

a total of 926 members in attendance is found according to the records of the last year. This gives 15% of the total. Out of this number something like 108 papers were obtained, giving a percentage of 1.8% out of the entire membership. This adds to our fund of information one paper to about every 55 members or about one paper to every nine members in attendance, or an average of 12 papers to each association recorded. The percentage of individual papers presented per association as compared to the members present at the meeting of their respective association, show a great variation. Pennsylvania is the highest; with 40%, and New York the lowest; with 2%.

It is quite evident, that these facts prove the contention, for one can see that there is a sorrowful lack of interest all along the line.

In support of the statement, that the dissemination of knowledge is one, if not the all important feature of our state meetings, I should, in passing, refer you to our national association, or that of the American Medical. It seems the only matter of importance that comes before these bodies other than that of legislation, is that of education, be it scientific or commercial. So I say, our various pharmaceutical associations should be adjudged in neglect. This much talked of "Professional Pharmacy" can be no better fostered than by reason of the production of a fair quantity, and a good quality of original material for reading and discussion. In view of this, and it should not be difficult, the annual meetings could not avoid becoming of interest to every one and thereby truly scientific. That scientific touch, that so many of us desire that our meetings should possess, will no longer obtain, unless we show a greater interest in the welfare of this particular committee, for by no other channel can it become possible other than this one; at least not so readily.

If we are to expect a continuation of such a committee, if we are to advance the interest of our profession, if we are to gain in strength, knowledge and prestige, we must show more willingness to coöperate and assist this committee in its work. By reason of the success of this committee's work, many, if not all of us, will doubtless return home much richer in the world's knowledge of our chosen profession, than when we came.

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#### AMYL NITRITE; ITS PREPARATION, PURITY AND TESTS.

FRANK O. TAYLOR, PH. C.

(Continued from September Number.)

The B. P. says: "A mixture of 5 volumes with sufficient alcohol (90%) to form 100 volumes affords a liquid of which a portion tested in a nitrometer, as described under "Spiritus Aetheris Nitrosi," should yield not less than six times its bulk of nitric oxide gas." This is equivalent to about 66 percent. by weight of pure amyl nitrite. This also is a standard easy of attainment, in fact it is decidedly too low. A sample which will meet the distillation test will more than respond to this assay.

Again, the U. S. P. imposes an assay requiring about 80% of pure amyl nitrite. This is not at all too high but of itself would readily pass a sample as of standard quality which might be far from such. If amyl nitrite has been imperfectly made from an impure alcohol, it might easily contain lower alkyl nitrites and un-

changed amyl alcohol. These lower nitrites have a specific gravity differing little or not at all from that of amyl nitrite and for equal weights or volumes containing much more of the nitrite radicle. For example 0.179 grammes of nitrite gives 30 cc. of nitric oxide gas at normal temperature and pressure. If this is assumed to be amyl nitrite it is equivalent to 87.2 percent. by weight of the pure ester. If instead it be propyl nitrite the percentage is 66.3, a difference of nearly 21 percent. It is not our intention to enter into any discussion of the various assay methods proposed for amyl nitrite, as this has been very thoroughly discussed. So we shall simply refer to some of the more important articles on the subject, viz.: Allen, Pharm. Jour. (3) 16, 442; Curtman, Proc. A. Ph. A., 1892, 159; Smith, Am. Jour. Pharm., 1898, 273; and Fisher and Anderson, Pharm. Arch., 1898, 189.

Practically all the published examinations of commercial amyl nitrite have consisted simply of determinations of specific gravity, boiling point and the use of a fractional distillation or assay alone; seldom both together. It is perfectly true that these are the only methods we can apply for quantitative valuation of amyl nitrite but it is equally true that neither one alone is capable of always giving reliable results. While fractionation and nitrite assay have been used together, the proper relationship which should exist between them in medically acceptable amyl nitrite has not been carefully considered. From using both fractional and gasometric assay in commercial work we find that an excellent idea of the value and purity of amyl nitrite can be obtained by the use of both together where either one alone may lead to erroneous conclusions.

The writer's experimental work was not in any way an investigation in pure chemistry for this aspect of the subject has been dealt with at length and carefully by others, but is to be considered wholly from the standpoint of commercial and pharmaceutical work and hence no special refinements of assay or distillation methods have been used.

The customary form of nitrometer was used and, as the general application of the assay is always the same, details are omitted, being given at length in many other places. Correction of the gas volume was made for temperature only. This correction is necessary because as compared to the total volume it is at ordinary temperature, large, and may easily be applied. The correction for barometric pressure is by no means so large at low altitudes and average conditions of weather and is hardly necessary for all essential purposes of the assay and, though the U. S. P. specifies such correction, it will usually be omitted by pharmacists from lack of reliable means of determining the pressure, except in the higher altitudes where the correction is important. The application of a correction for vapor-tension of the liquid in the nitrometer is not to be thought of for ordinary pharmaceutical work, especially as it is more or less completely compensated by the solubility of the nitric oxide in the saline solution of the nitrometer. For calculation of such details see Brandel: Pharm. Review, 1904, 273 and 445, and Lyon: *ibid.* 440.

Distillations, almost without exception, were carried on in ordinary side-neck distilling flasks of 250 cc. to 300 cc. capacity, having a neck of 20 mm. internal diameter and about 70 mm. long up to the side-neck. The mercury column of the thermometer used was wholly immersed in the vapor when possible; other-

wise proper correction was made for exposed mercury column. Delicate still-heads or fractionating columns were intentionally avoided in the effort to have conditions such as might be expected in ordinary pharmaceutical testing. In some cases a small Würtz-tube with two bulbs and side neck was used in connection with a round-bottomed flask without side neck and of the same capacity as the side-neck flasks.

## EXPERIMENTAL WORK.

To begin with, samples from six different manufacturers were examined with results which are recorded at length in table I and in more condensed form in table II.

TABLE I.

	1	2	3	4	5	6
Assay .....	87.5%	86.6%	96.1%	65.3%	91.9%	1.1%

## DISTILLATION.

The amount opposite any temperature is that which distilled between that temperature and the temperature of the next preceding entry in the same column.

Temperature.						
Below 70° .....				6.0%		
80° .....				5.5		
85° .....				7.5		
Below 85° .....			21.0%			
90° .....			17.5	12.5		
Below 90° .....	1.0%	33.0%				2.5%
92° .....		13.5	12.0	5.5	2.0%	7.0
94° .....		12.0	9.5	4.0	8.0	
96° .....	7.0	11.0	10.0	6.0	39.0	9.0
97° .....					30.5	
98° .....					9.0	
99° .....	12.5	13.5	13.5	7.0	3.0	
100° .....	8.0	2.5	2.0	3.0	2.0	2.0
101° .....	7.5	2.0	2.0	2.0		
102° .....	4.5	1.0				
104° .....	9.5	1.0		7.5		
106° .....	6.5	1.0		2.0		
108° .....	6.0	1.0		3.0		
110° .....	2.5	1.0	5.0	2.0		1.0
120° .....	9.5			5.5		3.5
130° .....	5.0			7.0		35.0
135° .....	7.5					22.0
Residue .....	13.0	5.5	6.0	12.5	5.0	17.0
Water .....						2.0

TABLE II.

	1	2	3	4	5	6
Below 90° .....	1.0%	33.0%	38.5%	31.5%	0.0%	2.5%
90°-100° .....	27.5	52.5	47.0	25.5	95.0	18.0
Above 100° .....	70.5	12.5	13.0	41.0	5.0	78.5

NOTE:—In all distillations in this paper there is a certain amount of loss not taken into account so the distillate and residue will not total 100%.

The table scarcely requires comment. No better evidence of the tremendous difference in quality of commercial amyl nitrite could be desired than a comparison of 5 and 6; one the best, the other the worst found on the market; both from

reputable manufacturers and, while 6 is 40 cents per pound cheaper it is in reality worth absolutely nothing. The futility of such a compound in the severe paroxysms of angina pectoris renders its use a danger instead of a source of safety. Number 5 is, on the other hand, an excellent example of what a first-class amyl nitrite should be. Nothing better need be asked for all therapeutic work.

With 91.9 per cent. of amyl nitrite by assay, nearly 12 per cent. in excess of the U. S. P. requirements, 95 per cent. distilling between 90° and 100° or 25 per cent. better than the B. P. standard, and 78.5 per cent. between 94° and 98°, we have proof of the quality that can be offered for sale at a price by no means excessive. That 18 per cent. of 6 distils between 90° and 100° where only 1.1 per cent. is shown by assay is accounted for by the fact shown by Young and Fortey (Jour. Chem. Soc., 1902, 734) that a binary mixture of amyl alcohol and water distils constantly at 95.15°. The influence of the small amount of amyl nitrite present, together with the water, so lowers the distilling temperature that this unexpectedly large quantity of distillate is collected at 90°-100°. This is a good instance of the impossibility of judging amyl nitrite by the fractional distillation alone, for knowing the assay and fractionation of 1 and 4 we would say that 6 ought to contain about 40 per cent. amyl nitrite. It consists chiefly of unchanged amyl alcohol and it is hard to conceive by what crude process it was made or how it was permitted to go on the market.

The remarkably large quantity distilling below 90° in 2, 3 and 4 is good evidence of the presence of lower homologous nitrites. The distillate above 100° in 2 and 3 shows that the most of the alcohol was converted to nitrite, but the large low boiling portion shows the impurity of that alcohol. An assay of 96.1 per cent. would lead us to think we had obtained a most excellent product, even better than 5, but it is really far inferior. Next to 6, 4 is the worst of this lot as it was evidently made from a poorly rectified alcohol and much of the true amyl alcohol remained unacted upon. The assay figures further confirm this conclusion. The fallacy of the assay alone is well shown by table I. Four of the six samples are well above U. S. P. standard of assay, but only one of these is worthy of recognition as a first-class product.

The quality of 6 was so poor that it seemed surely to be through some mistake that it was found on the market and so four months later six samples were obtained in order to again test them to see if the product of these same houses was fairly constant in its quality. The intervening time would probably be sufficient to change the market so that new lots of goods would be tested.

The fractional distillations were made very carefully especially below 90°, where table I was deficient. Also examinations were made for acidity, aldehyde and nitrites.

Acidity is expressed as cc. of N/1 alkali to neutralize 5 cc. of amyl nitrite, the U. S. P. limit being 1 cc.

Aldehyde was tested for by the U. S. P. test.

Nitrates were tested for by the destruction of nitrites by urea and dilute sulphuric acid and their subsequent detection by zinc and iodo-starch paste.

The results are appended in tables III and IV.

TABLE III.

	7	8	9	10	11	12
Assay .....	25.5%	80.0%	59.9%	83.9%	78.2%	90.7%

## DISTILLATION.

Temperature.	Percentage.					
Below 60° .....	....	0.5	....	....	....	....
70° .....	....	3.5	....	....	....	....
Below 70° .....	....	....	2.5	....	1.5	....
75° .....	....	1.5	4.0	....	....	....
80° .....	7.0	6.5	2.5	....	3.0	....
Below 80° .....	....	....	....	0.5	....	....
85° .....	11.5	12.0	11.0	....	4.0	....
90° .....	10.0	11.0	3.0	1.0	10.0	....
92° .....	1.0	8.0	7.0	3.5	3.0	....
94° .....	0.5	6.0	5.0	8.0	8.5	1.0
96° .....	0.5	10.0	6.0	13.0	10.0	6.0
97° .....	....	3.0	....	9.0	3.0	13.0
98° .....	....	3.5	....	12.0	4.0	45.0
99° .....	1.0	2.5	6.0	10.0	6.0	13.0
100° .....	Trace	2.0	1.5	6.0	4.0	7.0
101° .....	....	....	....	5.0	4.0	4.0
102° .....	....	....	....	6.0	3.0	3.0
105° .....	1.0	12.0	10.5	6.0	9.0	....
110° .....	0.5	3.0	10.0	5.0	7.0	....
120° .....	6.0	3.0	7.0	4.0	6.0	....
125° .....	6.0	1.0	....	....	3.0	....
130° .....	17.5	....	5.0	1.0	....	....
135° .....	24.0	2.0	4.0	....	1.0	....
140° .....	....	....	4.0	....	....	....
Residue .....	12.0	5.0	9.0	7.0	8.0	7.5
Water .....	2.5	None	0.5	Trace	Trace	Trace
Acidity (A)* .....	0.7	0.85	1.1	0.4	0.6	0.2
(B) .....	0.5	0.4	0.9	0.3	0.4	0.05
Aldehyde .....	None	Strong	Marked	Faint	Marked	None
Nitrate .....	Trace	None	Slight	None	Trace	None

\*(A)=before distillation and (B)=after distillation; the distillate and residue being mixed before again taking the acidity.

TABLE IV.

Temperature.	7	8	9	10	11	12
Below 90° .....	28.5	35.0	23.0	1.5	18.5	0.0
90°-100° .....	3.0	35.0	25.5	61.5	38.5	85.0
Above 100° .....	67.0	26.0	49.5	34.0	41.0	14.5
Water .....	2.5	None	0.5	Trace	Trace	Trace

Of the six sources here represented number 11 was not included in Table I and 1 of Table I is not in Table III, while of the remainder 2 and 8, 3 and 10, 4 and 9, 5 and 12, and 6 and 7 are of the same manufacture.

Number 7 shows improvement over 6, but is still so bad that it is practically worthless. The assay shows much better and the extremely small quantity distilling between 90° and 100° is due to the low boiling point of an amyl nitrite-water mixture. As before, this sample is crudely made and neither distilled nor dried.

Number 12 is not so good as number 5 but is still of a high standard and well beyond any pharmacopœial requirements.

Next to 12 may be classed 10 which is of by no means bad quality, tho not meeting the B. P. distillation test. It had evidently been made with some care from good alcohol and been purified by washing and drying tho not by distillation.

The distillate below 70° in number 11 shows the use of an alcohol not sufficiently rectified to remove all lower boiling homologues. This is still more the case with 8, which gives 4 per cent. of distillate below 70° and 0.5 per cent. below 60°. The exact point at which this distillation began is not known as the thermometer used did not register lower than 57° and several drops of distillate were collected before that temperature was reached. This sample contained no perceptible quantity of water so the low boiling portion is evidently due to small amounts of propyl and butyl alcohol present in the amyl alcohol used.

Number 9 showed 0.5 per cent. of water present but that will not account for the amount boiling below 90°; so here also lower nitrites are present, as well as unchanged amyl alcohol. Its acidity is also beyond the U. S. P. limit.

In the cases of 7, 8, 9 and 11 the portion which does not distil below 135° proves the presence of high boiling compounds produced from amyl alcohol or its impurities and may be due to nitropentane (boiling between 150° and 160°); but, as will be seen later, it contains other substances of still higher boiling points.

The first few drops of distillate in 8 and 9 gave an odor suggestive of hydrocyanic acid but the Prussian Blue test did not prove its presence.

Number 8 is also an example of the necessity of a distillation test. By assay it shows 80 per cent. amyl nitrite or just the U. S. P. limit, but the fractionation proves that it is far from being as good as this would make it seem.

An interesting and unexpected fact is found in the lowering of the acidity in every case after distillation. It was expected that the acidity would increase after distillation through decomposition, this very thing being given by D. B. Dott (Pharm. Jour. (3) 10, 231) as proof that amyl nitrite decomposes during distillation, but the reverse occurred by the expulsion of a volatile acid, presumably dissolved nitrous anhydride. Taking the twelve samples into consideration, representing seven manufacturers, 5 and 12 are excellent; 10 is fairly good; 1, 2, 3, 8 and 11 are only fair; 4 and 9 are poor; 7 is very poor and 6 cannot be classed as amyl nitrite. What is the cause of this very poor exhibit? Is it so difficult to make an amyl nitrite of first quality or is it due to careless methods? To obtain some definite information on this point small quantities of amyl nitrite were made (by the nitrous acid process) from different grades of alcohol with various changes in the details of production, using always methods and apparatus which have been used on a manufacturing scale.

The first care was to obtain an alcohol of suitable quality. Three lots were obtained and tested for specific gravity, boiling point and optical rotation, with results as shown in the following Table V. Number 1 was said to be an alcohol distilling between 125° and 132°. Number 2 purported to be a very pure, reagent amyl alcohol. Its specific gravity of 0.814 confirmed this but two perfectly agreeing distillations gave condemning results. Number 3 marked "Pure" and said to distil between 128° and 130° proved to be of excellent quality.

TABLE V.

	1	2	3
Specific Gravity .....	0.816	0.814	0.818
Optical Rotation (100 mm. tube).....	1° 00'	0° 40'	1° 12'
Distillation—Below 125.8°*.....	....	4%	....
125.8°–127.8° .....	....	3%	....
Below 127.8° .....	7%	....	....
127.8°–128.8° .....	8	3	4%
128.8°–129.8° .....	23	6	64%
129.8°–130.8° .....	60	36	28%
130.8°–131.8° .....	....	35	....
131.8°–132.8° .....	....	4	....
132.8°–135.8° .....	....	5	....
Residue .....	2	4	4.

\*In all the distillations here recorded the thermometer was read to even degrees and fractional readings are due to corrections for exposed mercury column.

The specific gravity of each successive 25% of distillate or distillate and residue from No. 2 was also taken.

First	25%	Sp. Gr.	0.818
Second	25%	Sp. Gr.	0.813
Third	25%	Sp. Gr.	0.811
Fourth	25%	Sp. Gr.	0.809

In the first 25% of distillate a distinct trace of water settled to the bottom. This sample, therefore, supposed to be of exceptionally good quality was not as good as Number 1.

Later, for the purpose of comparison, a sample of Kahlbaum's Amyl Alcohol, boiling point 130°–132°, was purchased, which distilled as follows:

130°–131° .....	15 percent
131°–131.5° .....	82 "
Residue .....	3 "

Rotation in 100 mm. tube, -1° 20'.

Alcohol Number 1 was of proper quality for making amyl nitrite and not too expensive for that purpose. What manner of nitrite could be made from it?

(1) To answer this first question 150 cc. (122 gm.) of the alcohol was placed in a 250 cc. side-neck distilling flask which was connected with a Liebig condenser and nitrous gas generated in another flask from nitric acid (sp. gr. 1.35) and arsenous acid, was passed through it. During this saturation no attempt was made to keep the alcohol cool but it was permitted to heat up and hence the arrangement for condensing any volatilized nitrite and collecting it in a flask placed below the condenser. The stream of gas was continued until the crude amyl nitrite changed from a green color to brownish color and the colored vapors began to pass through without absorption. The process was now stopped, the small amount of distillate and the contents of the flask transferred to a separatory funnel and the lower layer of acid-water run off. The crude nitrite was now washed, first with water, then with sodium carbonate solution (about 5%) until the washings were no longer colored yellow, then with water, and finally

dried over calcium chloride. After the purification 163 cc. (142 gms.) of amyl nitrite was obtained and this was fractionally distilled:

90°- 92° .....	3.7 percent
92°- 94° .....	3.7 "
94°- 96° .....	30.0 "
96°- 97° .....	20.9 "
97°- 98° .....	15.3 "
98°- 99° .....	7.0 "
99°-100° .....	3.7 "
100°-105° .....	6.1 "
105°-110° .....	3.7 "
Residue .....	4.5 "

Of the entire product, 84 percent. distilled between 90° and 100° and 73 percent. between 94° and 99°. The fraction distilling between 90° and 100° showed no test for aldehyde, showed an acidity of 0.5 cc.\* and assayed 99 percent. An assay of the original nitrite as obtained before distillation was not made, but it is evident that without this additional rectification this product is superior to nearly all the commercial samples previously examined, and after rectification is equal to any of them.

Having found that it is easily possible to make an amyl nitrite better than most on the market and decidedly superior to U. S. P. requirements, the next question arising is naturally regarding the effects of modifications of this process and use of different materials.

(2) Alcohol No. 3 was used for this experiment and 150 cc. were treated as in experiment 1, except that the amyl alcohol was kept cool with ice while passing the nitrous gas into it. A longer time was required before the apparent end of the process. The crude product after washing and drying amounted to 161 cc., which distilled in the following manner:

Below 90° .....	1.2%	99°-100° .....	8.4%
90°-92° .....	1.8%	100°-101° .....	4.2%
92°-94° .....	6.0%	101°-105° .....	9.6%
94°-96° .....	12.1%	105°-110° .....	6.6%
96°-97° .....	11.4%	110°-120° .....	4.8%
97°-98° .....	16.9%	120°-130° .....	1.8%
98°-99° .....	8.4%	Residue above 130°.....	3.6%
	90°-100°.....	65.0%	
	94°- 99°.....	48.8%	

The fraction between 90° and 100° assayed 96.7 percent., and had an acidity of 0.8 cc. and a mixture of the fractions above 100° and below 90° assayed 73 percent. with an acidity of 1.0 cc. While the fraction 90°-100° was good, yet it is evident that the amyl alcohol had not been thoroughly saturated with nitrous acid. Further, it is shown that a comparatively large quantity of amyl nitrite remains in the portions distilling outside the standard temperature-range if nothing more than the ordinary distilling flask be used for this purpose. In this case the alcohol used was somewhat better than in (1) but from incomplete saturation the resulting product was not so good.

(To be concluded)

\*All statements of acidity are expressed as the number of cc. of N/1 alkali required to neutralize the acid in 5 cc. of amyl nitrite, the test being applied as for the U. S. P. test and then the excess alkali titrated with N/1 sulphuric acid.



## THE N. A. R. D. CONVENTION.

The Convention of the National Association of Retail Druggists was a most successful gathering, notwithstanding the extremely hot weather which attended the meeting.

From the opening of the convention to its end, the business of the Convention was done with a snap and that attention to objective which always attends the meetings of our sister association. The address of the President was admirable in its treatment of the various



evils which affect the trade, and in its suggestion of remedies for them.

President Finneran, in his address, forcibly advocated the entrusting of the enforcement of drug laws to the Boards of Pharmacy of the several States, uniformity of drug-legislation, and a Federal law to standardize prices.

The report of Secretary Potts showed a depreciation of \$8,000.00 in revenue during the past year, which had been more than compensated for by economies in administration, which showed a net gain to the Association of \$7,000.00.

The Committee on Propaganda reported progress made during the year, and that section of the report dealing with the enforcement of higher standards of purity and freshness in remedies met with the approval of all the delegates. In the discussion that followed, demand was made that physicians use prescriptions which would enable the druggist to

compound the remedies according to the national standards adopted in this country.

The report of the Committee on National Legislation presented a comprehensive outline of the progress made during the past year along these lines.

The Committee on Public Relations in its report insisted on the value of publicity, especially in the newspapers, of matters which would bring about more cordial relations and better understanding between druggist and public. It suggested that each State employ an expert publicity agent for this purpose. This suggestion met with great applause and promise of prompt support.

The Committee on Pharmacy Laws praised the Massachusetts anti-narcotic laws, as models of justice, especially those provisions which restrict the sale of all narcotics in deadly doses, except upon the written prescription of an authorized physician, dentist, or veterinary surgeon. This law provides that all prescriptions shall be kept on file by the druggist, and that the physician shall keep a record in a suitable book of the name and address of all such patients who receive narcotics.

In a vigorously-worded resolution, the Association proffered its services to city, State and Federal officials for the conservation of the drug and medicinal supply. A copy of the resolutions were ordered forwarded to the United States Attorney-General, James C. McReynolds.

## RESOLUTIONS.

"WHEREAS, There exists, because of the European war, a scarcity of drugs and chemicals and sick-room necessities employed in the conservation of the health of the people of this country; and,

"WHEREAS, The welfare of the nation demands that every effort should be made to conserve the existing supply of these articles; and,

"WHEREAS, It is a common knowledge that many wholesale dealers and manufacturers of drugs, chemicals and medicinal products employed in relieving the condition of the sick, are displaying lack of humanitarianism and patriotism by taking advantage of the grave conditions that confront the American people to advance unnecessarily the price of the essential commodities, therefore, be it

"Resolved, That the National Association of Retail Druggists, through its committees and organization forces, and the efforts of its individual members, will extend every assistance to local, State and Federal Governments in conserving the supply of drugs and medicines, and preventing forestalling; and, be it

"Resolved, That the National Association

of Retail Druggists hereby condemns most vigorously the practice of those wholesale dealers and manufacturers in the drug field who have needlessly advanced the price of many of the products they supply."

The officers elected for the ensuing year were:—

President—Samuel C. Henry.

First Vice-President—A. S. Ludwig.

Second Vice-President—W. L. Humphrey.

Third Vice-President—T. C. Coltman.

Treasurer—Grant W. Stevens.

Secretary—Thomas H. Potts.

Executive Committee:—C. H. Huhn, J. F. Finneran, R. J. Frick, T. S. Armstrong, M. A. Stout, J. P. Crowley.

The Women's Organization of the Association was welcomed by Mrs. William E. Lee, President of the local chapter, and a response was made by Mrs. Jessie F. Waterhouse, President of the Women's Organization. Then, following an address by the President, and the receiving of committee reports, it was announced that a scholarship had been founded for the study of pharmacy. The recipient of the free tuition will be chosen by the organization's executive committee from a list of candidates presented to the committee by the various chapters. The committee is also empowered to choose the college to which the scholarship will apply.

The Women's Organization elected the following officers:—

President—Mrs. F. E. McBride.

Vice-Presidents—Mrs. B. A. C. Hoelzer, Miss Clara Hulskamp, Mrs. A. W. Panly, Miss Nora V. Brendle, Mrs. R. G. Rutherford.

Secretary—Mrs. Nellie F. Lee.

Treasurer—Mrs. Otto C. Greenland.

Board of Directors:—Mrs. Jessie F. Waterhouse, Mrs. L. O. Wallace, Mrs. S. A. Eckstein, Mrs. Louis Emanuel, Mrs. John T. Roe, Mrs. W. E. Warn, Mrs. Charles Brunstrom, Mrs. H. A. Pierce.

### College and Society

#### THE COLLEGE OF PHARMACY OF THE UNIVERSITY OF IOWA.

The College was represented at the annual convention of the A. Ph. A. at Detroit by Dean W. J. Teeters, Prof. R. A. Kuever,

Prof. Zada M. Cooper. Dean Teeters was re-elected secretary of the Conference of Pharmaceutical Faculties, and was also nominated a candidate for the presidency of the Association for the year 1914-1915, which vote will be taken by mail.

Prof. Cooper was elected an Associate in the Section on Education and Legislation, and Prof. Kuever was elected secretary of the same section for the ensuing year.

Dean Teeters visited with relatives at Alliance, Ohio, for a few days following the A. Ph. A. meeting at Detroit.

Prof. Zada M. Cooper visited at Cleveland and Wooster, Ohio, for a short time after the convention at Detroit.

The third annual home-coming will be October 22, 23, 24, at the time of the Iowa-Minnesota football game.



#### A NEW DEPARTMENT OF PHARMACY.

In response to the request of the West Virginia State Pharmaceutical Association the Board of Regents of West Virginia University has established a department of pharmacy.

A two, three, and four year course is offered. The two year course leading to the certificate of Graduate in Pharmacy, provides the foundation in Pharmacognosy and Pharmacy, and the ground work in Analytical Chemistry as applied in the drug business and required for various manufacturing purposes. The third year is especially designed to enable the Pharmacist to practice Urinary, Bacteriological, and Toxicological analysis for the physician and to act as Food and Drugs Chemist either for the U. S. Government or for private corporations. It will be arranged to award the degree of Bachelor of Science (in Pharmacy) to those completing the course of four years, including studies in mathematics, physics, language and science, as well as the entire pharmaceutical work of the two year course. All subjects are taught by men who are specialists in their respective branches.

Professor Charles H. Rogers has been called to establish and also be the head of the department. Previous to his election to his present position he was a member of the faculty of the College of Pharmacy of the University of Minnesota.