

Sodii Glycerophosphas, 0.3 Gm. (5 grains)	Syrupus Zingiberis, 10 cc. (2 1/2 fluidrachms)
Sodii Iodidum, 0.3 Gm. (5 grains), Antiluetic 2 Gm. (30 grains)	Thymol, 0.125 Gm. (2 grains), Anthelmintic 2 Gm. (30 grains) divided into 3 doses
Spiritus Anisi, 1 Gm. (15 grains)	Thyroideum Siccum, 0.06 Gm. (1 grain)
Spiritus Juniperi, 1 cc	Tinctura Aconiti, 0.6 cc (10 minims)
Spiritus Menthae Piperitae, 1 cc (15 minims)	Tinctura Belladonnae, 0.6 cc (10 minims)
Spiritus Menthae Viridis, 1 cc (15 minims)	Tinctura Cannabis, 1 cc (15 minims)
Stramonium, 0.75 Gm. (12 grains)	Tinctura Digitalis, 1 cc (15 minims)
Strophanthinum, Daily mouth or vein 0.0005 Gm. (1/120 grain)	Tinctura Ferri Chloridi, 0.7 cc (10 minims)
Strychnina, 0.002 Gm. (1/30 grain)	Tinctura Gelsemii, 0.3 cc (5 minims)
Strychninae Nitras, 0.002 Gm. (1/30 grain)	Tinctura Myrrhae, 2 cc (30 minims)
Strychninae Sulphas, 0.002 Gm. (1/30 grain)	Tinctura Nucis Vomicae, 1 cc (15 minims)
Syrupus Ipecacuanhae, 0.75 cc (12 minims), Emetic 15 cc. (4 fluidrachms)	Tinctura Opii, 0.6 cc (10 minims)
Syrupus Picis Liquidae, 10 cc (2 1/2 fluidrachms)	Tinctura Opii Deodorati, 0.6 cc (10 minims)
Syrupus Pruni Virginianae, 10 cc (2 1/2 fluidrachms)	Tinctura Stramonii, 0.75 cc (10 minims)
Syrupus Sennae, 8 cc. (2 fluidrachms)	Tinctura Veratri Viridis, 1 cc (15 minims)
Syrupus Tolutanus, 10 cc (2 1/2 fluidrachms)	Valeriana, 0.75 Gm. (12 grains)
	Veratrum Viride, 0.1 Gm. (1 1/2 grains)
	Zingiber, 0.5 Gm. (8 grains)

## THE ALCOHOLIC STRENGTH OF NATIONAL FORMULARY PREPARATIONS.

BY WILBUR L. SCOVILLE.

The next edition of the NATIONAL FORMULARY will state the alcoholic strengths of the various N. F. preparations used internally. Since the alcoholic content of drug percolates will vary even when the same menstruum is used, owing to variations in the moisture and soluble constituents of the drugs, it is only by a considerable series of experiments that an average or standard alcoholic content of any fluidextract or tincture can be known. The NATIONAL FORMULARY Committee has therefore appealed to the drug manufacturers for data on which to base the alcohol standards. More than forty manufacturers were asked to furnish a statement of the alcoholic strengths of 67 listed elixirs, 83 fluidextracts, 9 solutions and 42 tinctures—all NATIONAL FORMULARY products or new additions to the Formulary. This list of over 200 preparations calls for considerable work in looking up records and checking up processes, since the request specified that data were wanted on preparations made according to the N. F. formulas only. And it is evident that the manufacturers are quite willing to aid the N. F. even at a material cost to themselves when replies giving the data requested were received from twenty manufacturers including most of the largest pharmaceutical manufacturers—and from others who stated that their list of N. F. products was too small to be of any real service.

The NATIONAL FORMULARY Committee wishes to acknowledge with thanks the cordial coöperation of the manufacturers in this work of revision.

The data thus collected are summarized in the following tables. It will be noted that but a few of the preparations listed are made by all the manufacturers, and some are made by only one or two. In many instances, particularly the elixirs, the N. F. formulas are replaced by private formulas, which differ mostly

in the menstrua and flavors or color used, and hence in the alcoholic strength. This will account for some wide variations in the elixirs—the standards in medicinal activity being the same as, or very close to, the N. F. standards, but the alcoholic strength and flavor vary.

Another cause of variation lies in the fact that while most of the large manufacturers state the actual alcoholic content of their preparations on the label—within an allowable variation—some give simply a minimum and others a maximum strength. The figures therefore show the extremes as stated and suggest a wider variation than actually occurs.

The averages stated in the table are not, except in a few cases, the numerical average of all the figures, but are the figures nearest to that reported by a majority of the manufacturers. For instance, six reports on Elixir of Ammonium Bromide gave the figures 20%, 7%, 16%, 7%, 7% and 23%. Since it is obvious that the same formula is not followed in all of these and three of the six reported 7%, which is close to the calculated strength by the N. F. formula, the average is given as 7% rather than 80 divided by 6 which equals 13%.

When the figures varied so much that a majority average was not evident the calculated average is given. A striking illustration of the variations sometimes shown is exhibited in the report on Fluidextract of Lupulin. Eleven manufacturers give the following figures on this, *viz.*: 52%, 53%, 57%, 60%, 60%, 65%, 68%, 75%, 80%, 85% and 87%—a range of 52% to 87%! Since alcohol is the official menstruum for this preparation and is probably used in all of the above (for I can say that a high-grade lupulin yields so much soluble extractive to alcohol that the fluidextract content will be reduced to as low as 52% without water), the differences in strength are doubtless due to variations in the quality of lupulin used. This illustrates the difficulty of establishing a fair alcoholic standard on preparations of variable drugs.

In giving the number of manufacturers who reported the stated average, a variation of 1% in alcohol is usually included. For instance, if the average is 40%, all who reported 39%, 40% or 41% are included as reporting the average. Any greater variation than 1% of alcohol is not included.

It is also plain that if the NATIONAL FORMULARY establishes an alcoholic standard for preparations some allowance for variations should be permitted. The U. S. Pharmacopoeia IX gives the alcoholic standard on 76 of its preparations, mostly spirits and tinctures, and permits a variation of 10% more or 10% less from the figures given. But a 10% allowance on an 8% standard is only 0.8% each way, while a 10% allowance on a 90% standard is 9% each way, or an extreme variation in one case of 1.6% and of 18% of alcohol in the other case. Therefore some manufacturers think that a sliding allowance should be made, and the following scales are advocated:

“A” proposes an allowance of 4% for 90% strengths, 5% for 75% strengths, 6% for 60% strengths, 8% for 40% strengths and 10% for 25% strengths or under. For fluidextracts he advocates a 10% allowance for all strengths.

“B” allows the following deviations from the figures reported:

50% or more,	deviation allowed	10%	of the alcohol.		
20% to 50%,	“	“	15%	“	“
10% to 20%,	“	“	20%	“	“
1% to 10%,	“	“	25%	“	“

"C" writes that an allowance of 10% either way is made in practice, but that "sometimes this is too great an allowance and sometimes not enough."

"D" writes that their usual allowance is 5%, but it is sometimes stretched to 10%. Most of the others state that an allowance of 10% is made on the figures given.

Since the variations in alcoholic strength are due mainly to differences in amount of extractive in the different lots of drug used, it is plain that an allowance of 10% in a tincture is more liberal than 10% in a fluidextract, regardless of the alcoholic strength, because tinctures usually represent only one-twentieth to one-fifth as much extractive as the corresponding fluidextracts. Hence the character of the preparation should be considered as well as the alcoholic strength. But it also seems reasonable that a greater percentage variation should be allowed on weakly alcoholic preparations than on strongly alcoholic ones.

One manufacturer of the highest ethical standing, whose name is universally respected, writes the following frank protest against rigid alcoholic standards, which merits attention:

*Re Alcohol Content of Fluidextracts.*

"I wish to give formal expression to my objection to hard and fast exact standards for alcohol percentages of fluidextracts, official or not.

"There never was any sense in requiring that labels of these products should bear a statement of their alcohol content, but one need not hark back to that grievance.

"The requirement exists. Each manufacturer is responsible for the truth of his declaration on the label. For the official fluidextracts formulas are given with detailed instructions which do not provide for standardizing of the alcohol content. The instructions, however, leave room for considerable variations in the finished product.

"The only rational plan, it seems to me, is for each manufacturer to follow the official instructions and ascertain experimentally the average alcoholic strength of each fluidextract, and label them accordingly, with the general understanding that a margin of ten percent above or below the stated strength is to be tolerated in this class of products.

"The refinement of fixing an absolute standard to which each fluid is to be adjusted within a very narrow range is not required by the regulations provided and adds needlessly to the cost of production, while it may affect injuriously the quality of the product. It has never occurred to us to make such a fetish of standardization. It is easy to see that nothing whatever is gained thereby even if by agreement the several manufacturers agree to adopt arbitrarily exact standards.

"Theoretically, the law was made to guard against danger of intoxication from these concentrated medicaments.

"I shall certainly continue, as heretofore, to oppose the fixing by law of unnecessary hard and fast standards of this sort. They may serve perhaps to divert attention from wholesale evasions and actual violations of our prohibition laws."

The problem of establishing alcoholic standards is therefore not an easy one. The NATIONAL FORMULARY certainly does not aim to establish arduous or unfair, or even needlessly troublesome, standards. Its whole aim is to safeguard the honest and reputable preparation. Hence further suggestions or criticisms on this subject will be welcomed and sincerely considered.

Following are the data thus far received with a suggested standard for each preparation listed.

The revision of the elixirs is only partially completed and changes in alcoholic strength are contemplated on some, hence the suggested standards are incomplete.

The following changes in menstrua for fluidextracts have been tentatively adopted which accounts for the apparent discrepancies in the suggested N. F. standards for these fluidextracts.

*Fluidextract Angelica Root*—from 95% alcohol to five volumes of alcohol and one of water.

*Fluidextract Apocynum*—from one of glycerin, six of alcohol and three of water to three of alcohol and two of water (glycerin eliminated).

*Fluidextract Buchu Comp.*—from two of alcohol and one of water to four of alcohol and one of water.

*Fluidextract Calendula*—from 95% alcohol to two of alcohol and one of water.

*Fluidextract Dioscorea*—from four of alcohol and one of water to diluted alcohol.

*Fluidextract Euonymus*—from four of alcohol and one of water to diluted alcohol.

*Fluidextract Juniper*—from diluted alcohol to four of alcohol and one of water.

*Fluidextract Leptandra*—from diluted alcohol to three of alcohol and one of water.

*Fluidextract Mezereum*—from four of alcohol and one of water to two of alcohol and one of water. (The wisdom of this change is questioned. W. L. S.)

*Fluidextract Sanguinaria*—from citric acid to hydrochloric acid.

*Fluidextract Stillingia Comp.*—from one of glycerin, two of alcohol and one of water to diluted alcohol.

*Fluidextract Stramonium*—from two of alcohol and one of water to four of alcohol and one of water.

These changes necessitate new alcoholic standards for the fluidextracts. The danger of standardizing by calculation, on the basis of the old data, is recognized, for a change in menstruum means a change in extractive which influences the alcoholic strength, and this change cannot be calculated. Yet the opportunity of making and examining samples is very meager. Perhaps the best method of handling these standards is to allow of a larger variation in each case until sufficient data can be gathered to warrant the standards to be finally adopted.

Further data or suggestions on this subject will be welcomed by the Committee.

#### TABULATED REPORTS OF ALCOHOLIC STRENGTH NATIONAL FORMULARY PREPARATIONS AND SUGGESTION FOR N. F. STANDARD.

Preparation.	Number reporting.	Lowest percent- age.	Highest percent- age.	Average percent- age.	Number below average.	Number above average.	Number re- ported N. F. standard.	Sug- gested N. F. standard.
Elix. Ammon. Brom.....	6	7	23	7	0	3	3	7
" Ammon. Valer.....	8	17	24	22	4	1	3	21
" Aletris Co.....	7	15	25	21	2	1	4	..
" Amygdal. Co.....	3	4	5	5	1	0	2	4
" Anise.....	4	22	24	23	1	1	2	5
" Antiasthmat.....	8	15	25	19	1	2	5	18
" Arom. Rub.....	5	11	24	22	2	1	2	22
" Aurant. Amar.....	4	29	32	29	0	1	3	28
" Bismuth.....	6	10	18	12	2	1	3	12
" Buchu.....	6	30	40	34	2	1	3	34
" Buchu Co.....	7	28	32	30	1	1	5	30
" Buchu Junip. et Pot. Acet....	5	24	31	25	1	2	2	28
" Buchu et Pot Acet.....	7	18	40	28	3	3	1	28
" Calc. et Sod. Glyc'phos.....	6	7	13	7	0	2	4	7
" Calc. Lactophos.....	3	20	20	20	0	0	3	20
" Card. Co.....	3	9	10	10	1	0	2	10

Preparation.	Number report- ing.	Lowest percent- age.	Highest percent- age.	Average percent- age.	Number below average.	Num- ber above aver.	Num- ber re- porting aver.	Sug- gested N. F. standard.
Elix. Cascar. Sagr.....	7	16	24	22	3	1	3	8
" Cascar. Sagr. Co.....	4	24	25	..	..	..	4	24
" Gent. et Ferr. Phosph.....	2	13	20	..	..	..	..	18
" Gent. Glycerin.....	9	9	14	11	1	1	7	11
" Glycerophos. Co.....	6	4	12	12	3	0	3	12
" Glycyrrh. Aq.....	2	3	4	..	..	..	..	3
" Glycyrrh. Arom.....	3	22	24	22	0	1	2	22
" Guar.....	6	22	32	26	1	2	3	26
" Guar. et Apii.....	7	15	26	19	4	2	1	30
" Hydrastis Co.....	1	..	..	25	..	..	..	..
" Hydrang. et Lith.....	5	18	40	20	2	3	0	25
" Helonias Co.....	8	15	22	20	4	2	2	18
" Manac. et Salicyl.....	8	5	25	17	1	3	4	20
" Pepsin.....	4	15	16	16	1	0	3	15
" Pepsin Bism. et Strych.....	8	10	17	11	1	2	5	10
" Pepsin et Bism.....	10	10	18	11	2	1	7	10
" Pepsin. et Rennin. Co.....	6	17	35	20	2	1	3	20
" Phosphor.....	7	30	33	32	1	3	3	32
" Phosphor. et Nuc. Vom.....	4	18	34	34	2	0	2	34
" Cathart. Co.....	7	14	31	25	2	3	2	25
" Catar. et Foenic.....	2	15	25	..	..	..	..	16
" Cinchon.....	8	12	24	20	2	2	4	..
" Cinchon. et Ferr.....	4	15	22	20	1	1	2	..
" Cinchon. Ferr. Bism. et Strych.	4	12	20	20	1	0	3	..
" Cinchon. Ferr. et Bism.....	3	19	20	19	0	1	2	..
" Cinchon. Ferr. et Strych.....	7	18	22	22	21	0	3	..
" Coryd. Co.....	5	20	40	25	1	2	2	25
" Eriodict. Arom.....	3	10	16	16	1	0	2	15
" Creos et Terpin. Hyd.....	4	6	25	..	..	..	..	25
" Digestiv. Co.....	4	10	15	15	2	0	2	15
" Dioscor. Co.....	5	17	22	20	2	1	2	20
" Ferr. Pyrophos. Quin. et Strych.	6	9	24	18	2	3	1	..
" Ferr. Quin. et Strych.....	11	9	25	24	5	3	3	..
" Five Bromides.....	5	0	16	9	1	2	2	4
" Four Chlorides.....	4	0	22	10	2	2	0	..
" Gent.....	9	20	22	21	..	..	9	20
" Gent. et Ferr.....	9	13	22	20	5	1	3	20
" Pot. Brom.....	9	6	16	7	2	1	6	7
" Sabal et Santal. Co.....	8	15	30	20	1	4	3	26
" Sod. Brom.....	5	6	7	6	0	1	4	7
" Sod. Sal.....	5	7	21	7	0	2	3	7
" Sod. Sal. Co.....	4	20	24	24	1	0	3	24
" Tarax. Co.....	4	25	30	28	1	1	2	28
" Terpin. Hyd.....	7	35	45	41	2	1	4	40
" Terpin. Hyd. et Codein.....	8	35	45	41	4	1	3	40
" Terpin. Hyd. et Diacetylmorph.	8	35	42	40	2	3	3	40
" Tonga Co.....	7	18	28	22	3	3	1	22
" Tri. Brom.....	6	0	20	10	2	3	1	4
" Vanil. Co.....	2	10	10	10	0	0	2	10
" Viburn. Opul. Co.....	5	18	37	30	1	2	2	34
" Viburn. Prun.....	2	29	29	29	0	0	2	28
Fldext. Adonid.....	7	58	65	62	3	3	1	60
" Aletrid.....	11	37	45	40	2	3	6	40

Preparation.	Number reporting.	Lowest percentage.	Highest percentage.	Average percentage.	Number below average.	Number above aver.	Number reporting aver. standard.	Suggested N. F.
Fldest. Angel. Rad.....	8	80	90	85	1	2	5	68
" Apii Fruct.....	10	80	88	85	3	2	5	85
" Apocyn.....	13	44	55	48	5	4	4	48
" Aral.....	10	50	57	55	3	3	4	54
" Arnic.....	13	36	60	40	2	4	7	40
" Asclepiad.....	13	37	43	40	2	3	8	40
" Baptis.....	11	40	65	63	5	2	4	60
" Berberid.....	13	35	45	44	6	1	6 <sup>1</sup>	40
" Boldi.....	6	80	90	85	3	3	0 <sup>2</sup>	82
" Buchu Co.....	10	50	56	52	4	4	2 <sup>3</sup>	52
" Calend.....	11	75	87	80	1	3	7	60
" Calumb.....	14	59	71	64	6	3	5 <sup>4</sup>	65
" Castan.....	12	16	20	18	1	1	9 <sup>5</sup>	16
" Catar.....	7	20	40	33	2	3	2	35
" Caulophyl.....	13	54	70	60	2	3	8	60
" Chimaphil.....	10	30	41	38	3	3	4	36
" Chionanth.....	12	45	61	56	4	4	4	55
" Chirat.....	6	40	46	43	1	2	3	42
" Cocillan.....	5	63	68	65	1	1	3	65
" Coff.....	7	18	23	20	1	2	4	20
" Colch. Corm.....	14	48	60	55	6	2	6	52
" Condurango.....	13	36	45	42	5	3	5	40
" Conval. Rad.....	12	48	65	56	4	7	1	58
" Copt.....	4	35	43	40	2	2	0	40
" Corni.....	8	30	42	37	3	3	2	40
" Corydal.....	8	60	66	63	2	4	2	62
" Cubeb.....	14	72	90	75	4	5	5	75
" Cypriped.....	13	30	43	40	2	4	7	40
" Damian.....	14	50	65	60	4	6	4	60
" Dioscor.....	13	64	74	65	1	6	6	40
" Droser.....	4	55	60	55	0	3	1	55
" Dulcam.....	10	33	43	40	2	5	3	40
" Echin.....	13	65	73	68	5	6	2 <sup>6</sup>	65
" Ebuonym.....	13	60	70	66	2	5	6	42
" Eupator.....	12	35	43	40	5	2	5	40
" Euphorb. Pilul.....	13	35	43	40	2	5	6 <sup>7</sup>	40
" Fuci.....	8	56	68	65	3	2	3	65
" Galeg.....	9	39	45	42	3	2	4	42
" Geran.....	10	43	56	50	5	1	4 <sup>8</sup>	50
" Gossyp. Cort.....	13	78	91	85	4	3	6	83
" Hamamel. Fol.....	15	20	25	23	5	4	6 <sup>9</sup>	22
" Helon.....	13	35	45	40	5	5	3	40
" Humul.....	9	42	54	50	4	4	1	50
" Hydrang.....	14	45	60	50	2	5	7	50
" Iri. Ver.....	13	65	90	80	5	4	4	80
" Jalap.....	11	77	87	80	3	3	5	80
" Jugland.....	13	35	45	40	5	2	6	38
" Junip.....	12	30	45	35	5	3	4	50
" Kav.....	14	45	65	55	9	1	4 <sup>10</sup>	52
" Kol.....	13	49	65	56	4	4	5	55
" Kramer.....	11	30	40	38	5	3	3	36
" Lapp.....	15	37	45	40	5	4	6 <sup>11</sup>	38
" Leptand.....	13	30	42	40	3	3	7	60

Preparation.	Number reporting.	Lowest percent-age.	Highest percent-age.	Average percent-age.	Number below average	Number above aver.	Number reporting aver.	Sug-gested N. F. standard..
Fldext. Lupulin.....	11	52	87	67	6	4	1 <sup>12</sup>	55
" Matic.....	10	55	63	60	2	3	5	60
" Mezer.....	5	66	75	70	2	1	2	(?)
" Parcir.....	9	35	43	40	2	2	5	40
" Phytolac.....	14	35	48	40	3	2	9	40
" Prun. Virg.....	13	14	22	18	6	2	5	17
" Quass.....	14	20	31	24	1	7	6	24
" Querc.....	6	35	43	41	2	1	3	40
" Rham. Cathart.....	8	22	45	40	2	3	3	40
" Rhois Glab.....	10	35	42	40	4	1	5	38
" Rubi.....	11	34	41	40	4	1	6	38
" Rumic.....	12	35	43	40	3	1	8	40
" Sanguin.....	14	51	64	60	3	5	6	58
" Scopar.....	11	36	43	40	1	4	6	40
" Scutellar.....	13	36	42	40	3	1	9	40
" Senecio.....	43	37	58	55	5	1	7	55
" Serpentar.....	11	63	72	68	5	6	0 <sup>13</sup>	65
" Solan.....	7	30	58	55	3	2	2 <sup>14</sup>	50
" Stilling. Co.....	2	38	40	..	..	..	..	38
" Stramon.....	13	49	57	55	4	1	8	65
" Thuj.....	8	75	90	80	1	3	4	80
" Trifol.....	11	32	64	40	1	4	6 <sup>15</sup>	40
" Thym.....	7	15	26	18	1	3	3	18
" Trill.....	8	49	65	65	4	0	4	60
" Valer.....	13	60	70	66	2	6	5	65
" Verbasc. Fol.....	6	38	43	40	1	2	3	40
" Viburn. Opul.....	13	50	59	50	0	7	6	50
" Zea.....	9	20	42	30	5	3	1	38
Liquid Antisept .....	6	20	28	28	2	0	4	28
" Antisept. Alk.....	6	4	6	6	2	0	4	5
" Bism.....	4	9	12	12	1	0	3	12
" Ferr. Albumin.....	2	20	21	..	..	..	..	20
" Ferr. Pepton.....	3	14	20	20	1	0	2	18
" Ferr. Pepton et Mangan....	7	14	18	14	0	1	6	18
" Pancreat.....	2	6	6	6	0	0	2	6
" Pepsin. Aromat.....	2	3	3	3	0	0	2	3
" Pic. Carbon.....	1	..	..	76	..	..	..	75
Tinct. Aloe et Myrrh.....	13	60	75	67	5	3	5	65
" Amar.....	4	58	62	60	2	1	1	60
" Antiperiod.....	13	52	55	55	3	0	10	55
" Antiperiod s. Aloe.....	11	53	56	55	1	1	9	55
" Arom.....	3	60	62	62	1	0	2	60
" Bryon.....	10	89	94	90	2	3	5	90
" Cact. Grand.....	6	68	90	80	2	2	2	80
" Calend.....	7	85	92	90	1	1	5	(?)
" Capsic. et Myrrh.....	12	77	85	83	6	3	3 <sup>16</sup>	82
" Caramel.....	4	22	24	23	1	1	2	..
" Cimicifug.....	12	80	94	90	3	4	5	90
" Coccul. Ind.....	3	45	46	46	1	0	2	45
" Croc.....	3	45	46	46	1	0	2	45
" Cubeb.....	9	80	93	87	3	3	3	87
" Delphin.....	3	89	92	90	1	1	1	90
" Ferr. Citro-Chlor.....	11	11	15	15	2	0	9	14.

Preparation.	Number report-ing.	Lowest percent-age.	Highest percent-age.	Average percent-age.	Number below average.	Num-ber above aver.	Num-ber re- porting aver.	Sug- gested N. F. standard.
Tinct. Ferr. Pomat.....	3	95	10	10	1	0	2	10
" Gall.....	3	85	89	85	0	1	2	85
" Guaiac. Co.....	4	40	46	46	2	0	2	45
" Humul.....	4	45	46	..	2	2	..	45
" Ignat.....	5	70	83	80	1	2	2	80
" Iod. Fort.....	6	60	70	65	3	1	2	65
" Iod. Decolor.....	8	70	85	75	2	3	3	75
" Ipecac et Opii.....	6	12	45	13	1	3	2	12
" Jalap.....	3	56	61	60	1	1	1	60
" Jalap. Co.....	3	60	62	60	0	1	2	60
" Kramer.....	7	35	46	46	2	0	5	45
" Opii Crocat.....	3	45	46	45	1	0	2	45
" Passiflor.....	6	43	48	45	1	1	4	45
" Pectoral.....	3	45	50	48	1	1	1	48
" Persion.....	6	55	73	66	1	3	2	65
" Persion. Co.....	4	25	30	30	3	0	1	28
" Pulsatil.....	5	55	71	70	1	1	3	70
" Quillaj.....	4	27	33	32	1	1	2	30
" Rhei Aq.....	3	..	..	10	..	..	3	10
" Rhei Dulc.....	5	42	46	46	1	..	4	45
" Rhei et Gent.....	4	45	46	46	1	0	3	45
" Sabal. et Santal.....	3	72	75	74	1	1	1	74
" Serpent.....	5	55	60	60	1	0	4	60
" Sumbul.....	4	60	65	60	0	1	3	60
" Vanill.....	9	38	44	40	1	3	5	38
" Viburn. Opul. Co.....	7	65	71	70	4	0	3	68

<sup>1</sup> 5 reported 40%. <sup>2</sup> 2 reported 80%, 2 reported 90%. <sup>3</sup> 4 reported 50%, 4 reported 55%.  
<sup>4</sup> 10 reported 60 to 65%. <sup>5</sup> One reported 30%. <sup>6</sup> 5 reported 65%, 4 reported 70%. <sup>7</sup> 4 reported 42%.  
<sup>8</sup> 3 reported 45%. <sup>9</sup> 4 reported 20%, 4 reported 25%. <sup>10</sup> 4 reported 52%. <sup>11</sup> 4 reported 38%.  
<sup>12</sup> Reports very variable. <sup>13</sup> 4 reported 65%, 4 reported 70%. <sup>14</sup> Only one reported below 50%.  
<sup>15</sup> Only one below 39%, and 1 above 43%. <sup>16</sup> 3 reported 80%, 3 reported 85%.

DETROIT, JUNE 1922.

### THE OPINION OF TEACHERS CONCERNING DEGREES IN PHARMACY.

BY J. G. BEARD.\*

In November of 1921 a postal questionnaire was sent to all Conference teachers of professorial rank that had for its object the obtainment of their opinions on the subject of degrees in pharmacy. Ninety-six replies have been received and as this number represents nearly eighty percent of the professors addressed and as these answers are representative of opinion generally it seems unnecessary to delay further in reporting the facts received.

The queries listed on the questionnaire were six in number and were phrased substantially as follows:

Query No. 1. Do you believe the doctor's degree should be offered in pharmacy?

Query No. 2. If so, how many years of study should be required of applicants for the degree?

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