

THE DEPARTMENT OF THE AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

THE TYRANNY OF A STANDARDIZED COURSE OF STUDY.

BY C. B. JORDAN.*

Our courses of study are based upon the assumption that all students "are created free and equal." This assumption is true in legal practice, but any one who has had experience in educational work knows that it is false in the second particular. All students are not created "equal" in mental ability, and the sooner educational institutions recognize this fact and treat them according to their ability, the better for the students and all others concerned.

Our high schools are not turning out a standardized product, and it is well that this is so. If it were true, we would suffer for lack of leadership. The colleges must take this unstandardized crowd and put them through a course of study that will fit them for citizenship and the special professional duties of their state in life. Can this be done with justice to all, if they are all put through the same educational mill? Is it well that all should come from this mill in equal condition of fineness and polish? What are we doing to assist the brighter students to come up to their possibilities? What are we doing to help the duller ones to prepare for a life of usefulness? Does a standardized course of study, based upon the mental ability of the "average" student, best fit all of our graduates for life's work?

In a class of fifty students there are from one to five outstanding mentalities and a similar or even greater number of the under-average. The pace set is based upon the average ability of the class. The outstanding and under-average are victims of this system.

The student of superior ability soon loses interest in work that is repeated several times in order to impress it upon the minds of students of less ability. As a result, the superior student is not inspired to do his best work and usually falls to the class average. If he is of the right sort, he may use his spare time in college activities, such as athletics, journalistic efforts, class offices, etc. These activities usually give him good training and, in a measure, compensate for the lack of inspiration in doing "average" work. Not all, however, are inclined to take up such activities, and these suffer from the "tyranny of the standardized course."

It is the duty of the institution to develop these superior students, for from them come the leaders of the future. How can this best be done? One or two methods suggest themselves to me, and I shall offer them for discussion:

First: These students could be encouraged to carry extra subjects and complete their course in less than the time allotted to it. This method has its difficulties. Schedules cannot be conveniently arranged to make suitable assignments. The sequence of the work often precludes certain assignments and limits the available courses. If the student does complete his course in a shorter period, he may be handicapped by state laws of licensure, which again are based upon the

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assumption that there is an "average" that all pharmacy students may be reduced to.

Second: The institution may establish "honor courses." This plan is not very well developed as yet. It requires especially capable teachers if it is to be successful. I believe it should not be tried unless the institution has excellent facilities and teachers adapted to such courses.

Third: The superior student could, after the freshman year, be induced to take extra courses that do not count toward the degree but that do broaden him and prepare him better for his life's work. In his junior and senior years he could be induced to take up some line of research under the direct supervision of his professors. This latter work would teach him methods of research and open to him the vast field of original work. In pharmacy this field is almost untouched, and the need of research workers is very great indeed. If the superior student had a taste of research work before graduating and were instructed in methods used, it might start him on the road of original work that would benefit humanity as well as his chosen profession. A certain percentage of these students would continue their research, and pharmacy would be the gainer thereby. I am inclined to favor this latter method.

I am convinced that institutions owe a duty to these superior students, and, until they recognize and fulfill this duty, there will continue to be waste from our educational mills. The hard-headed practical man, who did not have the opportunity to attend a college, criticizes the length of time spent in college and the lack of originality among our graduates. There is some basis for this criticism. It would be removed, in part at least, if our colleges inspired the superior student to accomplish all that his capabilities indicated.

What of the students of less than average ability? Should they have special treatment also? If they are assigned the regular load, and especially if the percentage of under-average students is large, the instructor is bound to slacken the pace to one that meets their capabilities, thus doing a grave injustice to the other students. What then can be done to relieve the class of these millstones? The following methods suggest themselves:

First: Divide the class according to the capabilities of the students and accomplish more work with the brighter section in the same length of time. This method has its practical difficulties. If the class is sectioned, it doubles the work of the instructor and may add to the expense by necessitating more instructors. Again, the laws governing pharmacy demand a certain standard of competence, and the slower section might not meet this standard.

Second: Set a pace that will cover the required ground and eliminate the under-average students. This is the method followed in many of our educational institutions. It has its weak points. Many of these under-average students may have good minds that are as yet undeveloped, or they have not yet learned how to apply themselves. Many students who fail in part of their work during the first semester of the freshman year tell me that they have not learned how to study before entering college. Several of these have recovered themselves, have graduated and are a credit to the institution and their community. Of course, there are bound to be some who will never be able to complete the work, but this waste from the educational mill should be very carefully sifted before discarding, or real injury may be done some students and also the profession.

Third: Determine the under-average students as early as possible; lighten their load and have them concentrate upon what remains. This may necessitate a longer period to complete the course, but that is better than ruthlessly eliminating all the under-average, as it gives opportunity to save to pharmacy and to themselves those that are worth saving. The beginning students need the most attention, and their instructors should be the most experienced ones in the institution. If you have a young instructor you wish to turn loose, try him on the experienced students, but save your best for the beginner. The beginners need wise, humane, experienced instructors, or much good material may be lost.

It is necessary to have a standard course of instruction, but, in administering it, attention should be given to the student of under-average ability and to the student of superior ability, or they will be victims of the "Tyranny of a Standardized Course."

THE COMMONWEALTH STUDY OF PHARMACEUTICAL EDUCATION.

BULLETIN NO. 5.

This is the fifth of a series of twelve monthly statements to be issued by the staff conducting this study to acquaint the profession with the progress of the study.

There has been such a general request from both the publishers and readers of previous bulletins, for some of the results of the study rather than methods employed, that it was decided to include in this bulletin some general observations resulting from the survey of retail stores which was conducted last summer.

It was determined early in the study that much of the information needed to complete a report on "what knowledge, skill and ideals a pharmacist should possess" must of necessity come from the retail pharmacist. It was therefore decided to make a survey of one hundred retail stores in each of the following centers and surrounding territories.

Boston, Mass.	Columbus, Ohio	New Orleans, La.
Richmond, Va.	Chicago, Ill.	Norman, Okla.
Philadelphia, Pa.	Minneapolis, Minn.	Los Angeles, Calif.
Pittsburgh, Pa.	St. Louis, Mo.	Seattle, Wash.
Greater New York	Lincoln, Neb.	Salt Lake City, Utah
	Buffalo, N. Y.	

Over 1100 Stores were surveyed for the following information:

1. How frequently and under what conditions the pharmacist is called upon to use some knowledge of toxicology.
2. The extent to which the retail pharmacist is doing his own manufacturing.
3. How many crude drugs are handled in bulk by the present-day pharmacist.
4. How well equipped the average store is to manufacture and compound.
5. How much attention the retailer is paying to U. S. P. and N. F. methods of preservation.
6. How frequently the pharmacist is called upon to render first aid and the conditions treated.

7. How much chemical assaying the pharmacist is doing.
8. How much biological assaying the pharmacist is doing.
9. How many retail stores are equipped to do bacteriological and clinical work.
10. The type of training the pharmacist interviewed has received.
11. With what pharmaceutical organizations he is affiliated.
12. The degree to which he is coöperating in matters pertaining to public health.

The final report when published will give statistical details that cannot be published at this time. General indications as drawn from the summaries submitted by those who actually interviewed the retailers were as follows:

1. The number of times that the pharmacist is called upon to actually treat a case of poisoning is limited. He very frequently uses his knowledge of toxic doses to catch what might have been serious errors in prescriptions.
2. Retailers to-day are doing little manufacturing.
3. The number of crude drugs sold from open packages is decreasing, but the number is still surprisingly large in many of the stores.
4. The average drug store is fairly well equipped to do compounding, but very few are equipped to do much manufacturing.
5. The average pharmacist is paying very little attention to official methods of preservation.
6. Most pharmacists are practicing first aid and believe it should be included in the college curriculum.
7. Retail pharmacists are doing no chemical assaying.
8. Retail pharmacists are doing no biological assaying.
9. A very limited number of retail drug stores are equipped to do bacteriological or clinical work.
10. Of the stores surveyed about one-half were operated by a pharmacist possessing at least a Ph.G. degree or its equivalent.
11. The retail pharmacists are not taking the interest in organization work that they should.
12. In few instances are pharmacists taking their places beside the physician in matters of sanitation and public health.

As can readily be seen much of the above is negative. The final report of the committee will carry practical suggestions as to methods of correcting many of the above conditions which are tending to divorce pharmacy from its proper professional standing.

PLACE OF PREVENTIVE MEDICINE IN CURRICULUM.

And now the whole medical curriculum has been revised with the definite object of permeating the entire period of study by the principle of prevention; every subject, from applied physics, chemistry, biology and anatomy, up to the clinical courses, is to be taught with a

view to the maintenance of health as well as the cure of the disease. The teachers themselves will, perhaps, have to develop a new orientation, and the outdoor department or dispensary will often be a better field for instruction than the hospital ward.—J. C. McVail, *Proc. Roy. Soc. Med.*, 18, 8 (Dec. 1924). Through *Jour. A. M. A.*, Feb. 7, 1925.

THE CONDITIONS OF PHARMACY IN PERU.

Professor Angel Maldonado of the Institute of Pharmacy of the University of Lima, Peru, addressed the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION at its March meeting. After being introduced by Dean H. H. Rusby, Professor Maldonado thanked the members for the courtesies that had been extended to him and to Peruvian pharmacists by those of the United States. He said that Professor Rusby was held in high regard as a scientist and friend in Peru. He extended felicitations of the Peruvian pharmacists and expressed himself favorably relative to Dr. Rusby's idea of establishing branches of the AMERICAN PHARMACEUTICAL ASSOCIATION in South American countries. He was pleased and appreciated fully the opportunity of meeting American pharmacists, and he hoped that the friendship which now existed between this country and those of South America would be strengthened, and coöperatively the medicinal plants of Peru and other countries would be studied even more extensively than up to the present time.

After these preliminary remarks, Professor Maldonado spoke of the conditions of pharmacy in Peru, and abstracts of his address follow:

"Pharmacy is taught at the Institute of Pharmacy of the University of San Marcos at Lima, and the requirements for admission are certificates of five years of successful study in a preliminary school, and five years in advanced studies, followed by a special examination for admission before three members of the faculty. The course of study extends over a period of four years, and the subjects are, among others, physics, botany, microscopy, zoölogy, chemistry in its various branches, bacteriology, galenical pharmacy, materia medica, etc. The candidates must also certify that they have practiced in a pharmacy for at least six months.

"The examinations at the end of the year are given under similar conditions, and for a diploma the candidates must undergo theoretical and practical examinations involving the various subjects of the curriculum. A thesis must also be presented. The title given is that of 'Pharmacist,' and the diploma authorizes the person to practice pharmacy anywhere in Peru.

"A pharmacy in Peru is a place for the preparation and sale of medicines and their manufacture, and these establishments are authorized to sell only medicinal preparations, household remedies, and such items as are necessary in the prevention and alleviation of disease. These pharmacies must keep in stock the items which are designated on an official list. A pharmacist must be in charge at all times. Prescriptions are not returned to the public, and must be kept on file by the pharmacist, and copies of these prescriptions must also be made and preserved in a book for the purpose. The metric system is used, and the French Pharmacopœia is officially recognized.

"By 'drug store,' in Peru, is meant an establishment importing or dealing in drugs, chemicals, etc. They supply the pharmacies, and do not sell directly to the public. There are Chinese herb stores that sell to the Asiatic inhabitants. There are also Peruvian herb stores which supply the demands of the natives.

"Regulations are provided for these various establishments; those for the pharmacies are very strict. The Inspecting Committee of Pharmacies must visit all of these establishments at least once during the year (January) and make a careful examination, and if the examination is satisfactory a report to that effect is

left in the store and placed on record. If the examination is not satisfactory the pharmacist is warned, and in extreme cases the establishment is closed. There are regulations applying to the sale of poisons, and of narcotics, and also of other medicinal preparations.

"In every province or state there is a pharmaceutical society, and the one in Lima is known as 'The Federation of Peruvian Pharmacists' because it represents all the pharmacists of the country. The official publication is *The Pharmaceutical Bulletin*."

"Quite a number of pharmacists," the speaker stated, "are interested in research work, and the desire of Peruvian pharmacists is to advance the profession of pharmacy and improve pharmaceutical education. They expect to establish a department of pharmacy at the University so that pharmacists may qualify for a degree."

In concluding the speaker again thanked the several institutions, laboratories, and pharmacists generally, for the courtesies that had been extended to him.

THE PHARMACIST AS WE KNOW HIM.

The educated pharmacist, as we know him to-day, very probably looks on any such violation (counter-prescribing) of his profession as stultifying and beneath him. His professional associations and his organizations have brought the ethics of pharmacy to the front, and accomplished a splendid work in demonstrating that the practice of pharmacy is indeed a learned and dignified profession, and not merely the pursuit of a business calling. And in exalting the professional and scientific character of pharmacy, the druggist's organizations have not only taught him the deepest respect for his work but shown him that he owed it to himself, and to his standing as a pharmacist, not to encroach on medical practice, or to violate the ethics of the pharmaceutical profession.

Too great praise cannot be given to the admirable code of ethics which has been adopted by the AMERICAN PHARMACEUTICAL ASSOCIATION. No one can read these principles of ethics without recognizing the important place pharmacy occupies to-day in the promotion of human welfare. The promulgation of this code of ethics, and the widespread dissemination among the people of the slogan, "Your druggist is more than a merchant," have accomplished a great deal, not only in establishing the true status of the pharmacist in this country, but in placing pharmacy on a plane of scientific service and efficiency that deserves the hearty approbation of every thinking person.

Especially is this elevation of pharmacy to a higher and better plane a matter of importance to every member of the medical profession, for it means better and truer progress in this scientific selection and preparation of modern remedies in the treatment of disease. A pharmacist who is true to his calling, and alive to its scientific opportunities, is worthy of every consideration. He deserves the hearty commendation, support and coöperation of every practitioner of medicine and of the community, for he is playing a leading part, both in our present-day conflict with disease, and in the advancement of human health and well-being.—Editorial, *American Medicine*, February, 1925.

INVESTIGATION OF INTERNAL REVENUE AND PROHIBITION SERVICES.

The investigation of the internal revenue and prohibition services by the special committee headed by Senator Couzens of Michigan is to continue after the end of this Congress

under a resolution recommended by the Senate finance committee. The extension of the life of the committee, however, would involve stoppage of its investigatory work June 1, 1925, after which the committee would prepare its report to the next Congress.

REPORT OF THE SECRETARY OF THE SECTION ON EDUCATION AND LEGISLATION.*

BY WILLIAM MANSFIELD.

The report of the Secretary of the Section on Education and Legislation is statistical as shown by the data received in answer to the questionnaires sent to the Conference Schools and the State Boards of Pharmacy.

One is greatly hampered in this work, however, by a failure of the Boards and the Schools to send their replies promptly or, as will be shown by the report, not to send them at all. Your Secretary found it necessary, in many instances, to send two letters and two sets of questionnaires, and finally telegrams, in order to secure the necessary data.

THE QUESTIONNAIRE DIRECTED TO CONFERENCE SCHOOLS OF PHARMACY.

- A—Correct name and address of school.
- B—Number of students admitted to first year class (freshmen).
- C—Number of students admitted to second year class (sophomores).
- D—Number of students admitted to third year class (juniors).
- E—Number of students admitted to fourth year class (seniors).
- F—Number of students admitted to the graduate school candidates for the Master's or Doctorate degree. M.S.....Ph.D.....
- G—Number of other students admitted. H—Total number of students admitted.
- I—Number of students rejected for poor scholarship or misconduct. 1st year.....
2nd year.....3rd year.....4th year.....
- J—Number of high school graduates in first year class.....2nd year.....3rd year.....
4th year.....Total.....
- K—Number admitted on high school certificates only.
- L—Number admitted on state certificates only.
- M—Number admitted on both high school and state certificates.
- N—Number admitted on examination.
- O—By whom examined.
- P—Educational requirements for admission to course.
- Q—Number graduated this year with the degree of Ph.G.
- R—Number graduated this year with the degree of Ph.C.
- S—Number graduated this year with the degree of B.S.
- T—Number graduated this year with other degrees, specifying the degrees.

THE QUESTIONNAIRE ADDRESSED TO THE STATE BOARDS OF PHARMACY.

- A—Name of state.
- B—Number examined for pharmacist for year including June to June if possible.
- C—Number examined for assistant pharmacist for year.
- D—Total number examined for year. E—Of the above pharmacists passed.
- F—Of the above assistant pharmacists passed.
- G—Total number passed for the year.
- H—Number from within state registered without examination. (State if upon diploma or how, omitting reciprocal registration.)
- I—Number registered by reciprocity. J—Is N. A. B. P. plan followed?
- K—New laws affecting pharmacy since last report (1923).
- L—Board's rulings raising educational requirements in addition to, or in place of, above laws.
- M—Unsuccessful attempts to raise educational requirements.
- N—Unsuccessful because of lack of support of: 1. Schools. 2. Druggists. 3. Legislature. 4. Pharmacy boards.
- O—Does your board favor a plan for the discontinuance of licensing assistant pharmacists?

* For report of the minutes of the Section see pp. 1151-1158, December JOURNAL A. PH. A., 1924.

CHARTED RESPONSES FROM SCHOOLS OF PHARMACY.

A.	B.	C.	D.	E.
1 Ala. Polytech. Inst., Dept. of Pharmacy.....	31	23	8	5
2 U. of Calif., College of Pharmacy.....	..	..	..	..
3 U. of So. Calif., College of Pharmacy.....	125	90	5	8
4 U. of Col., College of Pharmacy.....	15	15	6	5
5 George Washington U., Nat. College of Pharmacy.....	15	8	7	1
6 U. of Ill., School of Pharmacy.....	229	155	0	0
7 U. of Notre Dame, School of Pharmacy.....	14	6	1	2
8 Purdue U., School of Pharmacy.....	64	33	6	5
9 Valparaiso U., School of Pharmacy.....	23	54	3	5
10 Des Moines U., College of Pharmacy.....	61	0	0	0
11 State U. of Iowa, College of Pharmacy.....	70	57	5	4
12 U. of Kansas, School of Pharmacy.....	42	36	10	3
13 Louisville College of Pharmacy.....	49	95	0	0
14 Loyola U. New Orleans, College of Pharmacy.....	..	..	..	..
15 Tulane U. of La., School of Pharmacy.....	..	..	..	..
16 U. of Maryland, Dept. of Pharmacy.....	101	74	3	..
17 Mass. College of Pharmacy.....	173	135	103	16
18 U. of Michigan, College of Pharmacy.....	29	24	8	16
19 Detroit Inst. of Tech., College of Pharmacy and Chemistry.....	..	..	..	..
20 U. of Minn., College of Pharmacy.....	62	55	23	2
21 U. of Miss., Dept. of Pharmacy.....	51	36	..	1
22 St. Louis College of Pharmacy.....	120	76	..	..
23 U. of Mont., School of Pharmacy.....	28	12	6	4
24 U. of Nebraska, College of Pharmacy.....	74	45	10	7
25 Creighton U., College of Pharmacy.....	80	48	4	0
26 New Jersey College of Pharmacy.....	140	128	..	..
27 Brooklyn College of Pharmacy.....	266	237	0	0
28 U. of Buffalo, College of Pharmacy.....	135	0	0	126
29 Columbia U., College of Pharmacy, City of N. Y.....	454	294	9	2
30 Fordham U., College of Pharmacy.....	300	285	2	..
31 Union U., Albany College of Pharmacy.....	144	111	3	..
32 U. of No. Carolina, School of Pharmacy.....	56	43	2	0
33 N. Dak. Agricultural College, School of Pharmacy.....	26	17	4	1
34 Western Reserve University, Cleveland School of Pharmacy.....	66	55	13	3
35 Ohio State U., College of Pharmacy.....	136	6	0	0
36 U. of Okla., School of Pharmacy.....	..	..	..	..
37 No. Pac. College, School of Pharmacy.....	18	21	3	0
38 Ore. Agric. College, School of Pharmacy.....	57	36	43	13
39 U. of Pittsburgh, Pittsburgh College of Pharmacy.....	188	..	..	184
40 Phila. College of Pharmacy and Science.....	347	307	41	9
41 U. of the Philippines, School of Pharmacy.....	..	..	..	..
42 Med. Col. of State of So. Car., School of Pharmacy.....	..	..	20	24
43 S. Dak. State Col. of Agric. and Mech. Arts, Dept. of Pharmacy.....	38	21	3	5
44 Meharry Pharmaceutical College (Colored).....	..	..	..	..
45 U. of Tenn., School of Pharmacy.....	25	18	..	..
46 Baylor University, School of Pharmacy.....	48	18	..	..
47 Med. College of Va., School of Pharmacy.....	63	29	0	0
48 State Col. of Washington, School of Pharmacy.....	80	48	16	10
49 U. of Washington, College of Pharmacy.....	45	45	34	12
50 U. of W. Va., Med. School, Dept. of Pharmacy.....	..	..	..	..
51 U. of Wisconsin, Course in Pharmacy.....	55	30	11	12

Total

4143 2626 418 481

CHARTED RESPONSES FROM SCHOOLS OF PHARMACY.

A.	F.	G.	H.	I.	J.	K.	L.	M.	N.	O.	P.	Q.	R.	S.	T.	
1	0	1	68	7	31	31	..	..	..	..	4 yr.	3	1	5	..	
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	..	3	231	9	213	223	0	..	..	..	4 yr.	80	3	8	..	
4	1	2	44	5	44	42	0	0	0	..	4 yr.	0	4	5	0	
5	..	..	31	1	31	..	..	..	..	..	15U.	..	..	..	..
6	0	1	384	64	384	384	0	384	0	..	4 yr.	126	0	0	0	
7	..	1	24	..	22	22	..	22	..	..	15U.	3	..	1	..	
8	2	0	110	6	108	108	0	0	0	..	4 yr.	29	0	5	..	
9	..	5	90	2	84	79	5	..	0	..	4 yr.	43	0	3	..	
10	..	9	70	6	77	66	..	..	..	..	4 yr.	17	1	1	..	
11	..	0	136	7	134	134	0	..	..	..	4 yr.	33	2	3	..	
12	..	..	91	6	87	87	0	0	0	0	4 yr.	12	6	3	..	
13	0	1	145	0	81	144	0	0	1	..	4 yr.	88	0	0	0	
14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	1	9	188	28	178	145	33	..	..	..	4 yr.	63	1	..	1	M. S.
17	..	..	427	..	368	..	..	..	40	..	4 yr.	78	8	..	..
18	5	2	79	7	79	79	..	..	..	..	4 yr.	..	12	5	..	
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	1	3	143	..	140	140	3	0	0	..	4 yr.	0	13	3	..	
21	..	..	88	10	88	88	..	..	..	..	4 yr.	29	..	1	..	
22	..	..	196	42	172	172	..	172	..	..	..	33	..	..	23	Ph. B.
23	0	0	50	6	22	..	..	..	..	..	15U.	10	3	2	..	
24	3	0	136	2	136	136	0	0	0	0	4 yr.	21	7	4	2	M. A., A.M.
25	0	0	132	13	80	80	..	..	..	..	30C.	34	4	0	0	
26	..	..	268	8	100	..	268	..	..	..	4 yr.	95	..	..	..
27	0	0	503	3	159	0	503	503	..	..	3 yr.	203	0	0	0	
28	0	0	261	57	157	0	261	0	0	0	3 yr.	98	5	0	0	
29	..	71	827	10	759	0	0	448	6	..	4 yr.	239	8	0	0	
30	..	..	587	32	..	231	..	..	..	..	3 yr.	241	2	..	..
31	..	2	260	..	163	229	31	229	31	..	3 yr.	111	3	..	..
32	0	5	106	12	94	0	0	101	0	0	4 yr.	49	2	0	2	P.D. Doctor of Pharmacy
33	0	3	51	0	51	49	2	0	0	0	4 yr.	11	2	1	0	
34	..	1	138	11	134	0	0	134	6	..	4 yr.	32	3	3	0	
35	1	0	143	8	306	143	0	143	0	..	4 yr.	85	..	2	..	
36	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
37	..	5	47	0	25	..	4	47	..	..	15U.	..	1	1	..	
38	0	11	160	5	149	149	0	0	0	..	15U.	13	13	5	0	
39	9	3	384	27	372	..	384	..	..	..	4 yr.	128	3	4	21	Certificates
40	..	41	745	89	745	..	..	..	..	..	4 yr.	248	2	5	7	See data
41	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
42	0	0	44	3	41	41	0	0	0	..	15U.	23	0	0	..	
43	1	0	68	6	38	38	0	38	0	..	4 yr.	19	5	5	..	
44	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
45	..	..	43	13	43	..	..	..	..	..	15U.	10	..	..	..
46	..	..	66	7	56	56	..	..	..	..	15U.	15	..	..	..
47	0	3	95	..	..	..	..	..	..	..	4 yr.	21	0	0	..	
48	1	2	157	..	..	..	..	..	..	..	4 yr.	30	4	3	..	
49	9	..	136	4	136	136	..	..	..	..	4 yr.	1	23	12	2	M. S.
50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
51	10	1	119	9	106	..	..	..	2	..	4 yr.	12	..	10	6	M. S.
<hr/>																
44	185	8071	525	6193	3234	1494	2221	86	0			2386	141	100	64	Total

CHARTED RESPONSES FROM BOARDS OF PHARMACY.

No.	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.
1	Alabama.....	139								
3	Arizona.....	51	18	69	27	14	41		6	Yes
4	Arkansas.....	315	104	315	104	0	104		5	Yes
6	Colorado.....	93	11	104	32	6	38	3	32	Yes
7	Connecticut.....	117	191	308	36	52	88		9	Yes
9	Delaware.....	17	16	33	8	11	19		3	Yes
10	District of Columbia....	97	0	97	30		30		26	Yes
11	Florida.....						13	3 ¹	75	Yes
12	Georgia.....	305	0	305	146	0	146	0	10	Yes
14	Idaho.....	25	0	25	11		11		7	Yes
16	Indiana.....	202	121	323	99	87	186		26	V.C.
17	Iowa.....	140		140	53		53		12	Yes
18	Kansas.....	282	11	293	73	5	78		15	Yes
19	Kentucky.....	212	29	241	53	63	116		16	Yes
20	Louisiana.....	202	20	222	126	16	142	0	32	Yes
22	Maryland.....	101	73	174	72	63	135		18	Yes
23	Massachusetts.....	460	172	632	71	56	127		23	Yes
24	Michigan.....	425	148	573	159	88	247		54	Yes
25	Minnesota.....	174	146	320	50	63	113		20	Yes
27	Missouri.....	208	315	523	162	162	324	37	57	Yes
29	Nebraska.....	126			107				16	Yes
31	New Hampshire.....	84	3	87	48	3	51		10	Yes
32	New Jersey.....	367	312	679	115	119	234		49	No
34	New York ²	613	221	834	411	139	550	0	0	No*
35	North Carolina.....	35	1	36	20	1	25			Yes
36	North Dakota.....	13	5	18	13	3	21		2	Yes
37	Ohio.....	216	179	395	142	145	287		31	Yes
39	Oregon.....	97	7	104	81	5	86		24	Yes
40	Pennsylvania.....	595	829	1424	426	434	960		10	Yes
43	Rhode Island.....	131	131	131	64	64	64			
44	South Carolina.....	45		45	29		29	47	9	Yes
45	South Dakota.....	35	23	58	21	23	49	0	5	Yes
49	Vermont.....	37	37	37	12	10			3	Yes
50	Virginia.....	76	37	113	45	16	61		13	Yes
52	West Virginia.....	35	4	39	28	3	31	4	22	Yes
53	Wisconsin.....			275	69	90	159		13	Yes
54	Wyoming.....	60			40		40		5	Yes
Total		6128	3161	8972	2983	1741	4658	94	644	

Note.—Numbers are left in regular order but no reports were received from the following states: 2, Alaska; 5, California; 8, Cuba; 13, Hawaii; 15, Illinois; 21, Maine; 26, Mississippi; 28, Montana; 30, Nevada; 33, New Mexico; 38, Oklahoma; 41, Philippines; 42, Porto Rico; 46, Tennessee; 47, Texas; 48, Utah; 51, Washington.—They are omitted from above list.

¹ Registered on medical license. ² In addition New York examined 711 Junior Pharmacists and passed 469.

Data applying to preceding tabulations of the Schools of Pharmacy:

1. Four years high school or 15 Carnegie units required for entrance.
2. No state certificates granted in California.
3. Four years of high school work or 15 units required for entrance.
4. Fifteen units required for entrance to course.
5. One special student.
6. One irregular student.
7. High school graduation required for entrance.
8. Four years high school or 15 units required for graduation; 3 English units; 1 Mathematics; 1 Science.
9. Nine special students were admitted. High school graduation required for entrance.
10. Have two Federal Board students, not high school graduates; have only certificates, do not have the state certificate.
11. High school graduation required for entrance.
12. W. F. Bradbury, Louisville High School Faculty examiner when examinations are taken.
13. Registrar of University of Maryland evaluates all credentials.
14. High school graduation or its equivalent 75 counts required for graduation.
15. At the end of the Summer Session 1923, 4 Ph.C. degrees and 2 B.S. degrees were granted which were not included in last year's report.
16. Three "War Specials" were admitted.
17. High school graduation required for entrance to course.
18. Graduation from a high school accredited with the University of the state, or an equivalent education determined by a University, State Superintendent of Public Schools or other similar authority—we do not have an examination for the equivalent. Sixteen freshmen and eight seniors were special students and not candidates for a degree and admitted without certificates.
19. State certificates are not used in this state.
20. Thirty credits required for entrance.
21. All new students admitted for session 1923-24 are high school graduates or have the equivalent. Those who were left over from the previous year did not have to be graduates, as the entrance requirements for 1922-23 were only two years of high school work.
22. All students must have a pharmacy student qualifying certificate issued by the University of the State of New York.
23. Three years of high school work required for entrance.
24. There were three special students and sixty-eight evening classes.
25. All high school graduates are required to have state certificates.
26. There were thirty-one examined by the State Education Department, admitted on examination.
27. The three students (besides the one auditor) who were not high school graduates were entered under the old law on their age and experience, when high school graduation was not required.
28. High school graduation required for entrance.
29. There were five special students admitted.
30. Of these eleven special students, none of whom are candidates for any degree: two are college graduates, doing special work in pharmacy; four are Federal Board Rehabilitation men; five are nurses, pursuing a training course in a local hospital, and are registered in the School of Pharmacy for special instruction.
31. Twenty-one certificates were granted.
32. There were 7 Bachelor in Pharmacy degrees; 5 Technical Chemistry degrees and 30 qualified for certificates of proficiency in special branches granted.
33. Note that during the sessions 1922-23 and 1923-24 that we required 15 units for entrance. However, three men came back, who were left-overs from the year before. At that time only three years of high school was required. We give only one course and this is the two-year course leading to the degree of Graduate in Pharmacy.
34. Four years of high school required for entrance.

35. Fifteen Carnegie units required for entrance.
36. Fifteen units required for entrance.
37. Of the sixty-three of the first year class, a large number that did not have four years of high school work could not be matriculated; of the sixty-three who matriculated in the freshman class, only about one-third are now qualified to enter the senior class; about twelve are attending summer school to make up the deficiencies. Twenty-one out of a class of twenty-nine graduated.
38. High school graduation is required for entrance.
39. Two M.S. degrees were granted.
40. One fourth year student rejected for dishonesty in student work; eight rejected for poor scholarship. Two students, not graduates of accredited schools, admitted upon passing the regular entrance examinations of the University. Regular entrance requirements of the University—graduation from an accredited school or examination at the University. Entrance to the Course in Pharmacy differs in no respect from that to other courses of the University. Three more (making twelve in all) will receive the degree Ph.G. at the close of the summer session. Two more (making ten in all) will receive the degree B.S. Pharmacy course, at the close of the summer session. Six will receive the degree M.S. at the close of the summer session.

Data applying to preceding tabulations of the Boards of Pharmacy.

1. K, in 1927 all applicants must be graduates of Class A Colleges of Pharmacy, and have four years of high school training—Board ruling; M, none; O, law goes into effect January 1, 1927.
4. K, the board may prescribe the education and experience qualifications effective—1925; M, impossible because of prerequisite law; N, unsuccessful because of violent opposition of legislature; O, impossible for us to decide until the minimum three-year course is adopted.
6. K, none; L, none—requirements are fixed by law; M, tried at legislative session of 1923 to secure college of pharmacy graduation prerequisite, carrying high school graduation as preliminary to matriculation, but failed; N, to some extent because of lack of support from all the interests named, but chiefly because of unusual conditions in the legislature, by reason of which our measures were never reported out of committee, so never had a chance; O, no, we do not favor the abolishment of the assistant grade, but feel rather that there should be a permanent class of that character.
7. K, none—Legislature meets every two years, January 1, 1925; L, 1925 College requirement; O, no.
9. K, none—an effort will be made to pass a prerequisite law at next meeting of the Legislature; L, One year high school—July 1, 1924; M, none; O, no.
10. K, none; M, bill presented to Congress provided for graduation as a prerequisite; N, unsuccessful because of lack of support of Congress.
11. K, none; L, two years' High School, four years' practical experience.
12. K, require two years of High School; O, yes.
14. K, none; L, no change; M, bill requiring graduation in conformity with N. A. B. P.—recommendations lost in last session of Legislature; N, lost on account of opposition of Lieutenant-Governor; O, yes.
16. K, none; L, none; M, none; O, yes.
17. K, none; L, none; M, none; N, none.
18. K, none; L, none; M, none; N, nothing requested; O, no.
19. K, none; L, College of Pharmacy graduation now required; O, no.
20. K, overlapping terms of Board Members effective at once, prerequisite effective January 1, 1927; L, none; O, no.
21. Maine; K, none; L, none; M, none; O, yes.
22. K, on account of 1924 Legislature places the enforcement of pharmacy laws with the State Board of Health under the direction of a Deputy Drug Commissioner.
23. K, citizenship required of applicants for registration as pharmacist or assistant—minor changes in narcotic, liquor, and hypodermic instrument laws; L, none; M, tried to have law requiring College of Pharmacy graduation; N, unsuccessful because of lack of support of druggists and of the Legislature; O, no plan would work which did not repeal the existing law—doubtful if same could be repealed.
24. K, passed Act 85 P. A. 1923—venders' licenses—law creating a director—all laws

regulating the manufacture and sale of drugs are enforced by Board of Pharmacy; L, Michigan Board of Pharmacy has no authority to make rules raising educational requirements; M, no; O, absolutely not.

25. K, none; L, none; M, none; O, has not been discussed.

27. K, four years of high school; L, four years of high school; M, requiring college graduation defeated by the Legislature; N, unsuccessful because of non-support by druggists; O, no.

28. Montana; K, none; L, completion of eighth grade—1 year of college—3 years of practical experience.

29. K, no new laws.

31. K, none; L, none; M, none; O, of little practical value in the opinion of the writer.

32. L, Board has adopted a resolution requiring that, in order to receive recognition as an approved college or school of pharmacy, every such institution must, on and after September 1, 1925, provide that its minimum course of instruction shall be three years covering 2250 hours of instruction and a degree for the course shall be that of a "Graduate in Pharmacy"—the course shall consist of not less than 40 per cent instructions and lectures and recitations and not less than 40 per cent of laboratory work; O, yes, unless the standards for registration of Assistant Pharmacists are raised so as to be in harmony with the advanced standards required for registration of Pharmacists.

34. K, in 1923 law was amended requiring that the owners of registered pharmacies and drug stores shall be licensed pharmacists or druggists—in 1924 law was amended, not permitting the use of the words "pharmacy or drug store" except by a registered pharmacy or drug store—an applicant who has not had the requirements for admission to the examination for pharmacist or junior pharmacist, and is a graduate of a registered school of pharmacy, may take the examination in the theoretical subjects only—after January 1, 1926 no junior pharmacist license may be issued—candidates must be a resident of the United States, or have filed an application to become such; L, after January 1, 1928 three years in a registered school of pharmacy required—after January 1, 1925 must have four years of high school or equivalent—after January 1, 1928 necessary to have two years practical experience in a registered pharmacy or drug store before entering a pharmacy school; M, none; O, yes.

35. K, none; L, we have the graduation requirements in the state; O, no.

36. K, none; L, none; M, none; O, no.

37. K, amendment to law requiring fees for registration increased; L, none; M, none; O, yes.

39. O, have not considered it.

40. K, reported in 1923—Legislature convened in 1922—passed Administration Code, placing Board of Pharmacy under "Department of Public Instruction—term changed from five to six years; fees from \$10 to \$15; L, Board has ruled for three-year course leading to Ph.G. degree beginning course 1925; O, no.

43. K, no change; L, no change; M, the R. I. College of Pharmacy requires two years of high school for entrance; O, no.

44. K, none; L, none; M, none; N, none.

45. L, four years' High School and two years' pharmacy.

49. K, none except the biennial fee raised from two to four dollars; O, no.

50. K, the Penalty Bill and the Smith Pharmacy Bill; L, by Board ruling two years of high school work, instead of one, required of applicants for Assistant examination; M, none; N, received fine support from all of these groups on our legislative program; O, have about come to the conclusion that this grade ought to be abolished. Had a bill in our last Legislature to accomplish this but had to kill it because it carried a provision to automatically register as pharmacists all present assistants.

52. K, none; L, requirement of graduation from a college of pharmacy giving two-year course; M, none; O, yes.

53. K, none; L, approved model pharmacy law with modification; M, lost legislation from 2 years' to 4 years' high school requirements; N, unsuccessful because of lack of support of druggists and of Legislature; O, no.

54. K, none; L, high school graduation, four years' experience; M, unsuccessful because of lack of support of druggists and Legislature; O, yes.