States Pharmacopœia and the National Formulary, for which the specific gravity of the finished solution is given.

(2) The adoption of W/V percentage for exclusive use in preparing all types of extemporaneous percentage solutions of solid solutes.

(3) The adoption of V/V percentage for all extemporaneous percentage solutions of liquid solutes. (In the case of U. S. P. and N. F. solutions or preparations falling into this class, these solutions should be prepared by W/W percentage, provided the specific gravity is included in the official description of the preparation.)

UNIVERSITY OF NEBRASKA,
COLLEGE OF PHARMACY.

COMMITTEE REPORTS

THE PHARMACEUTICAL SYLLABUS COMMITTEE.

BULLETIN I—NOVEMBER 25, 1927.

This begins a new series of bulletins of the Committee, on the preparation of a fourth edition of the *Syllabus*.

Last spring, the Chairman made a sincere effort to give up the position and to have someone else selected in his place, as described in Bulletin XLI, old series, but no encouragement was offered by anyone. In fact, several members of the Committee and others, who wrote about the matter, strongly urged the Chairman to continue in the place and advanced reasons why he should do so. This correspondence made pleasant reading for the Chairman, but it did not help him to accomplish his wish to give up the place. However, he cannot refuse to go on with the work, without knowing that it will be carried on by someone else, and there the matter rests for the present.

Other pressing duties, in addition to his regular work, have prevented the Chairman from working on the *Syllabus* during the past summer and fall, but this extra work is completed, and it is expected that some work on the *Syllabus* can be accomplished each week and reported to the Committee in the bulletins.

The present membership of the Committee is as follows:

Terms expire.	
	FROM THE AMERICAN PHARMACEUTICAL ASSOCIATION.
1928	E. F. Kelly, 10 West Chase Street, Baltimore, Md.
1929	G. M. Beringer, 501 Federal Street, Camden, N. J.
1930	H. H. Rusby, 115 West 68th Street, New York, N. Y.
1931	W. G. Gregory, 185 Parkside Avenue, Buffalo, N. Y.
1932	W. H. Rudder, Salem, Indiana.
1933	W. C. Anderson, 136 Herkimer Street, Brooklyn, N. Y.
1934	E. G. Eberle, 10 West Chase Street, Baltimore, Md.
	FROM THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.
1928	J. A. Koch, 1431 Boulevard of the Allies, Pittsburgh, Pa.
1929	T. J. Bradley, 179 Longwood Avenue, Boston, Mass.
1930	F. J. Wulling, University of Minnesota, Minneapolis, Minn.
1931	J. G. Beard, Chapel Hill, North Carolina.
1932	E. V. Lynn, University of Washington, Seattle, Wash.
1933	E. F. Cook, 145 North Tenth Street, Philadelphia, Pa.
1934	D. B. R. Johnson, 1006 Classen Boulevard, Norman, Okla.
	FROM THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.
1928	John Culley, 2479 Washington Avenue, Ogden, Utah.
1929	George Judisch, Ames, Iowa.

1930 W. D. Jones, 1 East Bay Street, Jacksonville, Fla.
1931 C. J. Clayton, 1838 Vine Street, Denver, Colo.
1932 R. L. Swain, Sykesville, Maryland.
1933 A. L. I. Winne, 601 West 24th Street, Richmond, Va.
1934 R. W. Sterling, 221 Dement Avenue, Dixon, Ill.

The above list will be used frequently for mailing purposes, and members are requested to send any desired changes or necessary corrections to the Chairman.

Last April, Dean C. W. Johnson, Chairman of the Special Committee on Curriculum of the American Association of Colleges of Pharmacy, sent a questionnaire to the member colleges of the organization, asking for opinions on the number of hours required to adequately teach the different subjects of the pharmaceutical curriculum, and, in July, a meeting of members of that Committee was held in Chicago, with Dr. W. W. Charters. Besides Dr. Charters, J. A. Koch, R. A. Lyman, W. B. Day and T. J. Bradley were present at this meeting.

After careful consideration and thorough discussion, it was agreed:

1. That the Pharmaceutical Syllabus Committee will have the aid and coöperation of the Special Committee on Curriculum of the American Association of Colleges of Pharmacy, in preparing the fourth edition of the *Syllabus*.

2. That the Pharmaceutical Syllabus Committee has the privilege of using any of the material in the *Basic Material for a Pharmaceutical Curriculum*, which is the report of the Commonwealth Fund investigation of pharmacy made by Dr. Charters and a large corps of assistants, and that we shall use such parts of this report as are needed in the *Syllabus*.

3. That, in accordance with the above agreements, Dr. Charters and several of those who assisted him in preparing his report, with the members of the Special Committee on Curriculum, and certain other individuals, not already members of the Pharmaceutical Syllabus Committee, will be appointed as associate members of the Committee, to aid in preparing the fourth edition of the *Syllabus*, by the same plan as was used by the Revision Committee in appointing auxiliary workers to aid in preparing the tenth revision of the *United States Pharmacopœia*.

In accordance with the above understanding, the following associate members of the Pharmaceutical Syllabus Committee are appointed:

A. R. Bliss, University of Tennessee, Memphis, Tenn.
W. W. Charters, 5820 Woodland Avenue, Chicago, Ill.
H. C. Christensen, 130 North Wells Street, Chicago, Ill.
E. N. Gathercoal, 701 South Wood Street, Chicago, Ill.
C. W. Johnson, 4515 Sixteenth Avenue, N. E., Seattle, Wash.
Edward Kremers, University of Wisconsin, Madison, Wis.
A. B. Lemon, 3435 Main Street, Buffalo, N. Y.
R. A. Lyman, 1649 South 21st Street, Lincoln, Neb.
H. C. Muldoon, Duquesne University, Pittsburgh, Pa.
Louis Saalbach, 5620 Wellesley Avenue, Pittsburgh, Pa.
W. L. Scoville, P. O. Box 488, Detroit, Mich.
W. F. Sudro, 1117 Thirteenth Street, N., Fargo, N. D.
H. W. Youngken, 179 Longwood Avenue, Boston, Mass.
Others may be added to this list, later.

These auxiliary members will receive all regular bulletins of the Committee, as issued, and will be asked to assist in the preparation of certain of the outlines of subjects and to comment on the other outlines.

Comments on the subject matter of this bulletin are requested. Other bulletins are in preparation, and will be sent out in rapid succession.

T. J. BRADLEY, *Chairman.*

179 Longwood Ave.,
Boston, Mass.

DIGESTIVE FERMENTS AND GLANDULAR PRODUCTS.*

REPORT OF THE SUB-COMMITTEE ON DIGESTIVE FERMENTS AND GLANDULAR PRODUCTS READ AT THE SIXTEENTH ANNUAL MEETING OF THE AMERICAN DRUG MANUFACTURERS' ASSOCIATION, HOTEL BILTMORE, NEW YORK CITY, APRIL 4–7, 1927.

BY DAVID KLEIN, CHAIRMAN.

Three projects were submitted to the members of the committee as suitable for collaborative study:

1. The United States Pharmacopœia, Tenth Edition, contains a standard for the trypsin content of Pancreatin. There appears to be some uncertainty among the laboratories of member firms regarding the accuracy and interpretation of this test.

It is suggested that samples of various tryptic strength be submitted to the Committee for assay according to the U. S. P. method that some idea may be gained of the accuracy of the method as carried out in the different laboratories.

2. The National Formulary, Fifth Edition, specifies that the milk used in testing Rennin shall have an acidity of between 0.14% and 0.15% calculated as lactic acid. Many laboratories heretofore have used an acidity of 0.18%. The question of the kind of milk is also important.

It is suggested that samples of different activity be assayed by the members according to their interpretation of the N. F. method in order to ascertain what variations in reported strength occur under these condtions.

3. The percentage of Sodium Glycocholate and Sodium Taurocholate in bile products is often requested. The methods for determining these leave much to be desired. It has been suggested that the Committee study various methods or at least adopt some tentative methods for the sake of uniformity.

All three suggestions were approved by the Committee, but no work was done on project three. When the methods now employed for the asssy of bile products were collected, it was evident that their study was a larger task than at first supposed, and could well be the sole object for a year's collaborative effort. Accordingly, it was deferred, but I wish to acknowledge the very helpful and detailed suggestions of Dr. Fairchild. These should form the basis of another year's work.

TRYPSIN.

Two samples of trypsin were submitted, with the request that they be assayed by the U. S. P. method as outlined on page 275, stating the grade and source of casein used. Subsequently, the committee was asked to re-assay the samples.

The results are as follows:

TABLE I.

	Sample A.		Sample B.	
Laboratory.	1st test.	2nd test.	1st test.	2nd test.
1	1.75	1.25	3.75	3.50
2	1.00	.40	3.00	1.00
3	1.32	1.32	4.00	4.00
4	1.00	1.00	2.00	2.00
5	1.00	1.00	2.80	2.80
6	1.00	1.00	4.00	4.00
7	1.00	1.00	2.50	2.50

All figures represent number of times U. S. P. strength.

It will be noted that on Sample A, five out of the seven collaborators found the trypsin to be of U. S. P. strength, whereas one reported it a third stronger and another three-fourths stronger. On retesting several months later, five laboratories found the same values as previously reported, whereas two showed a marked drop in tryptic strength.

On Sample B, the reported strength on the first test varied from twice U. S. P. to four times and from U. S. P. to four times U. S. P. on the second assay several months later. Five laboratories reported no change in tryptic strength between first and second assays.

* Submitted to JOURNAL, A. PH. A. for publication upon recommendation of the Scientific Section of the American Drug Manufacturers' Association.

The reasons for the wide variation in results on Sample B are not clear. The method is sensitive enough to detect differences well within the range of variation reported. As one collaborator put it, "In our experience the Fuld-Gross method for the assay of trypsin and as adopted in the U. S. P. X is the most accurate and simple yet suggested. In any case a series of tests should be run grading the amount of ferment from below to above the standard specified in the U. S. P. In our opinion, the success of the Fuld-Gross test depends largely on using casein, purified according to Hammarsten; casein as specified in the U. S. P. X is not sufficiently purified."

Another member made the following comment on the quality of casein. "We tried to use Hammarsten's casein supplied by X and found this very unsatisfactory, since for some reason the solution of casein alone would not precipitate well when acetic acid was added as prescribed by the test. This would tend to give, probably, much higher indications of strength than with the use of Z's casein, and at best it would be very irregular and uncertain."

The kind of casin used cannot be the source of the variations, since the same brand was used by those getting the high results, as well as those getting the low ones.

It would appear that the U. S. P. method for trypsin is satisfactory, for a product of U. S. P. strength. On the other hand, on a product of higher tryptic strength, the collaborative results show too great a variation.

A very high grade of casein should be employed.

RENNIN.

Two samples of Rennin were submitted, with the request that they be tested according to the N. F. method, using (a) certified milk acidity 0.14%; (b) certified milk 0.18%; (c) pasteurized milk 0.14%; (d) pasteurized milk 0.18%. The samples were sent out about November

TABLE II.

(First Assay.)

Lab.	Rennin A.				Rennin B.			
	Cert. 0.18	Past. 0.18	Cert. 0.14	Past. 0.14	Cert. 0.18	Past. 0.18	Cert. 0.14	Past. 0.14
1	20,800	41,700	11,900	20,800	83,300	125,000	50,000	71,400
2	41,700	41,700	25,000	14,700	125,000	125,000	125,000	62,500
3	41,700	166,600	31,500	71,400	142,900	333,300	125,000	200,000
4	55,000	89,000	33,000	39,000	200,000	250,000	120,000	133,000
5	59,500	83,300	20,800	27,800	227,300	315,000	83,300	96,200
6	47,600	57,700	21,300	28,300	115,400	187,500	71,400	93,800
7	42,300	66,700	19,100	22,200	150,000	250,000	75,000	81,100
7	42,300	62,500	17,100	21,000	161,300	230,800	69,800	88,200
High	59,500	166,600	33,000	71,430	227,300	333,300	125,000	200,000
Low	20,800	41,700	11,900	14,700	83,300	125,000	50,000	62,500
Av.	43,900	76,200	26,100	30,700	150,700	227,100	89,900	103,300

TABLE III.

(Second Assay.)

Lab.	Cert. 0.18	Past. 0.18	Cert. 0.14	Past. 0.18	Cert. 0.18	Past. 0.18	Cert. 0.14	Past. 0.14
1	62,500	50,000	25,000	26,300	167,000	167,000	100,000	100,000
2	45,600	50,000	29,400	19,000	214,300	150,000	100,000	66,700
3	41,700	166,600	31,500	71,400	142,900	333,300	125,000	200,000
4	50,000	72,000	34,000	43,000	194,000	248,000	120,000	145,000
5	108,700	108,700	30,900	30,500	416,700	416,800	113,600	113,000
6	75,000	71,400	34,500	30,300	250,000	250,000	125,000	107,100
7	41,700	65,200	22,400	31,500	166,700	214,300	83,300	65,200
7	53,600	71,400	13,000	27,800	200,000	272,700	52,700	107,100
High	108,700	166,600	34,500	71,400	416,700	416,700	125,000	200,000
Low	41,700	50,000	13,000	19,000	142,900	150,000	52,700	65,200
Av.	59,900	81,900	27,600	35,000	219,000	256,500	102,200	132,400

17th, and the members of the Committee were urged to assay them promptly, and then to re-assay them in March to ascertain what changes occurred in strength during that time.

The results of the first test are embodied in Table II, and those of the second test in Table III.

The variations in reported strength, for the same type and acidity of milk are enormous. Nevertheless, certain generalizations can be duduced from the data.

1. The acidity of the milk is an important factor. Using the same grade of milk, the reported activity will be higher when the milk has an acidity of 0.18, than when it has an acidity of 0.14. Taking the average values of Tables I and II, this increase in activity varies from 1.7 fold (Rennin A, Table I, certified 0.18 and 0.14) to 2.6 fold (Rennin A, Table II, pasteurized 0.18 and 0.14).

2. The grade of milk is important. In practically all cases, pasteurized milk of either acidity showed a higher activity than certified milk of the corresponding acidity. Certified milk (0.14) gave the lowest activity, and pasteurized milk (0.18) the highest.

3. The activities in the second assay were definitely higher than in the first series, carried out previously, at intervals of from two to four months, according to the laboratory reporting. This observation is interesting, in view of the feeling on the part of some that rennin loses its activity rapidly. However, it cannot be concluded that the results demonstrate an increased activity during this four months interval, because of the possibility of season variations in the quality of the milk. It could well be that the rennin had lost strength, but that this was over-compensated by variations in the milk with a net result of a higher reported activity.

4. The N. F. method as an absolute means of estimating rennin activity is unreliable. There are factors beyond the control of the analyst, that are responsible for wide variations in results between different laboratories.

The situation is quite otherwise if one makes use of a standard rennin, which is run at the same time as the unknown. When the tests on Rennins A and B were being carried out in the Chairman's laboratory, an arbitrary standard was tested simultaneously. This standard had been adopted in July 1926, after an exhaustive test, as meeting the N. F. requirements. I wish to emphasize that it is purely an arbitrary standard that has been very useful in our laboratory. The results are embodied in Table IV.

TABLE IV.

Milk.	Std. Min.	Std. Sec.	A. Min.	A. Sec.	B. Min.	B. Sec.	A. N. F. Method.	A. Comp. Method.	B. N. F. Method.	B. Comp. Method.
Past. 0.14	9	15	8	50	2	40	28,300	26,200	93,750	86,720
Past. 0.18	4	55	4	20	1	20	57,700	28,350	187,500	92,175
Cert. 0.14	12	30	11	45	3	30	21,300	26,600	71,400	89,300
Cert. 0.18	5	20	5	15	2	10	47,600	25,400	115,400	61,500
				Second Test.						
Past. 0.14	8	20	8	15	2	20	30,300	25,250	107,100	89,250
Past. 0.18	3	35	3	30	1	0	71,400	25,600	250,000	89,500
Cert. 0.14	7	5	7	15	2	0	345,000	24,400	125,000	88,500
Cert. 0.18	3	30	3	20	1	0	75,000	26,250	250,000	87,500

The values in the columns headed "N. F. Method" were calculated from the absolute coagulation time according to the N. F. method. The values in the columns headed "Comp. Method" were derived by assuming the standard to have a strength of 25,000, and taking into consideration the proportionate coagulation time of the unknown compared with the coagulation time of the standard.

The results by the comparative method are uniform and within the experimental error. In the case of Rennin A, the extreme variations by the N. F. method were from 21,300 to 75,000, whereas by the comparative method these variations were from 24,400 to 28,350. In the case of Rennin B, the variations by the N. F. method were from 71,400 to 250,000, whereas by the comparative method they were from 61,500 to 89,500, and I believe that the value 61,500 is an experimental error, since it is out of line with the other seven results.

The advantages of a Standard Rennin are obvious. It eliminates the kind of milk used,

the acidity within reasonable limits, and the personal factor of the analyst. Two difficulties are involved, however, before such a standard could be generally adopted. First, an agreement as to what constitutes an N. F. Rennin and secondly, how permanent such a standard would be.

By general agreement of the collaborators, a rennin could no doubt be adopted as representing an N. F. product. The greater difficulty is the ascertaining of its stability. Suggestions on this point are earnestly solicited. My suggestion is that work be continued on Samples A and B at 6-month intervals. By averaging the data for the various intervals, despite the wide individual results, marked loss of activity due to age, if it occurs, should be revealed.

RECOMMENDATIONS.

It is recommended:

1. That a further study be made of the U. S. P. method for Trypsin, using products having a higher tryptic value than the U. S. P. requirements to ascertain causes of the variations in reports of collaborators this year.
2. That further assays of Rennin A and B, be made along the lines of this year's work, to ascertain keeping quality.
3. That a preliminary study of the analysis of bile products be inaugurated during 1927.

The Chairman expresses his grateful appreciation to the members of the Committee for their excellent coöperation.

LIBRARIES.

It is the purpose of the School of Business of Columbia University to build up the most important business library in the country, according to the annual report of Dean James C. Egbert to President Nicholas Murray Butler. Dr. Egbert characterized as significant the interchange of instruction among schools of law, engineering and business.

In Washington every type of library is well represented. In no other library center has coöperation in the matter of purchase and specialization been more highly developed. The several collections throughout the city may truly be said to augment each other and the matter of duplication has been reduced to a minimum.

The Surgeon General's is the outstanding medical library. The Library of the Department of Agriculture is the largest in the world on that subject, and is outstanding also in many fields covered by the sciences allied with agriculture. Probably, however, its greatest strength lies in its bibliographical records, which cover, in various fields, not only its own collections, but those of other libraries. In botany this is notably true. In plant pathology, animal pathology, horticulture and both foreign and domestic agricultural statistics it maintains indexes unique of their kind and unrivaled in completeness. These indexes and catalogs of various kinds number more than a million and a half cards.

The Library of the AMERICAN PHARMACEUTICAL ASSOCIATION will have the advantages offered by the large libraries so that this service will eventually be an outstanding feature of the Headquarters.

METHOD OF STERILIZATION OF THERMOMETERS REVIVED.

A new method of sterilizing clinical thermometers, which has proved more effective than previous methods, has been adopted by the United States Veterans' Bureau and orders have been dispatched to field stations of the Bureau to this end, the Acting Medical Director of the Bureau, Dr. Winthrop Adams, announced in a circular (No. 448) made public October 22nd. Part of the text of the circular follows:

"The experience of the United States Naval Medical Supply Depot shows that the sterilization of clinical thermometers by immersion in a 10 per cent solution of liquor formaldehyde (made by diluting one part of liquor formaldehyde with three parts of water) insures a solution with a potent germicidal activity. It has been found that such formaldehyde solution not only does not affect the pigment on clinical thermometers, which is readily removed by other disinfectants, but even fixes this pigment."