

PROFESSIONAL PHARMACY. III.*

BY C. B. JORDAN.

In the two former studies of professional pharmacy (JOURNAL A. PH. A., 18 (1929), 1170-1176, and 19 (1930), 870-874). I was primarily interested in determining the number of prescriptions compounded annually, the date of opening of the store, location of stores, etc. In this study I was interested in determining the type of work done in professional pharmacy. Believing that our colleges must soon take cognizance of this special type of work and therefore should have information regarding the demands made upon the operator and the clerks in such a pharmacy, I endeavored to secure such information by means of a questionnaire, which I will discuss later.

When asked what I meant by a "professional pharmacy" I have usually answered that it was a pharmacy in which the only operations were prescription compounding and filling doctors orders. Obviously this classification is not satisfactory because many commercial stores are doing a larger prescription business than a number of purely professional stores. I know of no classification that is entirely satisfactory and therefore an arbitrary one was selected. It is this: "Any drug store the sales of which from prescription compounding and filling doctors orders amounts to fifty per cent or more of the total sales of the store is a 'professional pharmacy.'" I fully realize the shortcomings of such a classification but believe that it is as good as any that can be made and that it will answer for the purpose of this study.

Through the assistance of a large manufacturing company, I was able to secure a fairly accurate list of all such stores in the United States and I was surprised to find that there were three hundred and fifty-three such stores. They are distributed in the several states as follows: Alabama 3, California 34, Colorado 2, Delaware 1, District of Columbia 10, Florida 3, Illinois 42, Indiana 5, Iowa 5, Kansas 6, Kentucky 2, Louisiana 2, Maryland 2, Massachusetts 5, Michigan 31, Minnesota 7, Missouri 18, Mississippi 2, Nebraska 5, New Jersey 16, New York 37, Ohio 27, Oklahoma 3, Oregon 7, Pennsylvania 16, Rhode Island 4, Tennessee 7, Texas 10, Washington 15, West Virginia 2, Wisconsin 17, Utah 4. Without doubt this list is not entirely correct, but, I believe, it is the best that could be secured without a great deal of labor and expense. In fact, it was a rather expensive job for the manufacturing house to perfect the present list of stores.

Each store was written the following letter:

May 12, 1931

To: Professional Pharmacists of the United States.

From: C. B. Jordan.

Re: Development of Professional Pharmacy.

You have been kind enough to furnish me information for two addresses which have appeared in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION (see Vol. XVIII, No. 11, November 1929, and Vol. XIX, No. 8, August 1930). These addresses have aroused considerable interest in the subject of Professional Pharmacy and I have been requested by the ASSOCIATION to continue this study.

* An illustrated address before AMERICAN PHARMACEUTICAL ASSOCIATION, Second General Session, Miami, Fla., July 30, 1931.

I am enclosing a blank that I have endeavored to simplify as much as possible and, if you will give me the information requested on this blank, I shall deeply appreciate it. I am very sure that American Pharmacy will also appreciate a report of the results. You will note that you need not sign the report if you do not wish. In all my work I have carefully protected the information that has been given me and I will do so in this case.

I have tried to simplify this report so that you could make it out in a few minutes and I judge that your interest in the development of Professional Pharmacy will cause you to take the time and trouble necessary to do it.

Trusting that you will do this and sincerely thanking you in advance for the favor, I am
Sincerely yours,

C. B. JORDAN, *Dean.*

With each letter was enclosed the following questionnaire sheet:

| Prescription Items. | No. Prepared by Pharmacist per Each 100 R's. | No. "Ready-Made" per Each 100 R's. |
|----------------------------|----------------------------------------------------|---------------------------------------|
| Tablet triturates..... | | |
| Pills..... | | |
| Soft elastic capsules..... | | |
| Enteric coatings..... | | |
| Wafers..... | | |
| Hypodermic tablets..... | | |
| Suppositories..... | | |
| Emulsions..... | | |
| Eye solutions..... | | |
| Ophthalmic ointments..... | | |

AVERAGE FREQUENCY OF CALLS FOR THE FOLLOWING PER MONTH.

| | Prepared by Pharmacist. | "Ready-Made." |
|--------------------------------------|----------------------------|---------------|
| Stains and dyes..... | | |
| Physiological salt solutions..... | | |
| Arsphenamine solutions..... | | |
| Intravenous solutions..... | | |
| Media..... | | |
| Ampul solutions..... | | |
| Sterilized gauze—swabs—bandages..... | | |

AVERAGE FREQUENCY OF CALLS TO PERFORM PER MONTH.

| | |
|--------------------------|--|
| Urinary analysis..... | |
| Sputum analysis..... | |
| Feces analysis..... | |
| Blood counts..... | |
| Incubations..... | |
| Autogenous vaccines..... | |
| Gastric analysis..... | |

Average price charged for prescriptions.....

Remarks:

Return before June 1st to:
Dean C. B. Jordan,
Purdue Univ. School of Pharmacy,
West Lafayette, Indiana.

Reported by:.....
.....
.....

A follow-up letter was later sent to all of those who did not send in data on first request.

I received ninety-one replies, but two were too late for use in this paper. Of this number twenty-three did not fully understand the first part of the questionnaire and their replies will be treated separately. Sixty-four professional pharmacists submitted data on first part as asked for and an analysis of this data follows:

Tablet Triturates.—Eighteen, or 28%, of the professional pharmacists make tablet triturates, the largest per cent of store-made tablet triturate prescriptions was 10, and the average per cent of store-made tablet triturate prescriptions for the total number of stores is one-half. Evidently store-made tablet triturates is not an important item in these professional pharmacies. Fifty-eight, or 90.67%, sold manufactured tablet triturates, the largest per cent of manufactured tablet triturate prescriptions was twenty, the average per cent of manufactured tablet triturate prescriptions for the total number of stores reporting was 6.4 and the average number of prescriptions for both ready-made and store-made tablet triturates was 7. We must continue to teach the manufacture and advantage of tablet triturates but we must expect that our graduates will rarely be called upon to make them in the store. A competent pharmacist should know how to make any pharmaceutical preparation, even though he be called upon to do it only "once in a life time." However, when only 7 prescriptions in 100 are for tablet triturates and only $\frac{1}{2}$ in each 100 is for store-made tablet triturates, the average prescription clerk may expect to have only a few chances to show his dexterity in this line.

Pills.—We are often called "pill rollers" and I have sometimes wondered whether we can rightfully claim that title to-day. Let us see. Forty-four, or 68.8%, of the professional pharmacists still "roll their own" once in a while. The largest percentage of prescriptions for store-made was 10, and the average percentage for all the stores reporting was 1.5%. Fifty-seven, or 90%, of the professional pharmacists sold manufactured pills. It seems unusual that any prescription store would not sell manufactured pills, but 7 such stores reported no sales. The largest per cent of manufactured pill prescriptions was 50 and the average for all the stores reporting for manufactured pills was 5.6 and the average for both manufactured and store-made pill prescriptions was 7.1. Evidently pill medication is still quite popular, for 7.1 out of every 100 prescriptions were for pills, either manufactured or store-made. We must continue to teach the value of pill medications and how to prepare them.

Soft Elastic Capsules.—Ten out of sixty-four, or 1.6%, of the professional pharmacists make soft elastic capsules. The largest percentage of prescriptions for store-made S.E. capsules was 5 and the average percentage for those reporting that they made them was 1.75, but the average for all stores reporting was 0.27%. With only 0.27 of one out of every 100 prescriptions for store-made S.E. capsules, the average clerk will have little use for the knowledge of how to prepare them. Fifty-five, or 86%, of the professional pharmacists reported that they sold ready-made S.E. capsules. The largest percentage of ready-made S.E. capsule prescriptions was 20 and the average percentage was 2.6. The average percentage of all kinds of S.E. capsule prescriptions was 3. S.E. capsule medication is still in vogue but only about one-half as popular as pill medication.

Enteric Coatings.—There is quite a demand for a good enteric coating and at present none seems to have been found; therefore, I was interested in the reports on this item. Twenty-nine, or 45%, of the professional pharmacists make their own enteric coatings, but the percentage of store-made enteric coating prescriptions for all pharmacists was only 1, while one reported that 15 out of every 100 prescriptions was for his own enteric coatings. Fifty-four, or 84.3%, of the pharmacists reported that they sold ready-made enteric coatings. The largest percentage of ready-made enteric coating prescriptions was 10 and the average was 2.3. The average percentage of prescriptions for both kinds of enteric coatings was 3.3. Evidently store-made enteric coatings are very popular. I am convinced that a completely satisfactory and convenient method of enteric coating that can be used by the average retail druggist is a boon much to be desired. Here is a good research problem for some ambitious young pharmacist.

Wafers.—Twenty-one, or 33%, of the professional pharmacists make their own wafers, but the average percentage of store-made wafer prescription is only 0.44. Twenty, or about 33%, of the pharmacists sell manufactured wafers. The average percentage of wafer prescriptions of both manufactured and store-made was only 0.8. It is very evident that wafer medication is not very popular; however, one pharmacist reported that 5 out of every 100 prescriptions was for store-made wafers, showing that he had "specialized" on that item.

Hypodermic Tablets.—Four of the sixty-four pharmacists occasionally made their own hypodermic tablets, and one reported that 5 out of every 100 prescriptions was for his own make of hypodermic tablets. Fifty-nine of 92.2% of the pharmacists reported that they sold manufactured hypodermic tablets and three reported that 10 out of every 100 prescriptions were for manufactured hypodermic tablets. The average percentage of H.T. prescriptions, both manufactured and store-made, was 4. Hypodermic tablets present one form of medication that is prepared almost entirely by the manufacturer and we can readily understand why this is true.

Suppositories.—With suppositories, emulsions, eye solutions and ophthalmic ointments the pharmacist seems to have "come into his own" or, better still, seems to have retained his prestige for manufacturing. Fifty-four, or 84+, of the professional pharmacists make suppositories and one reported that 20 out of every 100 prescriptions were for store-made suppositories. The average percentage of store-made suppository prescriptions was 2.75. Fifty-one, or about 80%, of the professional pharmacists sold ready-made suppositories, and one reported that 15 out of every 100 prescriptions was for ready-made suppositories. There were reported more store-made suppositories than ready-made ones. Evidently we must emphasize the manufacture of good suppositories, because our students will surely be called upon to make them and perhaps very often. The average percentage of suppository prescriptions, both store-made and ready-made, was 3.2. It is evident that this form of medication has not lost its popularity, especially in certain ailments.

Emulsions.—Forty-seven, or 73.4%, of the professional pharmacists make emulsions, and one reported that 15 out of every 100 prescriptions were for store-made emulsions. The average percentage of store-made emulsion prescriptions was 2.1. Only thirty-eight, or 60%, of the professional pharmacists sell ready-made emulsions. However, one reported that 12 out of every 100 prescriptions were for ready-made emulsions. The average percentage of ready-made emulsion

prescriptions was 1.3, while the average percentage of emulsion prescriptions of both kinds was 3.6+. The emulsion is still a very popular form of medication and the pharmacist makes more emulsions than he buys for prescription work. A quick, easy way of making emulsions is still to be found and, I believe, that considerable improvement can be made in our emulsifying agents.

Eye Solutions.—Fifty-nine, or 92.2%, of the professional pharmacists report that they make eye solutions, and one reported that 20 out of every 100 prescriptions were for eye solutions. The average percentage of store-prepared eye-solution prescriptions was 9.5. This is the largest average percentage yet found in this study. When we realize the care that must be taken in preparing a solution for the eyes, we are impressed with the fact that colleges of pharmacy should place emphasis upon this phase of prescription compounding. Only 28, or 43.7%, of the pharmacists sell ready-made eye solutions and the average percentage of ready-made eye-solution prescriptions was 0.8, while the average percentage of eye-solution prescriptions, both ready-made and store-made, was 10.3. This means that more than 10 out of every 100 prescriptions were for eye solutions.

Ophthalmic Ointments.—Forty-four, or 70%, of the pharmacists prepare ophthalmic ointments, and the average percentage of store-made ophthalmic ointment prescriptions was 1.5, while one pharmacist reported that 10 out of every 100 prescriptions was for store-made ophthalmic ointments. Fifty-two, or 82%, of the pharmacists reported that they dispensed ready-made ophthalmic ointments, and one reported that 20 out of every 100 prescriptions were for ready-made ophthalmic ointments. The average percentage of ophthalmic ointment prescriptions, both ready-made and store-made, was 5.5.

An analysis of this part of the study shows that store-made suppositories, emulsions, eye solutions and ophthalmic ointments are popular and that the wide-awake pharmacist can develop this part of his dispensing. Store-made pills are fairly popular, while store-made wafers, tablet triturates, soft elastic capsules, hypodermic tablets and enteric coatings are less popular. It is interesting to note, however, that some pharmacists have made these latter methods of medication popular, except in the case of hypodermic tablets and wafers. Wafers are not popular whether store-made or ready-made, but manufactured hypodermic tablets are popular. A graduate pharmacist should know how to make all of these forms of medication even though he is seldom called upon to prepare some of them. The emphasis, however, should be placed upon pills, suppositories, emulsions, eye solutions and ointments.

In the second part of the study an effort was made to determine how many times a month a pharmacist is called upon to dispense stains and dyes, physiological salt solutions, arsphenamine solutions, intravenous solutions, media, ampul solutions and sterilized gauze, swabs, etc. Here again the pharmacist was asked to specify how many times per month he dispensed store-made and ready-made preparations of these medicinal agents. All understood this part of the questionnaire and therefore 89 reports instead of 64 are considered.

Stains and Dyes.—Fifty-four, or 60.6%, of the reporting pharmacists dispensed store-made stains and dyes. Some are doing quite a business in this work, as they report 360, 250, 175, 150 and 100 calls per month for store-made stains and dyes. The average number of calls per month for store-made stains and dyes was

26.6. Thirty-four, or 38% of the pharmacists dispensed ready-made stains and dyes, and one reported that he had 300 calls per month for these. The average calls per month for ready-made stains and dyes was 10.8, while the average calls per month for stains and dyes, both ready-made and store-made, was 37.4. Evidently the wide-awake pharmacist in certain localities can develop quite a business in stains and dyes of his own make.

Physiological Salt Solutions.—Fifty-nine, or 65+%, of the pharmacists prepare their own physiological salt solutions, and some do a good business in this, as they report 900, 300, 200 and 150 calls per month for them. The average calls per month for store-made physiological salt solutions was 28.4. Seventeen, or 20-%, of the pharmacists sometimes dispense ready-made physiological salt solutions, but the calls per month are few. The average number of calls per month for physiological salt solutions, store-made and ready-made was 30. It is evident that the preparation of physiological salt solutions is an important part of a professional pharmacist's job. Our colleges should thoroughly instruct their students in the technic of preparation of these solutions.

Arsphenamine Solutions.—Only twenty-seven, or 30.3%, of the pharmacists prepare their arsphenamine solutions, but some pharmacists do a nice business in this as they report 750, 90 and 90 calls per month for them. The average number of calls per month for store-prepared arsphenamine solutions was 13. Only twenty-six, or 29.2%, of the pharmacists dispense ready-made arsphenamine solutions but, again, some of them do a nice business in this, as they report 500, 300 and 100 calls per month for them. The average calls per month for arsphenamine solutions, ready-made and store-made was 32. Some physicians have informed me that if the pharmacists were prepared to make their arsphenamine solutions satisfactorily they would be glad to turn that business over to them. It is understood, of course, that the salt is dissolved in sterile water *immediately* before being used and therefore the pharmacist should *make sure that the solution will be used at once* or else dispense the salt, sterile water and sterile containers for the physician to prepare the solution at the time it is administered. More emphasis should be placed upon the technic of preparing arsphenamine solutions and our colleges should awaken to this important, and I fear much neglected, part of their instruction.

Intravenous Solutions.—Thirty-one, or 35%, of the pharmacists prepare intravenous solutions, but some do quite a business in this, as they report 150, 150 and 100 calls per month. The average number of store-made intravenous solutions per month was 9. Thirty-nine, or 43.7+%, of the pharmacists sell ready-made intravenous solutions, and the calls per month are many, as three reported 9000, 1000 and 700, respectively. The average number of calls per month for ready-made intravenous solutions was 128. The pharmacist seems to be turning over to the manufacturer the preparation of intravenous solutions.

Media.—Only one pharmacist made media and then only twice a month. Twenty pharmacists sold ready-made media and two of these had 250 calls each per month. Media is not a popular item in professional pharmacies.

Ampuls.—Fifteen, or 16.8%, of the pharmacists dispensed their own ampuls, and one reported 500 calls per month for these. The average number of calls per month for store-prepared ampuls was 10. This indicates that the average business of store-prepared ampuls is very small. Fifty-one, or 57+%, of the pharmacists

sold ready-prepared ampuls and in some cases the business was large, as 9000, 5000, 1500, 1200, 1000 and 500 calls were reported per month. The average number of calls per month for ready-made ampuls was 262. The professional pharmacist is doing a nice business in ready-made ampuls.

Sterilized Guaze, Swabs and Bandages.—The purpose of this question was to determine whether the pharmacists were preparing any of these. Three reported that they prepared swabs, one reported 150 calls per week and one "a great many" per week. Since only three are preparing this material, its importance is small. Of course, all reported the sale of manufactured material.

The third part of the questionnaire covered laboratory work and the answers were disappointing because they indicated that only a few very professional pharmacists attempt to do any technical laboratory work for their physicians.

Urine Analysis.—Twenty-three pharmacists reported that they did urine analysis, one reporting 3000 analyses per month. The average number of urine analyses per month for those who reported was 154. This figure does not mean much, because of the 3545 analyses reported per month one pharmacist reported 3000.

Sputum Analysis.—Eight pharmacists reported that they did sputum analysis and one reported 150 analyses per month.

Feces Analysis.—Five reported that they did feces analysis and one reported 100 analyses per month.

Blood Counts.—Five reported that they did blood counts and one reported 100 blood counts per month.

Incubations.—Two reported that they did incubations.

Autogenous Vaccines.—Two reported.

Gastric Analysis.—Two reported.

Smears.—One reported that he did 28 smears per month. One pharmacist sent in an unusual report on laboratory analysis as follows:

| | | | |
|---------------------|----------------|------------------|---------------|
| Urine Analysis | 3000 per month | Gastric Analysis | 10 per month |
| Sputum Analysis | 150 per month | Mother's Milk | 10 per month |
| Feces Analysis | 100 per month | Blood Sugar | 200 per month |
| Blood Counts | 200 per month | Smears | 50 per month |
| Incubations | 50 per month | Wasserman's | 50 per month |
| Autogenous Vaccines | 20 per month | | |

Such a report needs no comment. If this report and one other is taken from the average, there is very little left. In other words, only one or two of the pharmacists who reported are doing anything in technical laboratory analysis. I am convinced that this is a much neglected part of the work of a professional drug store. I am cognizant of the fact that there are laboratories in some cities to which this work is sent, but I still believe that the wide-awake, well-prepared pharmacist should be doing a great deal of it. Here is plenty of opportunity to develop. It will also offer a profitable side activity to the young man who is trying to establish himself as a professional pharmacist.

Average Price of Prescriptions.—Only 84 pharmacists reported average price that I could interpret for this study. One or two refused to divulge their prices and a few reported in such a way I could not use their figures. The average price ranges from \$.60 to \$1.53. They were reported as follows: One at \$.60, one at

\$0.71, five at \$0.75, one at \$0.80, eleven at \$0.85, six at \$0.90, four at \$0.95, fifteen at \$1.00, six at \$1.02 to \$1.07, ten at \$1.10, four at \$1.15, one at \$1.20, eleven at \$1.25, one at \$1.30, one at \$1.35, two at \$1.40, one at \$1.45, two at \$1.50 and one at \$1.53.

The average price as reported is \$1.02. With a variation from \$0.60 to \$1.53, the latter figure being more than two and a half times the former, it is evident that these pharmacists are serving quite different classes of trade. I can hardly understand an average price as small as \$0.60 and an average of \$1.53 indicates a high class neighborhood or unusual expensive ingredients, or both.

Some interesting comments were received with the reports. Many times pharmacists reported that they did not attempt to do the laboratory work because there was a regular technical laboratory or the work was sent to the State Board of Health laboratories. Some of the interesting comments are as follows:

"I have stopped all this business because it slows up the prescriptions; I send them to a laboratory."

"We have a laboratory in the building but I do believe that a professional pharmacist could take over this work profitably."

"We do nothing but compound prescriptions, but found that if we had the knowledge of making different analyses, we would get quite a good many calls for same."

DATA FROM SIXTY-FOUR PROFESSIONAL PHARMACISTS.

| Preparation. | Prepared by Pharmacist. | | | Ready-Made. | | | |
|-------------------|-------------------------|---------------|--------------------|-------------|---------------|--------------------|----------------------------|
| | % Mak-ing. | % of R's for. | Max. % of R's for. | % Sell-ing. | % of R's for. | Max. % of R's for. | Average % of R's for both. |
| Tablet triturates | 28.0 | 0.5 | 10 | 90.7 | 6.4 | 20 | 7.0 |
| Pills | 68.8 | 1.5 | 10 | 90.0 | 5.6 | 50 | 7.1 |
| S. E. capsules | 1.6 | 0.27 | 5 | 86.0 | 2.6 | 20 | 2.87 |
| Enteric coatings | 45.0 | 1.0 | 15 | 84.3 | 2.3 | 10 | 3.3 |
| Wafers | 33.0 | 0.44 | .. | 33.0 | .. | 5 | 0.8 |
| Hypo. tablets | 6.0 | .. | 5 | 92.2 | .. | 10 | 4.0 |
| Suppositories | 84.0 | 2.75 | 20 | 80.0 | 0.55 | 15 | 3.2 |
| Emulsions | 73.4 | 2.1 | 15 | 60.0 | 1.3 | 12 | 3.4 |
| Eye solutions | 92.2 | 9.5 | 20 | 43.7 | 0.8 | .. | 10.3 |
| Opth. ointment | 70.0 | 1.5 | 10 | 82.0 | 4.0 | 20 | 5.5 |

DATA FROM EIGHTY-NINE PROFESSIONAL PHARMACISTS.

| Preparation. | Prepared by Pharmacist. | | | Ready-Made. | | | |
|-------------------|-------------------------|-------------------|--------------------|-------------|-------------------|--------------------|-----------------------------------|
| | % Mak-ing. | Av. calls per mo. | Max. calls per mo. | % Sell-ing. | Av. calls per mo. | Max. calls per mo. | Average calls for both per month. |
| Stains and dyes | 60.6 | 26.6 | 360 | 38.0 | 10.8 | 300 | 37.4 |
| Phys. salt sol'n. | 65.0 | 28.4 | 900 | 20.0 | .. | .. | 30.0 |
| Arsphen. sol'n. | 30.3 | 13.0 | 750 | 29.2 | .. | 500 | 32.0 |
| Intrav. sol'n. | 35.0 | 9.0 | 150 | 43.7 | .. | 9000 | 128.0 |
| Media | 1 only | 2.0 | 2 | 22.0 | .. | 250 | .. |
| Ampuls | 16.8 | 10.0 | 500 | 57.0 | 26.8 | 9000 | .. |
| Swabs, etc. | 3 only | .. | 150 | .. | .. | .. | .. |

"We think the druggists are somewhat remiss in not laying more stress upon laboratory work, and their qualifications to handle it properly. We are quite well aware that in a number of communities where the druggist has put in the necessary equipment and featured this line of work, it has materially increased his prestige with the medical profession."

"All clinical examinations are done in our clinical laboratory by capable technicians; sterile sheets, gowns, caps, binders, dressings, swabs, first aid cabinets and supplies are prepared in our 'Sterile Goods Department;' pharmacists in R Department prepare prescriptions, sterile solutions of glucose, stains for intravenous and bacteriological use, distilled water and varied solutions for the physician's office use as well as for his patients."

The difference in the type of prescriptions called for in different localities is well illustrated by the following.

"I might state we have two stores and the nature of our prescription work is entirely different in the two, depending upon the doctor supporting them. One store fills many eye and ointment prescriptions, while the other fills many stomach prescriptions."

Another interesting comment is as follows:

"We fill a great many glandular prescriptions and these, to be effective, must be enteric-coated. We have proved that without enteric coatings glandular prescriptions are inert."

In conclusion I sincerely hope that the data presented here may be of some value to those who are interested in opening professional drug stores, to those who already operate such stores, and to the colleges of pharmacy.

I wish to take this opportunity to sincerely thank all of the pharomicsts who so kindly submitted data on which this paper is based.

REPORT ON MARYLAND PRESCRIPTION COUNT.*

BY ROBERT L. SWAIN.

The Maryland prescription survey was undertaken after Dr. E. N. Gathercoal, chairman of the National Formulary Revision Committee, had carried out some interesting investigations to determine the number of prescriptions filled per capita in the drug stores of the country. Dr. Gathercoal confined his work to cities adjacent to Chicago, and thus the data which he compiled applied only to urban population in a much restricted area.

Maryland was selected, primarily, because Pharmacy has in that state an organization peculiarly fitted to carry out any investigation of a pharmaceutical nature. Pharmacy is represented in the membership of the State Department of Health, and the enforcement of the pharmacy laws is carried on by the Department of Health as a part of the public health program of the state. The pharmacy law, pure food and drug law, poison law and other laws of specific interest to pharmacists are published jointly by the Board of Pharmacy and the Department of Health. The director of the Bureau of Chemistry of the Department of Health is also a pharmacist. The director of pharmacy law enforcement and the inspectors actually engaged in field duty are registered pharmacists. The Maryland prescription survey was undertaken simply to measure the public health value of pharmacy, in so far as this was possible from a close study of one phase of pharmaceutical practice. As pharmacy has a firm place in the public health program of the state, the state is interested in ascertaining the extent and scope of all forms of pharmaceutical service.

In connection with this survey, it is well to point out that in some important respects Maryland is accepted as the typical American state. Maryland is especially important in statistical studies because it represents an average cross section of the country as a whole. According to data compiled by the Bureau of the Census, it is ascertained that fifty-six per cent of the people of the United States are classified as urban. In Maryland this figure is a bit higher, and in this state fifty-nine per cent

* Presented before Joint Session, Scientific Section and Section on Practical Pharmacy and Dispensing, A. P. H. A., Miami meeting, 1931.