his reputation by fitting glasses for correcting vision when he is aware that his patron needs to consult a physician or surgeon.

The only reason for presenting this decision in these columns is thereby to direct attention to proposed measures, enactments and decisions which may in a somewhat similar way affect the drug business and pharmacy; members of legislative committees know the dangers of adverse legislation and also of that which seeks to grant special favors or privileges. Laws applying to pharmacy should protect the people and give them better service.

President Harding is said to favor a federal department of Public Health; pharmacy as a branch of medicine should receive due consideration in the measure which will provide for its establishment.

E. G. E.

## THE MEMBERSHIP OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

BY WM. B. DAY.

In view of the statements that have been made from time to time concerning the growth or lack of growth in membership of the American Pharmaceutical Association, it seems worth while to present in tabular form a comparison of the membership of the Association during the past seven years, the period during which the writer has occupied the offices of General Secretary and Chairman of the Membership Committee. With the assistance of Mr. Wm. Mittelbach, who for a number of years was Chairman of the Membership Committee and who is deeply interested in the growth of the Association, the following tabulations\* of the membership by states and cities have been prepared.

The comparison of the total membership year by year beginning with 1914 is of interest inasmuch as it reveals the fact that the total increase in membership in these seven years amounts to 1096 members, or 46 percent. Explanatory of these figures, attention should be called to the fact that during the seven years, from 1914 to the present time, 3430 new members were added—enough to have more than doubled the membership. The resulting gain of only 1096 means that in seven years 2334 members have been lost through suspension, resignation or death. While an average annual increase of six percent is rather small, there is encouragement in the fact that during the last two years the average increase has been 15% and 11%, respectively.

As might be expected, the states having the largest population have as a rule the largest membership, but even here there are other factors to be considered. Density of population is a favorable factor; for example, Ohio, with about 20% larger population than Texas, has more than twice as many A. Ph. A. members. Massachusetts has 40% more members than Michigan and double the number of members California has, while the three states rank close together in population. New Jersey, with a population 10% less than Missouri, has 25% larger membership in the A. Ph. A. Energetic membership campaigns exert great influence, thus Virginia

<sup>\*</sup> These figures were compiled from the geographical lists of members published in the Year Book, Vols. 1–7 and the manuscript for Vol. 8 now in press.

and Tennessee, with an equal population, are very disproportionate in their A. Ph. A. membership, Virginia having nearly four times as many members as Tennessee; Minnesota has nearly five times as many members as Kentucky though of nearly the same population. In great measure, large cities mean proportionately more A. Ph. A. members, yet Table No. 2 shows that other factors are to be considered. Thus, Detroit, with a population about 20% larger than Boston, has more than twice as many A. Ph. A. members—a situation for which the large pharmaceutical industries in Detroit are in part responsible. Minneapolis, with a population considerably less than that of Milwaukee, has two and one-halft imes as large an A. Ph. A. membership. Havana, Cuba, makes an excellent showing with twenty-four A. Ph. A. members—twice as many as Omaha.

The selection of the city for the annual convention usually means a stimulus to membership. The growth of the A. Ph. A. membership in New Orleans during the past year, since announcement was made of the Crescent City for the meeting place, has been almost phenomenal, due, in large part, to the enterprise and activity of the local membership committee. The stimulus afforded the California membership by the San Francisco meeting of 1915 is another instance.

Active and successful local branches not only build up but *hold* the membership, as is well shown by the growth in membership in the cities of New York, Philadelphia and Chicago. The failure of the Wilkes-Barre Branch is indicated by the loss of more than half the members in that city during the past year. The energetic membership campaign carried on by the Virginia Branch has resulted in the high rank attained by that state and its capital, Richmond. Northwestern Branch has doubled the membership in the "Twin Cities."

While tabulation No. 1 shows that membership in many of the states has been stationary or nearly so and in a few instances has even decreased, in a number of states the membership has doubled, tripled or even quadrupled—in North Dakota nearly sextupled—during the past seven years—and the result as a whole cannot be called unsatisfactory. Our rate of growth has been notably accelerated since 1919, and, having acquired this momentum, a little more effort and a little better cooperation on the part of our members should soon place the Association in the position that it must rightfully hold as a national body.

At the present rate of growth, we will pass the 5000 mark within the next four years. It should be the effort of every member to bring this about, bearing in mind that it is not less important to hold the members already enrolled than to add new members to our organization.

Table 1.—Membership by States.								
	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.
Alabama	15	17	17	17	23	21	19	42
Arizona	0	1	4	1	0	0	1	1
Arkansas	21	26	24	16	15	17	30	32
Alaska	2	2	3	3	3	4	3	2
California	90	82	94	102	94	75	74	73
Colorado	68	58	58	51	48	43	40	41
Columbia, District of	34	34	34	35	33	34	39	39
Connecticut	19	18	18	30	30	26	28	26
Delaware	3	6	7	7	8 ~	5	4	3
Florida	19	20	21	22	23	` 27	33	25

Ceorgia	416		JOURN	AL, O	f THE			Vol.	X, No. 6
Idaho.	Georgia		20	16	18	15	12	17	18
Hilmois	Hawaiian Islands			1	1	1	1	1	1
Indiana	Idaho		5	6	8	6	5	5	9
Iowa.	Illinois	180	177	179	185	202	252	<b>264</b>	383
Kansas.         25         24         25         28         26         19         24         40           Kentucky.         34         44         39         32         30         29         31         36           Louisiana.         24         26         26         33         31         34         44         78           Maine.         26         24         28         33         32         23         24         24           Maryland.         73         75         73         75         72         65         66         70           Massachusetts.         134         141         140         138         135         120         136         142           Michigan.         57         119         106         106         99         103         108         109           Minnesota         43         45         47         55         50         97         138         174           Mississippi.         9         8         9         15         17         14         15         18           Morthana         10         16         17         19         19         18         24 <td>Indiana</td> <td></td> <td></td> <td></td> <td>97</td> <td>114</td> <td>101</td> <td>99</td> <td>94</td>	Indiana				97	114	101	99	94
Kentucky					53	44	45	45	68
Louisiana	Kansas				_	26	19	24	40
Maine	Kentucky			39	32	30	29	31	36
Maryland.         73         75         73         75         72         65         66         70           Massachusetts.         134         141         140         138         135         120         136         148           Michigan.         57         119         106         106         99         103         108         109           Minnesota.         43         45         47         55         50         97         138         174           Missouri.         110         130         117         160         98         93         121         128           Montana.         10         16         17         19         19         18         24         30           Nebraska.         40         35         42         41         35         32         29         30           Nevalca.         6         7         6         7         6         6         7         7           New Jersey.         73         92         99         304         382         385         420         421         4         3         3           New Jersey.         73         92         99         <	Louisiana				33	31	34	44	78
Massachusetts	Maine				_		23	24	24
Michigan	•						65	66	70
Minnesota	Massachusetts		141	140	138	135	120	136	142
Mississippi.         9         8         9         15         17         14         15         18           Missouri.         110         130         117         160         98         93         121         128           Montana.         100         16         17         19         19         18         24         30           Nebraska.         40         35         42         41         35         32         29         33           New Aca         1         2         2         2         3         3         2         2           New Hampshire.         6         6         7         6         6         6         7         7           New Jersey.         73         92         90         107         98         105         130         137           New Jersey.         73         92         90         107         98         105         130         137           New Jersey.         73         92         90         107         98         105         130         131           Morth         4         6         5         4         4         4         3         3	_				106	99	103	108	109
Missouri	Minnesota		- <del>-</del>			50	97	138	174
Montana.         10         16         17         19         19         18         24         30           Nebraska.         40         35         42         41         35         32         29         33           Nevada.         1         2         2         2         2         3         3         2         2           New Hampshire.         6         7         6         7         6         6         7         7           New Jersey.         73         92         90         107         98         105         130         137           New Mexico.         6         4         6         5         4         4         3         3           New York.         228         268         299         364         382         385         420         421           North Carolina.         15         18         17         25         26         22         32         31           North Dakota.         9         8         8         12         20         24         44         50           Ohia         119         136         137         13         13         12         12<	Mississippi	_			_	17	14	15	18
Nebraska 40 35 42 41 35 32 29 33 Nevada 1 2 2 2 2 3 3 3 2 2 2 New Hampshire 6 7 6 7 6 6 6 7 7 New Jersey 73 92 90 107 98 105 130 137 New Mexico 6 4 6 5 4 4 4 3 3 3 New York 228 268 299 364 382 385 420 421 North Carolina 15 18 17 25 26 22 32 31 North Dakota 9 8 8 12 20 24 44 50 Ohio 1119 136 137 139 136 122 146 157 Oklahoma 13 13 13 15 14 16 13 21 22 Oregon 22 19 18 20 18 17 15 18 Pennsylvania 228 233 229 242 239 318 351 358 Philippine Islands 67 30 6 5 5 2 4 3 Philippine Islands 67 30 6 5 5 2 4 3 Rhode Island 22 19 16 16 15 13 18 15 South Carolina 3 4 5 6 6 6 9 24 28 South Dakota 23 24 26 24 27 23 36 35 Tennessee 71 59 49 38 40 31 36 31 Texas 61 63 60 71 68 68 76 66 Utah 9 10 8 9 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 6 8 Utah 9 10 8 9 7 7 6 7 8 Utah 9 10 8 9 7 7 8 Utah 9 10 8 9 7 7 8 Utah 9 10 8 9	Missouri	110	130			98	93	121	128
Nevada 1 2 2 2 2 3 3 3 2 2 2 New Hampshire 6 7 6 7 6 6 7 7 7 New Jersey. 73 92 90 107 98 105 130 137 New Mexico 6 4 6 5 4 4 4 3 3 3 New York. 228 268 299 364 382 385 420 421 North Carolina 15 18 17 25 26 22 32 31 North Dakota 9 8 8 12 20 24 44 550 Ohio. 119 136 137 139 136 122 146 157 Oklahoma 13 13 15 14 16 13 21 22 Oregon. 22 19 18 20 18 17 15 18 Pennsylvania 228 233 229 242 239 318 351 358 Philippine Islands. 67 30 6 5 5 2 4 4 3 Porto Rico. 2 2 19 16 16 15 13 18 15 South Carolina 3 4 5 6 6 6 9 24 28 South Dakota 23 24 26 24 27 23 36 35 Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 66 Utah. 9 10 8 9 7 6 6 8 Vermont. 17 16 15 16 15 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 17 16 15 15 16 11 14 14 10 Vermont. 18 13 27 26 21 22 18 16 15 Vermont. 19 13 27 26 21 22 18 16 15 Vermont. 38 37 37 37 37 41 39 36 41 Vest Virginia 13 27 26 21 22 18 16 15 Versonia 38 37 37 37 37 37 31 30 34 30 36 Vermont. 14 14 10 20 18 15 24 30 Vermont. 15 18 17 17 19 20 18 18 Vermont. 16 17 18 18 17 17 19 20 18 18 Vermont. 17 18 19 18 19 19 19 19 19 19 19 19 19 19 19 19 19	Montana			_		19	18	24	30
New Hampshire	Nebraska					35	32	29	33
New Jersey. 73 92 90 107 98 105 130 137 New Mexico. 6 4 6 5 4 4 4 3 3 3 New York. 228 268 299 364 382 385 420 421 North Carolina. 15 18 17 25 26 22 32 31 North Dakota. 9 8 8 12 20 24 44 50 Ohio. 119 136 137 139 136 122 146 157 Oklahoma. 13 13 15 14 16 13 21 22 Oregon. 22 19 18 20 18 17 15 18 Pennsylvania. 228 233 229 242 239 318 351 358 Philippine Islands. 67 30 6 5 5 2 4 3 Porto Rico. 2 2 2 2 1 1 2 4 5 5 South Carolina. 3 4 5 6 6 9 24 28 South Dakota. 23 24 26 24 27 23 36 36 Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 68 Utah. 9 10 8 9 7 6 6 8 Vermont. 17 16 15 16 11 14 10 10 10 11 14 10 10 Virginia. 29 30 32 25 24 37 86 114 Washington. 38 37 37 37 41 39 36 41 Wyoning. 5 2 2 6 29 37 35 31 40 41 Dominion of Canada. 13 18 17 17 19 20 18 18 Cuba. 32 26 29 37 2490 2698 2621 2690 3113 3450  TOTALS. 2354 2497 2490 2698 2621 2690 3113 3450  TABLE 2.—Membership in Therry-Five Cities.  TOTALS. 2354 2497 2490 2698 2621 2690 3113 3450  Tennessec. 36 34 35 36 31 24 20 22  Washington. 34 34 34 33 33 30 22 28 29 29  Washington. 34 34 34 33 33 30 22 28 29 29  Washington. 34 34 34 33 33 30 22 28 29 29  Washington. 34 34 34 33 33 30 22 28 29 29	Nevada					3	3	2	2
New Mexico         6         4         6         5         4         4         3         3           New York         228         268         299         364         382         385         420         421           North Carolina         15         18         17         25         26         22         32         31           North Dakota         9         8         8         12         20         24         44         50           Ohio         119         136         137         139         136         122         146         157           Oklahoma         13         13         15         14         16         13         21         22           Oregon         22         19         18         20         18         17         15         18           Pennsylvania         228         233         229         242         239         318         351         358           Philippine Islands         67         30         6         5         5         2         4         3         3           Porto Rico         2         2         2         2         1         1	New Hampshire	6		6	7		6	7	7
New York	New Jersey	73	92	90	107	98	105	130	137
North Carolina	New Mexico	6	4	6	5	4	4	3	3
North Dakota	New York	228	268	299	364	382	385	420	421
Ohio         119         136         137         139         136         122         146         157           Oklahoma         13         13         15         14         16         13         21         22           Oregon         22         19         18         20         18         17         15         18           Pennsylvania         228         233         229         242         239         318         351         358           Philippine Islands         67         30         6         5         5         2         4         3           Porto Rico         2         2         2         1         2         4         5         5           Rhode Island         22         19         16         16         15         13         18         15           South Carolina         3         4         5         6         6         9         24         28           South Dakota         23         24         26         24         27         23         36         35           Tennessee         71         59         49         38         40         31         36	North Carolina			-	25	26	22	32	31
Oklahoma         13         13         15         14         16         13         21         22           Oregon         22         19         18         20         18         17         15         18           Pennsylvania         228         233         229         242         239         318         351         358           Philippine Islands         67         30         6         5         5         2         4         3           Porto Rico         2         2         2         2         1         2         4         5         5           Rhode Island         22         19         16         16         15         13         18         15           South Carolina         3         4         5         6         6         9         24         28           South Dakota         23         24         26         24         27         23         36         35           Tennessee         71         59         49         38         40         31         36         31           Tennessee         71         63         60         71         68         68	North Dakota	9	8	8	12	20	24	44	50
Oregon         22         19         18         20         18         17         15         18           Pennsylvania         228         233         229         242         239         318         351         358           Philippine Islands         67         30         6         5         5         2         4         3           Porto Rico         2         2         2         1         2         4         5         5           Rhode Island         22         19         16         16         15         13         18         15           South Carolina         3         4         5         6         6         9         24         28           South Dakota         23         24         26         24         27         23         36         35           Tennessee         71         59         49         38         40         31         36         31           Texas         61         63         60         71         68         68         76         66           Utah         9         10         8         9         7         6         6         8	Ohio	119	136	137	139	136	122	146	157
Pennsylvania. 228 233 229 242 239 318 351 358 Philippine Islands. 67 30 6 5 5 2 4 3 Porto Rico. 2 2 2 1 1 2 4 5 5 Rhode Island. 22 19 16 16 16 15 13 18 15 South Carolina. 3 4 5 6 6 9 24 28 South Dakota. 23 24 26 24 27 23 36 35 Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 66 Utah. 9 10 8 9 7 6 6 8 Vermont. 17 16 15 16 11 14 14 10 Virginia. 29 30 32 25 24 37 88 114 Washington. 40 35 38 37 30 24 39 41 West Virginia. 13 27 26 21 22 18 16 15 Wisconsin. 38 37 37 37 37 41 39 36 41 Wyoming. 5 2 2 0 0 0 2 2 2 4 Dominion of Canada. 13 18 17 17 19 20 18 18 Cuba. 32 26 29 37 35 31 40 41 In Foreign Lands. 14 14 10 20 18 15 24 30  TABLE 2.—Membership in Thirty-five Cities.	Oklahoma	13	13	15	14	16	13	21	22
Philippine Islands. 67 30 6 5 5 2 4 3 Porto Rico. 2 2 2 1 2 1 2 4 5 5 Rhode Island. 22 19 16 16 16 15 13 18 15 South Carolina. 3 4 5 6 6 6 9 24 28 South Dakota. 23 24 26 24 27 23 36 35 Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 66 Utah. 9 10 8 9 7 6 6 6 8 Vermont. 17 16 15 16 11 14 14 10 Virginia. 29 30 32 25 24 37 86 114 Washington. 40 35 38 37 30 24 39 41 West Virginia 13 27 26 21 22 18 16 15 Wisconsin. 38 37 37 37 41 39 36 41 Wyoming. 5 2 2 0 0 0 2 2 4 Dominion of Canada 13 18 17 17 19 20 18 18 Cuba. 32 26 29 37 35 31 40 41 In Foreign Lands. 14 14 10 20 18 15 24 30  TABLE 2.—Membership in Thirty-Five Cities.  TABLE 2.—Membership in Thirty-Five Cities.  TOTALS 2354 2497 2490 2698 2621 2690 3113 3450  Total 3 8 9 11 12 10 13 11 San Francisco. 36 34 35 36 31 24 20 23 Denver. 34 34 34 33 33 30 28 29 29 Washington. 34 34 34 33 33 30 28 29 29 Washington. 34 34 34 33 33 30 28 29 29		22	19		20	18	17	15	18
Porto Rico. 2 2 2 1 2 1 2 4 5 5 5 Rhode Island. 22 19 16 16 16 15 13 18 15 South Carolina. 3 4 5 6 6 9 24 28 South Dakota. 23 24 26 24 27 23 36 35 Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 66 Utah. 9 10 8 9 7 6 6 8 Vermont. 17 16 15 16 11 14 14 10 Uriginia. 29 30 32 25 24 37 86 114 Washington. 40 35 38 37 30 24 39 41 West Virginia. 13 27 26 21 22 18 16 15 Wisconsin. 38 37 37 37 41 39 36 41 Wyoming. 5 2 2 0 0 0 2 2 4 4 Dominion of Canada 13 18 17 17 19 20 18 18 Cuba. 32 26 29 37 35 31 40 41 In Foreign Lands. 14 14 10 20 18 15 24 30 TOTALS 2354 2497 2490 2698 2621 2690 3113 3450 TABLE 2.—Members HP IN Thrity-Five Cities.  Los Angeles. 13 8 9 11 12 10 13 11 San Francisco. 36 34 35 36 33 30 28 29 29 Washington. 34 34 34 33 33 30 28 29 29 Washington. 34 34 34 35 35 35 34 39 39	Pennsylvania	228	233	229	242	239	318	351	358
Rhode Island   22   19	Philippine Islands	67	30	6	5	5	2	4	3
South Carolina         3         4         5         6         6         9         24         28           South Dakota         23         24         26         24         27         23         36         35           Tennessee         71         59         49         38         40         31         36         31           Texas         61         63         60         71         68         68         76         66           Utah         9         10         8         9         7         6         6         8           Vermont         17         16         15         16         11         14         14         10           Virginia         29         30         32         25         24         37         86         114           Washington         40         35         38         37         30         24         39         41           West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41     <		2	2	2	1	2	4	5	5
South Dakota         23         24         26         24         27         23         36         35           Tennessee         71         59         49         38         40         31         36         31           Texas         61         63         60         71         68         68         76         66           Utah         9         10         8         9         7         6         6         8           Vermont         17         16         15         16         11         14         14         10           Virginia         29         30         32         25         24         37         86         114           Washington         40         35         38         37         30         24         39         41           West Virginia         13         27         26         21         22         18         16         15           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18     <	Rhode Island	22	19	16	16	15	13	18	15
Tennessee. 71 59 49 38 40 31 36 31 Texas. 61 63 60 71 68 68 76 66 Utah. 9 10 8 9 7 6 6 8 Vermont. 17 16 15 16 11 14 14 10 Virginia 29 30 32 25 24 37 86 114 Washington. 40 35 38 37 30 24 39 41 West Virginia 13 27 26 21 22 18 16 15 Wisconsin. 38 37 37 37 41 39 36 41 Wyoming. 5 2 2 0 0 2 2 4 Dominion of Canada 13 18 17 17 19 20 18 18 Cuba. 32 26 29 37 35 31 40 41 In Foreign Lands. 14 14 10 20 18 15 24 30  TOTALS 2354 2497 2490 2698 2621 2690 3113 3450  TABLE 2.—Membership in Thirty-five Cities.  1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921. Los Angeles. 13 8 9 11 12 10 13 11 San Francisco. 36 34 35 36 31 24 20 23 Denver. 34 34 34 33 33 30 28 29 29 Washington. 34 34 34 34 35 35 35 34 39	South Carolina	3	4	5	6	6	9	24	28
Texas         61         63         60         71         68         68         76         66           Utah         9         10         8         9         7         6         6         8           Vermont         17         16         15         16         11         14         14         10           Virginia         29         30         32         25         24         37         86         114           Washington         40         35         38         37         30         24         39         41           West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18           Cuba         32         26         29         37         35         31         40         41	South Dakota	23	24	26	24	27	23	36	35
Utah         9         10         8         9         7         6         6         8           Vermont         17         16         15         16         11         14         14         10           Virginia         29         30         32         25         24         37         86         114           Washington         40         35         38         37         30         24         39         41           West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada.         13         18         17         17         19         20         18         18           Cuba         32         26         29         37         35         31         40         41           In Foreign Lands.         14         14         10         20         18         15         24 </td <td>Tennessee</td> <td>71</td> <td>59</td> <td>49</td> <td>38</td> <td>40</td> <td>31</td> <td>36</td> <td>31</td>	Tennessee	71	59	49	38	40	31	36	31
Vermont.         17         16         15         16         11         14         14         10           Virginia.         29         30         32         25         24         37         86         114           Washington.         40         35         38         37         30         24         39         41           West Virginia.         13         27         26         21         22         18         16         15           Wisconsin.         38         37         37         37         41         39         36         41           Wyoming.         5         2         2         2         0         0         2         2         4           Dominion of Canada.         13         18         17         17         19         20         18         18           Cuba.         32         26         29         37         35         31         40         41           In Foreign Lands.         14         14         10         20         18         15         24         30           TABLE 2.—MEMBERSHIP IN THRITY-FIVE CITIES.           10s Angeles.         13	Texas	61	63	60	71	68	68	76	66
Virginia         29         30         32         25         24         37         86         114           Washington         40         35         38         37         30         24         39         41           West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18           Cuba         32         26         29         37         35         31         40         41           In Foreign Lands         14         14         10         20         18         15         24         30           TABLE 2.—MEMBERSHIP IN THRITY-FIVE CITIES.           1914         1915         1916         1917         1918         1919         1920         1921           Los Angeles         13         8         9	Utah	9	10	8	9	7	6	6	8
Washington.         40         35         38         37         30         24         39         41           West Virginia.         13         27         26         21         22         18         16         15           Wisconsin.         38         37         37         37         41         39         36         41           Wyoming.         5         2         2         0         0         2         2         4           Dominion of Canada.         13         18         17         17         19         20         18         18           Cuba.         32         26         29         37         35         31         40         41           In Foreign Lands.         14         14         10         20         18         15         24         30           TABLE 2.—Membership in Therty-Five Cities.           TABLE 2.—Membership in Therty-Five Cities.           1914.         1915.         1916.         1917.         1918.         1919.         1920.         1921.           Los Angeles.         13         8         9         11         12         10         13         11 <td>Vermont</td> <td>17</td> <td>16</td> <td>15</td> <td>16</td> <td>11</td> <td>14</td> <td>14</td> <td>10</td>	Vermont	17	16	15	16	11	14	14	10
West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18           Cuba         32         26         29         37         35         31         40         41           In Foreign Lands         14         14         10         20         18         15         24         30           TABLE 2.—MEMBERSHIP IN THERTY-FIVE CITIES.           TABLE 2.—MEMBERSHIP IN THERTY-FIVE CITIES.           1914         1915         1916         1917         1918         1919         1920         1921           Los Angeles         13         8         9         11         12         10         13         11           San Francisco         36         34         35         36         31         24         20         23 <td></td> <td>29</td> <td>30</td> <td></td> <td></td> <td>24</td> <td>37</td> <td>86</td> <td>114</td>		29	30			24	37	86	114
West Virginia         13         27         26         21         22         18         16         15           Wisconsin         38         37         37         37         41         39         36         41           Wyoming         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18           Cuba         32         26         29         37         35         31         40         41           In Foreign Lands         14         14         10         20         18         15         24         30           TOTALS         2354         2497         2490         2698         2621         2690         3113         3450           TABLE 2.—MEMBERSHIP IN THIRTY-FIVE CITIES.           THE TOTALS         1914         1915         1916         1917         1918         1919         1920         1921         1920         1921         1920         1921         1920         1921         1920         1921         1920         1921         1920         19	Washington	40	_			30	24	39	<b>4</b> 1
Wyoming.         5         2         2         0         0         2         2         4           Dominion of Canada         13         18         17         17         19         20         18         18           Cuba.         32         26         29         37         35         31         40         41           In Foreign Lands.         14         14         10         20         18         15         24         30           TOTALS         2354         2497         2490         2698         2621         2690         3113         3450           TABLE 2.—MEMBERSHIP IN THIRTY-FIVE CITIES.           1914.         1915.         1916.         1917.         1918.         1919.         1920.         1921.           Los Angeles.         13         8         9         11         12         10         13         11           San Francisco.         36         34         35         36         31         24         20         23           Denver.         34         34         33         33         30         28         29         29           Washington.         34	West Virginia	13	<b>2</b> 7	26	21	22	18	16	15
Dominion of Canada   13   18   17   17   19   20   18   18   18   18   19   20   20   20   20   20   37   35   31   40   41   20   20   20   20   20   20   20   2	Wisconsin	38			37	41	39	36	41
Cuba.         32         26         29         37         35         31         40         41           In Foreign Lands.         14         14         10         20         18         15         24         30           TOTALS         2354         2497         2490         2698         2621         2690         3113         3450           TABLE 2.—MEMBERSHIP IN THIRTY-FIVE CITIES.         1914.         1915.         1916.         1917.         1918.         1919.         1920.         1921.           Los Angeles.         13         8         9         11         12         10         13         11           San Francisco.         36         34         35         36         31         24         20         23           Denver.         34         34         33         33         30         28         29         29           Washington.         34         34         34         35         35         34         39         39		5	2	2	0	0	2	2	4
In Foreign Lands.         14         14         10         20         18         15         24         30           TOTALS         2354         2497         2490         2698         2621         2690         3113         3450           TABLE 2.—MEMBERSHIP IN THIRTY-FIVE CITIES.           1914.         1915.         1916.         1917.         1918.         1919.         1920.         1921.           Los Angeles.         13         8         9         11         12         10         13         11           San Francisco.         36         34         35         36         31         24         20         23           Denver.         34         34         33         33         30         28         29         29           Washington.         34         34         34         35         35         34         39         39	Dominion of Canada	13	18	17	17	19	20	18	18
TOTALS 2354 2497 2490 2698 2621 2690 3113 3450  TABLE 2.—MEMBERSHIP IN THIRTY-FIVE CITIES.  1914. 1915. 1916. 1917. 1918. 1919. 1920. 1921.  Los Angeles 13 8 9 11 12 10 13 11  San Francisco. 36 34 35 36 31 24 20 23  Denver 34 34 34 33 33 30 28 29 29  Washington. 34 34 34 35 35 35 34 39 39		32	26	29		35	31	40	41
Table 2.—Membership in Thirty-five Cities.       1914.     1915.     1916.     1917.     1918.     1919.     1920.     1921.       Los Angeles.     13     8     9     11     12     10     13     11       San Francisco.     36     34     35     36     31     24     20     23       Denver.     34     34     33     33     30     28     29     29       Washington.     34     34     34     35     35     34     39     39	In Foreign Lands	14	14	10	<b>2</b> 0	18	15	24	30
Los Angeles.     1914.     1915.     1916.     1917.     1918.     1919.     1920.     1921.       Los Angeles.     13     8     9     11     12     10     13     11       San Francisco.     36     34     35     36     31     24     20     23       Denver.     34     34     33     33     30     28     29     29       Washington.     34     34     34     35     35     34     39     39								3113	3450
Los Angeles     13     8     9     11     12     10     13     11       San Francisco     36     34     35     36     31     24     20     23       Denver     34     34     33     33     30     28     29     29       Washington     34     34     34     35     35     34     39     39	TAI							46	40
San Francisco.     36     34     35     36     31     24     20     23       Denver.     34     34     33     33     30     28     29     29       Washington.     34     34     34     35     35     34     39     39								_	
Denver									
Washington 34 34 34 35 35 34 39 39									_
			_						
Indianapolis									
	Indianapolis	28	28	31	57	66	58	50	44

Louisville	15	19	17	12	12	12	14	15
New Orleans	21	20	19	23	20	29	32	56
Chicago	119	117	119	119	130	174	176	272
St. Louis	74	92	82	69	69	63	88	95
Kansas City	11	13	11	10	9	10	1.1	12
Baltimore	53	56	56	60	58	52	<b>5</b> 3	57
Boston	39	45	45	42	40	37	34	31
Detroit	35	87	77	79	72	72	74	78
Minneapolis	20	19	20	20	20	29	31	39
St. Paul	13	15	15	16	15	16	17	24
Omaha	12	11	15	14	13	11	12	12
Newark	13	14	15	19	15	17	22	21
Buffalo	15	16	16	15	19	17	15	14
Brooklyn	41	43	46	48	51	61	70	65
New York	106	130	153	205	<b>22</b> 0	221	249	244
Cincinnati	38	36	38	43	42	37	43	41
Cleveland	23	31	35	37	36	34	50	60
Columbus	22	32	29	21	20	17	17	15
Portland (Ore.)	11	9	8	8	7	9	8	8
Philadelphia	112	120	121	129	128	141	159	171
Pittsburgh	34	30	30	30	32	31	34	32
Wilkes-Barre						33	35	18
Manila	32	15	3	3	3	2	3	3
Providence	14	14	12	11	11	9	10	9
Nashville	38	28	22	14	13	11	15	10
Dallas	10	11	6	12	15	18	15	8
Richmond	9	10	9	11	11	15	28	42
Seattle	16	17	18	17	14	11	24	23
Milwaukee	14	16	14	16	20	16	13	15
Начапа		••••	21	27	24	20	25	24
35 Cities	1105	1204	1214	1302	1313	1379	1528	1660

## PHYTOCHEMICAL NOTES.\*

No. 87. Methoxyl Determinations of Monarda Oils.

BY D. C. L. SHERK.I

The investigation of the methoxyl constituents of Monarda oils was undertaken in the hope that this additional constant for the oil would be useful and characteristic, and that, moreover, it might prove an aid in the identification and isolation of new constituents.

Ethers of the hydroxy derivatives of cymene are known to exist in a few oils. The dimethyl ether of hydrothymoquinone constitutes the bulk of arnica root oil, 1,2 and ayapana oil and the oil of Eupatorium capillifolium. The methyl ether of thymol occurs in "Samphire oil" and Pickles claims to have isolated a monomethyl ether of hydrothymoquinone from Cyprus origanum oil which consists principally of carvacrol.

Accordingly Zeisel's method for the determination of the methoxyl value was applied to the oils. The apparatus was essentially that designed by Zeisel' and the procedure was practically the same; except that the gas carrying the vapors of alkyl halide was washed by passing through an alkaline solution of

<sup>\*</sup> From the laboratory of Edward Kremers.

<sup>‡</sup> Fritzsche Brothers Fellow, 1919-1920.