen brand name.

As the interview with Mr. Hohn was concluded he remarked that pharmacy has come a long way since he became a member of the profession. He remarked that most pharmacists are very professional in their practice, with a desire to give the best possible service to a customer.

There is no comparison, however, with the way that pharmacy is practiced today as compared with the days following World War I. To illustrate, at that period in history practice of quarantine was common, especially for such diseases as mumps, chicken pox, scarfever, diphtheria, measles, typhoid fever, etc. A sign was huna in a window of a home or was tacked on the front door by the Board of Health. It was a warning that someone inside was afflicted with one of the contagious diseases mentioned. Persons living in the home were limited as to where they might go and under what circumstances. The patient could not leave the premises under any circumstances.

These regulations have changed much. But with the relaxing of the regulations, as to quarantine, there seem to be much more strict regulation as to the dispensing of drug prescriptions and medicines. Better drug preparations have been discovered. Anyone who has ever taken a dose of castor oil as a child can attest to this. Even cod liver oil has given way to vitamins A and D.

Mr. Hohn agreed that all these regulations were for the good of the public, for good health should be every person's right. There is a concerted effort to make available to everyone those remedies and treatments which will maintain the health standards of a community on a high level for every one.