

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

MARKING SYSTEMS.*

BY WILLIAM J. HUSA.^{1,2}

INTRODUCTION.

At the 1925 meeting of the American Association of Colleges of Pharmacy the committee on curriculum and teaching methods recommended a uniform marking system.¹

A great variety of marking systems is in use. The main purpose of this article is to present a compilation of the advantages and disadvantages of each of the chief types of marking systems. Further, the writer wishes to make available to others the results of a survey of the grades used in the various colleges of the Association.

LETTER SYSTEMS VS. NUMERICAL SYSTEMS.

For a preliminary rough classification, all marking systems may be classified into groups, according to whether use is made of (1) numerical grades, or (2) letters or words. The above-mentioned survey, in which information was secured from 47 of the 48 member colleges, indicated that 14 colleges use numerical grades and 33 use letters.

A numerical system has the following advantages: (1) ease of grading examination papers, *i. e.*, each question can be assigned a numerical value and the results added, (2) ease of calculating average grades for determining honors, etc., (3) a percentage system may indicate an approach to a standard. The disadvantages of a numerical system are: (1) generally the scale is too fine, (2) it is probably more difficult to grade consistently unless a definite distribution of grades is decided upon as is generally done in letter systems.

Letter systems have advantages as follows: (1) in the ordinary letter systems the scale is not too fine, (2) in a 4- or 5-letter system it is sufficient to classify the students into 4 or 5 groups, instead of attempting to place a percentage or numerical valuation on each student. The chief disadvantage of letter systems is that it is difficult to compute averages of letters without translating them into numbers.

Under letter systems, daily and monthly grades are sometimes recorded by the teacher in numerical form and translated into letters for the final report to the registrar. Under numerical systems, recitations and written examinations are sometimes graded in letters and converted to a numerical scale at the end of the course. In some letter systems, the letters are officially defined by the college in terms of numbers on a scale of 100. Of the 33 member colleges using letter systems, 21 use letters which are given a definite numerical significance.

* Superior numbers refer to bibliography; figures in parenthesis are used for enumeration.

¹ Professor of Pharmacy, University of Florida.

² The author is indebted to the member colleges for information on their marking systems, and to Dr. Joseph Roemer and Dr. J. R. Fulk of the Teachers College of the University of Florida for helpful suggestions.

FINENESS OF SCALE.

Starch² has investigated the problem of how fine a scale of units may be used satisfactorily. From the results of extensive experiments on the grading of the same paper by many different teachers and of the same paper by the same person after a lapse of time he concludes that a numerical marking scale, instead of being 100, 99, 98, 97, 96, 95, etc., should be 100, 95, 90, 85, 80, etc. He suggests that even the latter scale might perhaps better be replaced by a coarser one. Starch admits that the finer scale, if conscientiously used, probably tends to stimulate the making of finer distinctions, but he cites the following objections to a very fine scale: (1) an illusion of accuracy, (2) an injustice to the student of supposed differences where no differences actually exist, or where the relative merit may be just reversed, (3) embarrassment to the teacher due to this injustice.

Letter systems may be classified according to the number of letters used to indicate passing work. Of the 33 member colleges using letters, 1 has 5 passing letters, 21 use 4 passing letters, 10 use 3 passing letters and 1 uses 1 passing letter.

The system of one pass mark used by one college is in use in the graduate colleges of some of our leading universities. The advantage of this method is that it reduces the work of grading down to the mere act of separating the "sheep" from the "goats." It may also promote a more democratic feeling among the students. The objection to this system is that it does not tell enough. For instance in getting the results of an election, we wish to know not only who was elected but also by how many votes. Likewise in receiving the report on his work in a course a student wishes to know not only whether he passed or failed, but by how much.

Systems of two passing letters are not in use in any of the member colleges, 10 colleges, however, use a system of three pass marks. Such a system readily lends itself to the classification of students as "above average," "average," and "below average."

In recent years this system has been replaced in a number of colleges by a system of 4 pass marks. The chief reason for such a change is that in the 3-letter system the "above average" group is fairly large, and sufficient recognition is not given to the exceptional student. The remedy has been to subdivide the "above average" group into a small group of exceptional students and a larger group whose work is above the average. In the system of 5 pass marks, both the "above average" and "below average" groups are subdivided. A distinction is thus made between the students who are somewhat below average and those who are almost failures. This subdivision of the "below average" group has not proved to be worth the effort and there has been a marked tendency to discard the 5-letter system for one of 4 letters. At present only one member college uses 5 pass marks. It is evident that the system of 4 pass marks is growing in popularity.

DISTRIBUTION OF GRADES.

An important question that arises in connection with marking systems is, "How shall the marks be distributed?" That is, how frequently in the long run shall each unit on the scale be assigned? A typical distribution of passing grades under the 4 pass mark system is A, excellent—5 per cent, B, above average—20 per cent, C, average—50 per cent, D, below average—25 per cent.

Starch² maintains the viewpoint that marks on the whole and for large groups of students of usual ability should be distributed with a reasonably close conformity to the normal bell-shaped probability curve. The chief reasons he cites for this principle are: (1) that physical traits, such as height, length of arms and girth of head are distributed in accordance with the probability curve, (2) that mental functions of which accurate measurements have been made are also distributed in this fashion, and (3) that marks assigned by many teachers to the same pupils approximate closely to this distribution. He recognizes, however, three factors which tend to disturb this distribution of ability: (1) elimination of the poorer pupils as they pass from grade to grade, (2) the raising of performance of pupils by good teaching, and (3) the lowering of their performance because of lack of maximum effort.

Pressey³ concludes that the distribution of performance in a given subject would be affected by, (1) the distribution of incentives, (2) the distribution of teaching effort and (3) the relation of performance to standards in the given subject. Some teachers may devote chief attention to development of superior pupils, while others may work more with the poor students in an effort to get them over the passing mark. Thus the natural distribution of performance may be disturbed and a different distribution of grades may result.

Tidyman⁴ states that the common marking system assumes that the college gets an unselected group of persons, and that each class in the school has approximately the same selection of students. He feels, however, that it is quite likely that on close examination neither of these assumptions will be found true in the majority of colleges. Tidyman cites examples of the use of intelligence tests as an aid in determining a fair distribution of grades but he realizes that intelligence is only one of the many factors determining achievement. Davenport⁵ has proposed a method of calculating the average ability of a class based on previous grades since entering college. When an excessive number of poor students entered a course, the grades would have to run low, and vice versa.

Starch² concludes that, on the whole, marks will be assigned more justly if they are assigned with reasonably close conformity to the probability distribution, than if no heed is given to it and every teacher allowed to follow his own inclination. In his opinion, large deviations should occur only when genuine reasons exist.

As Mendenhall⁶ has stated, any grade is defined ultimately by the number of students receiving it. Under any given marking system, it is thus important to have some practical method of standardizing the distribution of grades. In the survey of member colleges, this point was not closely investigated, but it seems that the colleges using a letter system lay more stress on distribution than is the case in colleges using a numerical system.

HOW CAN UNIFORMITY BE SECURED?

In the preceding discussion attention has been centered on the pass marks, it being assumed that these were the only marks of practical importance in cases of students changing from one college to another. Any course in which the student was marked "incomplete" or "conditioned" would have to be repeated unless the deficiency was made up at the college which gave the grade.

In view of the fact that the marking system is largely a matter which concerns

the individual college, it would probably be unwise for any organization like our Association to require the use of a uniform marking system at present. But the convenience of uniform marking would be so great that everything possible should be done to bring colleges closer together on this point. Progress could be made if the Association would decide on a model system, such as the system of 4 pass marks recommended by the committee on curriculum and teaching methods. It might then be feasible to require the deans to prepare, for students desiring to transfer from one college to another, an official transcript on which the grades would be translated into the uniform system of the Association. This would require a little effort, and this required effort would be an incentive to each college to adopt the uniform system.

While the survey was being made, one university reported that a new marking system had just been adopted and another wrote that a change was contemplated from a numerical system to a letter system. The point is that changes are being made from time to time and if these changes could all be focussed in one direction there would soon be much greater uniformity than exists at present. In colleges affiliated with universities, I see no reason why the pharmacy college should not have as much voice in the matter as any other college. A change might not be possible immediately, but at any time when a change was proposed the pharmacy college could advocate the system adopted by the A. A. C. P.

It is hardly necessary to dwell on the disadvantages of having so many different methods of marking. A student in his career from the elementary school through high school, college and the graduate school has been known to encounter as many as five different marking systems. Thus parents have difficulty in following the progress of their children, high school principals seeking college records of their graduates, and colleges seeking high school records are handicapped, and when students change from one university to another each case requires special effort in translating grades for awarding honors, etc. Smith⁷ states that in these days of efficiency it seems as though institutions of the highest learning all over the country might at least set the example of providing a uniform marking system which could be understood by any intelligent person.

There is an opportunity for our Association to do a great constructive work in education by working towards the adoption of a uniform marking system.

BIBLIOGRAPHY.

- (1) "Proceedings of American Association of Colleges of Pharmacy," 44 (1925).
- (2) Starch, D., "Educational Measurements 1916," The MacMillan Co.
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- (4) Tidyman, W. F., *School and Society*, 22, 247-8 (1925).
- (5) Davenport, H. J., quoted by Rogers, J. H., *School and Society*, 22, 160-2 (1925).
- (6) Mendenhall, quoted by Brooks, R. C., *School and Society*, 1, 32-5 (1915).
- (7) Smith, F. L., *Education*, 42, 98-100 (1921).

ABSTRACTS OF MARKING SYSTEMS REPORTED BY EACH COLLEGE.

I. SYSTEMS OF FIVE LETTERS FOR PASSING WORK.

1. South Dakota State College, Division of Pharmacy.

Pass Marks.

E = excellent.

S = superior.

M = medium or average.

Non-pass Marks.

I = low.

P = passed.

C = condition.

D = deferred.

F = failed.

Grade points are assigned as follows:

E = 1.5, S = 1.3, M = 1, I = 0.5, P = 0.

II. SYSTEMS OF FOUR LETTERS FOR PASSING WORK.

a. Letters without numerical significance.

1. Purdue University, School of Pharmacy.

The new system adopted to go in effect in 1926 is as follows:

Pass Marks = H, A, B, P. *Non-Pass Marks* = D, F, I.

Distribution expected H = 5%, A = 20%, B = 50%, P = 18%, D, F and I = 7%.

In the three-year course in pharmacy a grade of B or higher in at least 65 semester hours of work is required for graduation.

2. Ohio State University, College of Pharmacy.

Pass Marks.

A = excellent.

B = good.

C = average

D = pass.

Grade points are assigned as follows:

A = 4 points, B = 3 points, C = 2 points, D = 1 point, E = 0 points.

An average of 1.8 points is required for graduation.

Non-pass Marks.

E = failed.

I = incomplete.

Prog. = progress (used in thesis work).

3. Ohio Northern University, College of Pharmacy.

Pass Marks.

Ex. = excellent.

G = good.

Av. = average.

P = passed.

Non-pass Marks.

Cn. = conditioned.

F = failed.

4. University of Kansas, School of Pharmacy.

Pass Marks: A, B, C, D. *Non-pass Marks:* I = incomplete; F = failed.

Not more than 23 and 31 credit hours of D allowed for degrees of Ph.C. and B.S., respectively.

5. University of Michigan, College of Pharmacy.

Pass Marks.

A = excellent.

B = good.

C = fair.

D = unsatisfactory, passed without points.

Grade points: A = 3, B = 2, C = 1, D = 0. In order to graduate a student must have as many points as hours credit.

Non-pass Marks.

E = not passed, no credit.

I = incomplete.

X = absent from final examination.

6. University of California, California College of Pharmacy.

Pass Marks.

A = excellent.

B = good.

C = fair.

D = barely passing.

Non-pass Marks.

E = unsatisfactory (entitled to re-examination).

F = failure.

7. University of North Carolina, School of Pharmacy.

Pass Marks.

A = excellent.

B = good.

C = fair.

D = barely passing.

Non-pass Marks.

E = condition (removable by re-examination).

F = failure.

8. State University of Iowa, College of Pharmacy.

Pass Marks: A, B, C, D. *Non-pass Marks:* Inc. = incomplete, Cond. = condition, Fd. = failed.

Distribution expected: A = 5 to 7 per cent. Of the passing students in a given individual course through an extended period of years.
 B = 20 per cent.
 C = 50 per cent.
 D = 25 per cent.

9. University of Southern California, College of Pharmacy.

Pass Marks.

A = excellent.
 B = good.
 C = fair.
 D = passing.

Grade Points: A = 3, B = 2, C = 1, D = 0.

Non-pass Marks.

Con. = conditional.
 Inc. = incomplete.
 F = failure.

b. *Letters with numerical significance.*

1. University of Tennessee, School of Pharmacy.

Pass Marks.

E = excellent = 95-100 per cent.
 G = good = 85-94 per cent.
 S = satisfactory = 75-84 per cent.
 P = pass = 70-74 per cent.

Non-pass Marks.

D = deficient = 60-69 per cent.
 X = failure = below 60 per cent.

2. George Washington University, School of Pharmacy.

Pass Marks.

A = 96-100.
 B = 90-95.
 C = 80-89.
 D = 70-79.

Non-pass Marks.

E = failure.
 F = incomplete.

3. University of Illinois, School of Pharmacy.

Pass Marks.

A = 95-100.
 B = 85-94.
 C = 75-84.
 D = 70-74.

Non-pass Marks.

E = below 70.

4. College of the City of Detroit, School of Pharmacy.

Pass Marks.

A = 90-100 per cent.
 B = 80-89 per cent.
 C = 70-79 per cent.
 D = 60-69 per cent, unsatisfactory, hours but no points.

Non-pass Marks.

E = below 60 per cent (failure).

5. University of Wisconsin, Course in Pharmacy.

Pass Marks.

A = excellent = 93-100.
 B = good = 85-92.
 C = fair = 77-84.
 D = poor = 70-76.

Non-pass Marks.

Conditional = 60-69.
 Failed = below 60.
 Inc. = incomplete.

6. University of Montana, School of Pharmacy.

Pass Marks.

A = 90-100.
 B = 80-90.
 C = 70-80.
 D = 60-70.

Non-pass Marks.

E = condition.
 F = failed.

The standard grade curve is used as a guide. Students must make a C average to graduate normally.

7. Oregon Agricultural College, School of Pharmacy.

Pass Marks.

A = 93-100 per cent. D = 70-77 per cent.
 B = 85-92 per cent.
 C = 78-84 per cent.

Non-pass Marks.

Incomplete.
 E = condition = 60-69 per cent.
 F = failure = below 60 per cent.

8. University of Washington, College of Pharmacy.

Pass Marks.

A = 96-100 per cent.
 B = 86-95 per cent.
 C = 76-85 per cent.
 D = 70-75 per cent.

Non-pass Marks.

I = incomplete.
 E = failure = below 70.

A student must earn $\frac{2}{3}$ of grades above D in any one year to be allowed to return the next year. A grade of I can be given only if a student has a passing grade up to within two weeks of end of course.

9. Valparaiso University, School of Pharmacy.

Pass Marks.

A = 95-100.
 B+ = 90-94.
 B = 85-89.
 C+ = 80-84.
 C = 75-79.
 D = 70-74.

Non-pass Marks.

E = 65-69.
 F = below 65 = failed.
 (-) = failed (dropped).
 Inc. = deferred.
 W = withdrawn.
 W. F. = withdrawn for failure.
 r = see professor's report.

10. University of Minnesota, College of Pharmacy.

Pass Marks.

A = 93-100.
 B = 87-93.
 C = 81-87.
 D = 75-81.

Non-pass Marks.

F = failure.
 E = condition.
 I = incomplete.

11. State College of Washington, School of Pharmacy.

Pass Marks.

A = 97.
 B = 90.
 C = 80.
 K = 72.

Non-pass Marks.

F = below 70 = failure.
 W = withdrawal after fourth week, the work being passing up to that time
 Inc. = incomplete.
 con. = incomplete (not made up the following semester or arranged for, and for this a K grade only can be given.

12. Des Moines University, College of Pharmacy.

Pass Marks.

A = excellent = 93-100.
 B = good = 85-92.
 C = fair = 77-84.
 D = passing = 70-76.

A system of honor points is used.

Non-pass Marks.

E = condition = 60-69.
 F = failure = below 60.
 I = incomplete.

III. SYSTEMS OF THREE LETTERS FOR PASSING WORK.

a. Without numerical significance.

1. University of Mississippi, School of Pharmacy.

Pass Marks.

A = excellent.
 B = medium.
 C = passing.

Non-pass Marks.

D = failure on which re-examination may be granted by the professor.
 F = failure.

b. *With numerical significance.*

1. Philadelphia College of Pharmacy and Science.

Pass Marks.

A = 90-100.

B = 80-90.

C = 70-80.

Non-pass Marks.

D = 60-70.

E = 50-60.

The passing grade of all subjects of the freshman, sophomore and junior year is 70. The passing grade for all subjects of the graduating year is 75.

2. Medical College of Virginia, School of Pharmacy.

Pass Marks.

A = 96-100.

B = 90-95.

C = 80-89.

Non-pass Marks.

D = 70-79.

E = below 70.

3. University of Oklahoma, School of Pharmacy.

Pass Marks.

A = 95-100.

A - = 90-95.

B = 85-90.

B - = 80-85.

C = 75-80.

C - = 70-75.

Non-pass Marks.

I = failure to take some examination on account of some reasonable excuse.

D = failure on final, with passing grades before, or where average is between 65-70.

F = failed the course.

4. Creighton University, College of Pharmacy.

Pass Marks.

A = 90-100.

B = 80-89.

C = 75-79.

Non-pass Marks.

D = condition = below 75.
failure (no symbol).

5. Louisville College of Pharmacy.

Pass Marks.

A = 95-100.

B = 85-94.

C = 75-84.

Non-pass Marks.

D = 60-74 = condition.

F = below 60 = failure.

I = incompleting.

6. Western Reserve University, School of Pharmacy.

Pass Marks.

E = excellent = 90-100.

G = good = 80-89.

F = fair = 70-79.

Non-pass Marks.

D = conditioned = 60-69 (or if the final exam. grade is below 60 and the term average is 70 or above.

X = failed = below 60.

7. Medical College of the State of South Carolina, School of Pharmacy.

Pass Marks.

A = excellent = 95-100.

B = good = 85-94.

C = satisfactory = 75-84.

Non-pass Marks.

D = condition = 0-74.

8. Detroit Institute of Technology, College of Pharmacy and Chemistry.

Pass Marks.

A = excellent = 90-100%.

B = good = 80-89.

C = passed = 70-79.

Non-pass Marks.

D = conditional = 60-69 (work may be made up by another examination, but cannot receive a grade higher than C).

E = failed = 50-59.

9. New Jersey College of Pharmacy.

Pass Marks.

A = 90-100.

B = 80-89.

C = 75-79.

Non-pass Marks.

D = 60-74.

F = below 60.

IV. SYSTEMS FOR ONE LETTER (OR WORD) FOR PASSING WORK.

1. St. Louis College of Pharmacy.

Pass Marks: Satisfactory. *Non-pass Marks:* Failure.

On written reviews students receive grades in letters as follows: A = 90-100, B = 80-89, and so on down the alphabet. The passing grade is 75%.

V. SYSTEMS BASED ON NUMBERS ONLY

1. Meharry Medical College, Department of Pharmacy.

Passing Grade: 80 per cent. One re-examination is allowed.

2. Massachusetts College of Pharmacy.

Passing Grade: 75 per cent.

An average of at least 70 per cent is required for admission to the final examination in each subject. Not more than two examinations are allowed for removal of conditions.

3. North Pacific College of Pharmacy.

Passing Grade: 75 per cent. *Non-pass Marks:* Inc. = incomplete.

C = condition.

F = failure.

4. University of Pittsburgh, Pittsburgh College of Pharmacy.

Passing Grade: 75 per cent average with not less than 60 per cent in any one subject.

5. University of Maryland, School of Pharmacy.

Passing Grade: 75 per cent. *Non-pass Marks:* 50-74% = condition.

Below 50% = failure.

6. Loyola University, New Orleans College of Pharmacy.

Passing Grade: 75. *Non-pass Marks:* 60-74 = condition.

Below 60 = failure.

7. University of Florida, College of Pharmacy.

Passing Grade: 75.

On a grade of 60-74 one re-examination is allowed, on which a grade of 85 per cent or more must be made in order to secure credit for the course.

8. North Dakota Agricultural College, School of Pharmacy.

Passing Grade: 70. *Non-pass Marks:* 60-70 = conditional, below 60 = failure.

9. West Virginia University, Medical School, Dept. of Pharmacy.

Passing Grade: 70 per cent. *Non-pass Marks:* 60-70% = condition.

Below 60% = failure.

10. Tulane University of Louisiana, School of Pharmacy.

Passing Grade: 70 per cent.

11. University of Notre Dame, School of Pharmacy.

Passing Grade: 70.*Non-pass Marks:* 60-69 = conditional (*i. e.*, may obtain a grade of 70 by passing an examination for the removal of conditions). 59 and lower = failed (must repeat semester's work). Fc. = failed on account of cuts (*i. e.*, exceeding the number of unexcused absences allowed for semester).

12. University of Colorado, College of Pharmacy.

Passing Grade: 70 per cent. *Non-pass Marks:* 60-69% = inc., conditioned.
Below 60% = failure.

13. University of Nebraska, College of Pharmacy.

Passing Grade: 60 per cent. *Non-pass Marks:* 50-60% = C = condition.
I = incomplete
Below 50% = F = failure.
A = dropped in good standing.
D = dropped in bad standing.

14. Alabama Polytechnic Institute, Dept. of Pharmacy.

Passing Grade: 60. *Non-passing Marks:* 50-60 = conditional, subject to reëxamination.
Below 50 = failure.

A quality point system is used.

University of the Philippines, School of Pharmacy.—No report.

*Uniform system recommended by committee on curriculum and teaching methods.**Pass Marks:*A = a mark of distinction.
B = for superior work, clearly above the average.
C = average.
D = lowest passing mark.*Non-pass Marks:*Ex. = excused.
Inc. = incomplete.
Fd. = failed.
Cond. = conditional pass.
Abs. = absence from last meeting of class.
Lt. = left.

LIBRARIES.

The interest in libraries and in having them serve in a larger way is evident in the gift of the Carnegie Corporation for the training of librarians—it emphasizes the importance of the librarian on whom the serviceableness of a library largely depends. The relationship of the librarian to the library is not so different from that of the teacher and the school. Quoting an editorial of the *New York Times* of recent date, "the Carnegie Corporation has been making grants to agencies concerned with library service, but it has now adopted a definite program for a ten-year period under which library schools and library organizations will receive endowments in such amounts as to enable them to carry on their work without anxiety or renewed calls upon the corporation. It is proposed, in the first place, to endow a li-

brary school in connection with some university which would do for the library profession what the Johns Hopkins Medical School and the Harvard Law School have done for medicine and law."

Further activities are expected to come into fruition because of the fiftieth anniversary of the founding of this library organization, such as helping small libraries throughout the United States, providing building plans, giving bibliographical aid, etc.

There also is an evident interest among members of the drug activities in the A. PH. A. Headquarters, because of the provision for a library, and while the thought has no foundation except the opportunities for service, it may be within reason to expect encouragement from sources without the drug trade activities for the Headquarters, because it will have a service library.

PROGRAM FOR THE TWENTY-SIXTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY, BELLEVUE STRATFORD HOTEL, PHILADELPHIA, PA.

SEPTEMBER 13-14, 1926.

Monday, September 13, 10:00 A.M.

Teachers Conferences.

Chemistry Section—Prof. C. C. Glover, *Chairman*.

Pharmaceutical Section—Prof. J. C. Krantz, *Chairman*.

Materia Medica Section—Dean R. A. Lyman, *Chairman*.

Monday, September 13, 2:00 P.M.

Continuation of Teachers Conferences.

First General Session—Monday, September 13, 3:00 P.M.

Roll call.

President's Address—Dean E. H. Kraus.

Report of Secretary-Treasurer—Prof. Zada M. Cooper.

Report of Executive Committee—Dean C. B. Jordan.

Appointment of Nominating Committee.

Report of Committee on High Educational Standards—Dean D. B. R. Johnson.

Paper, Merchandising Courses—Prof. J. G. Beard.

Report of Committee on Curriculum and Teaching Methods—Dean W. J. Teeters.

Report of Committee on Activities of Students of Alumni—Prof. J. B. Burt.

Report of Committee on Research—Dr. Arno Viehoveer.

Report of Committee on Investigation of Pharmacy Schools by Carnegie Foundation—
Dean W. F. Rudd.

Second General Session—Monday, September 13, 8:00 P.M.

Report of Committee on Curriculum—Dean C. W. Johnson.

Report of Committee on Relation of Boards & Colleges—Dean C. B. Jordan.

Address by Dr. Edgar Fahs Smith.

Report of Committee on Standards for Classification of Colleges—Dean D. B. R. Johnson.

Report of Representative to Drug Trade Bureau of Public Information—Dean W. F. Rudd.

Paper—Rating Scale for Instructors—Dean C. B. Jordan.

Report of Representative to Board of Botanical Abstracts—Prof. E. N. Gathercoal.

Report of Representative to National Conference of Pharmaceutical Research—Dean
J. A. Koch.

Joint Session with N. A. B. P.—Tuesday, September 14, 9:00 A.M.

Third General Session—Tuesday, September 14, 2:30 P.M.

Report of Representative to N. A. R. D.—Dean A. R. Bliss.

Report of Committee to Conference on Narcotic Education.

Report of Delegates to National Drug Trade Conference—Dean W. F. Rudd.

Unfinished Business.

Miscellaneous.

New Business.

Executive Session.

Adjournment.

Tuesday, September 14, 6:00 P.M.

Annual Dinner of American Association of Colleges of Pharmacy.

Surgeon—General Hugh S. Cumming of the U. S. Public Health Service will give the principal address.

(All are welcome. Make reservations by consulting Dean C. B. Jordan.)

PROGRAM, SEMINAR OF PHARMACY TEACHERS.

Teaching Demonstrations	{	Emulsions—Adley B. Nichols. Prescriptions—G. A. Bergy. Subject to be announced.—Clyde M. Snow.
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CENSUS OF PHARMACEUTICAL RESEARCH, 1926.

BY H. V. ARNY.*

The Census of Pharmaceutical Research published in the JOURNAL of last year (See JOURNAL, May, 1925, page 434) created so much interest that the Conference on Pharmaceutical Research at its 1925 meeting, held in Des Moines, directed that such a census become an annual feature of our work and on the pages which follow this introduction are listed the names of 297 research workers and the subjects upon which they are working.

The questionnaire sent out was similar to that issued in 1925 and was mailed to all persons whose names were given in the 1925 census as well as to a number of the persons who were not obtained for the 1925 census.

Of the 239 persons listed in the 1925 census, 75 are not listed in the present census of 1926. Three of these, Messrs. A. B. Lyons, L. E. Sayre and L. R. Wagener have passed on to their reward. Some half dozen have written that they are not at present engaged in pharmaceutical research work, while the others have failed to respond despite the sending of two "follow-up" letters. In most cases, the persons just mentioned have either finished their thesis work at colleges and have not yet located in a place with facilities for research or else they have changed their industrial positions, leaving the laboratory where they were listed as research workers.

Despite the loss of these 75, the Census of 1926 contains 58 more names than the Census of 1925, that of 1925 containing 239 names, while that of 1926 contains 297 names. It is a matter of distinct gratification that all save two of the great pharmaceutical manufacturing plants are represented in the 1926 list; while several of the colleges not listed in 1925 have sent in adequate lists for insertion in the Census of 1926.

The 297 research workers recorded on the pages which follow may be classified as follows:

Hospital pharmacists.....	4
Retail pharmacists.....	9
Pharmacists, engaged in medical school and chemical school work..	5
Governmental scientists, doing pharmaceutical research.....	14
Non-pharmaceutical teachers and their students doing pharmaceutical research (chiefly on the synthesis of medicinal chemicals).....	31
Manufacturing pharmacists.....	97
Pharmaceutical teachers and their students.....	137
TOTAL	297

The index figures indicating coöperative work are given, this year, only in those cases where the names of persons were furnished by directors of laboratories and not by the persons themselves.

* Chairman, National Conference on Pharmaceutical Research.

CENSUS OF PHARMACEUTICAL RESEARCH.
Index numbers intended to indicate coöperative work.

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2	Adams, Roger	Chemistry Bldg., Univ. Ill.	Urbana, Ill.	Chaulmoogric acid derivatives	See Nos. 49, 113, 191, 225 and 293
3	Amin, H.	College Pharmacy Univ of N. C.	Chapel Hill, N. C.	Transparent soaps from hydrogenated oils	See No. 151
4	Amrhein, F. J.	Mass. College Pharmacy	Boston, Mass.	Colorimetric assay of hydrocyanic acid	See Nos. 1, 184 and 236
5	Ariizumi, K.	College Pharmacy, Univ. Wash.	Seattle, Wash.	Effect of iron on organic iron salts	See No. 164
6	Aray, H. V.	College Pharmacy Columbia Univ.	New York, N. Y.	Colorimetric tests with standardized colored fluids	
7	Austin, R. L.	College Pharmacy, Univ. Iowa	Iowa City, Iowa	Cod liver oil as base for ointment of mercuric nitrate	See No. 43
8	Bacon, F. J.	College Pharmacy, Univ. Fla.	Gainesville, Fla.	Digitalis. Medicinal plants of Florida Mint culture in Florida	
9	Balandra, F. J.	Mass. College Pharmacy	Boston, Mass.	Quantitative microscopic analysis	See No. 294
10	Ballard, C. W.	College Pharmacy, Columbia Univ.	New York, N. Y.	Structural variations in erythroxyton leaves	
11	Barrett, L.	College Pharmacy Duquesne Univ.	Pittsburgh, Pa.	Commonwealth study of pharmacy	
12	Base, Daniel	Hynson, Westcott & Dunning	Baltimore, Md.	See Dunning	
13	Beal, G. D.	Chemistry Bldg., Univ. of Illinois	Urbana, Ill.	Medicinal fats Anthraquinone drugs Quantitative alkaloid reagents	See Nos. 137, 171, 234, 269 and 284
14	Bebie, Jules	Monsanto Chemical Works	St. Louis, Mo.	Stability of local anesthetics with changes in pH	
15	Beringer, G. M.	Retail pharmacy	Camden, N. J.	U.S.P. and N.F. revision problems	
16	Biddy, O. D.	College Pharmacy, Univ. of N. C.	Chapel Hill, N. C.	Poison ivy remedies	See No. 123
17	Bliss, A. R.	Medical College, Univ. Tenn.	Memphis, Tenn.	Pharmacological and chemical studies	See No. 279
18	Blumenschein, F. J.	College Pharmacy, Univ. Pittsburgh	Pittsburgh, Pa.	Pharmaceutical uses of bentonite	See Nos. 144 and 238
19	Boardman, Beda	College Pharmacy, Univ. Wis.	Madison, Wis.	Wax	See No. 150
20	Bodansky, A.	Upjohn Co.	Kalamazoo, Mich.	Pharmacology of the endocrines	See No. 112
21	Bogert, M. T.	Dept. Chemistry, Columbia Univ.	New York, N. Y.	Synthesis of medicinal chemicals	Has 18 co-workers
22	Bonisteel, W. J.	College Pharmacy, Fordham Univ.	New York, N. Y.	Columbian cinchonas	See No. 198
23	Bowers, H. R.	College Pharmacy, Univ. Mich.	Ann Arbor, Mich.	Coöperative drug assay work	
24	Bradford, Caty	College Pharmacy, Univ. Wash.	Seattle, Wash.	Syrups of calcium iodide and ferrous iodide	See No. 152
25	Bradley, T. J.	Mass. College Pharmacy	Boston, Mass.	U. S. P. revision problems	
26	Braun, H. A.	College Pharmacy, Univ. Wis.	Madison, Wis.	Biochemistry of <i>Mentha canadensis</i>	See No. 150
27	Broady, Pell	College Pharmacy, Purdue Univ.	West Lafayette, Ind.	Precipitates of the U.S.P.	See No. 133
28	Browne, C. A.	Bureau of Chem.	Washington, D. C.	Chemical, biological and pharmacological research	
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31	Bye, Mortimer	Frederick Stearns & Co.	Detroit, Mich.	Benzyl compounds Insulin Bio-assays, etc.	See Nos. 57, 163, 193 and 203
32	Cain, Russell	College Pharmacy, Univ. Wash.	Seattle, Wash.	Oil of Ledum Groenlandicum	See No. 164
33	Carter, E. B.	Swan-Myers Co.	Indianapolis, Ind.	Biological research	
34	Casely, R. E.	College Pharmacy, Univ. Wis.	Madison, Wis.	Synthetic glucosides of phenols	See No. 150
35	Caspe, Sol.	H. A. Metz & Co.	New York, N. Y.	See Dubin	
36	Cawley, Ellen	Phil. Coll. Pharm. & Science	Philadelphia, Pa.	Digitalis	See No. 276
37	Chen, S. Y.	College Pharmacy, Univ. Wis.	Madison, Wis.	Witherington's ointment	See No. 150
38	Chestnut, V. H.	Bureau of Chemistry	Washington, D. C.	Non-volatile constituents of the cotton plant	See No. 204
39	Christensen, B. U.	College Pharmacy, Univ. Wis.	Madison, Wis.	Chalk and other forms of calcium carbonate	See No. 150
40	Clark, A. H.	College Pharmacy, Univ. Ill.	Chicago, Ill.	Organic mercurial medic- inals	See Nos. 50, 281 and 285
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42	Cook, Richard	College Pharmacy, Univ. Wash.	Seattle, Wash.	Mountain ash berries	See No. 164
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44	Corbitt, H. B.	H. A. Metz & Co.	New York, N. Y.	Sulfur compounds as antidotes to metallic poisons	See No. 58
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47	Culley, John	Retail pharmacy	Ogden, Utah	U. S. P. revision problems	
48	Darbaker, L. K.	College Pharmacy, Univ. Pittsburgh	Pittsburgh, Pa.	Bacterial problems	See Nos. 144, 170 and 266
49	Davies, Letta	Chemistry Bldg., Univ. Ill.	Urbana, Ill.	Chaulmoogric acid de- rivatives	See No. 2
50	Davis, H. L.	College Pharmacy, Univ. Ill.	Chicago, Ill.	Acetophenone and its de- rivatives	See No. 40
51	Dessemontet, E.	Lehn & Fink	Bloomfield, N. J.	Influence of certain salts on conversion of hemo- globin into methemo- globin Studies of the saliva	See Nos. 53 and 271
52	Diner, Jacob	College Pharmacy, Fordham Univ.	New York, N. Y.	Action of pancreatin on normal and diabetic animals	See No. 120
53	Dittmar, M.	Lehn & Fink	Bloomfield, N. J.	General research prob- lems	See Nos. 51, 219, 227, 239 and 252
54	Dohme, A. R. L.	Sharp & Dohme	Baltimore, Md.	Acyl and alkyl deriva- tives of resorcinol	See Nos. 64, 90, 92 and 175
55	Dorjahn, J. A.	College Pharmacy, Univ. Ill.	Chicago, Ill.	Effect of heat on traga- canth mucilages	See Nos. 75 and 288
56	Dox, A. W.	Parke, Davis & Co.	Detroit, Mich.	Synthetic hypnotics	
57	Dox, Howard	Fred. Stearns & Co.	Detroit, Mich.	Drug assaying	See No. 31
58	Dubin, H. E.	H. A. Metz & Co.	New York, N. Y.	Active principles of cod liver oil Synthetic odd-carbon fats in diabetes	See Nos. 35 and 44
59	DuMez, A. G.	College Pharmacy, Univ. Md.	Baltimore, Md.	Studies in drug addiction U. S. P. revision problems	
60	Dunning, H. A. B.	Hynson, Westcott & Dunning	Baltimore, Md.	Local and general anti- septics Diagnostic tests	See Nos. 100, 253 and 286

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62	Eldridge, R. W.	Sterling Chem. Lab., Yale University	New Haven, Conn.	Local anesthetics	See No. 114
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70	Foote, P. A.	College Pharmacy, Univ. Wis.	Madison, Wis.	Tablets	See No. 150
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72	Frank, H. P.		Philadelphia, Pa.	Commonwealth study of pharmacy	See No. 159
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75	Gathercoal, E. N.	College Pharmacy, Univ. Illinois	Chicago, Ill.	Evaluation of cascara	See Nos. 55 and 288
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78	Gilman, Henry	Dept. of Chemistry, Iowa State Coll.	Ames, Iowa	Local anesthetics Antiseptics	See Nos. 110 and 275
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83	Goeckel, Leah G.	Private Lab.	Cranford, N. J.	Chemico - pathological and biological research	
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189	Newcomb, E. L.	National Wholesale Druggists Assn.	New York, N. Y.	U. S. P. and N. F. revision problems	
190	Nitardy, F. W.	E. R. Squibb & Sons	New York, N. Y.	Pharmaceuticals Phytochemistry	See Nos. 76, 87, 132, 138, 146, 177, 180, 186, 199, 213, 217, 245, 250 and 259
191	Noller, C. R.	Chemistry Bldg., Univ. Ill.	Urbana, Ill.	Chaulmoogric acid derivatives	See No. 2
192	North, H. B.	Parke, Davis & Co.	Detroit, Mich.	Parathyroid glands and calcium metabolism	See No. 116
193	Palen, Henry	Frederick Stearns & Co.	Detroit, Mich.	Digestive ferments	See No. 31
194	Paul, A. E.	U. S. Food & Drug Lab.	Chicago, Ill.	Drug identifications and assays	
195	Pauley, A. W.	St. Louis College Pharmacy	St. Louis, Mo.	Survey of drug store conditions	
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197	Pfund, Marion	Sterling Chem. Laboratory, Yale University	New Haven, Conn.	Iodine compounds	See No. 114
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199	Pierce, J. A.	E. R. Squibb & Sons	New York, N. Y.	Manufacture of nuxvomica preparations by methods of U. S. P. X	See No. 190
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202	Pittenger, P. A.	Harvey Pittenger Co.	Philadelphia, Pa.	Manufacture of desiccated glandular products Bio-assay of apocynum Study of sterile solutions	See No 106
203	Pitz, Walter	Frederick Stearns & Co.	Detroit, Mich.	Insulin Bio-assays	See No. 31
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211	Rhodes, Leonard	College Pharmacy, Univ. Wash.	Seattle, Wash.	Assay of alcohol in pharmaceuticals	See No. 164
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214	Rising, L. W.	College Pharmacy, Univ. Wash.	Seattle, Wash.	Hypnotics of the barbituric series	See No. 164
215	Robinson, Paul	Sterling Chem. Laboratory Yale University	New Haven, Conn.	Local anesthetics	See No. 114
216	Rogers, C. H.	College Pharmacy, Univ. Minnesota	Minneapolis, Minn.	Colorimetric assay of vanillin Assay of spirit of peppermint	See No. 188
217	Rosenberg, F.	E. R. Squibb & Sons	New York, N. Y.	Constituents of cascara	See No. 190
218	Rosin, Joseph	Powers, Weightman-Rosengarten Co.	Philadelphia, Pa.	Standardization of medicinal and reagent chemicals	
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220	Rottluff, K. M.	College Pharmacy, Univ. Kansas	Lawrence, Kans.	Study of antiseptics Cigarettes	See No. 109
221	Rowe, L. W.	Parke, Davis & Co.	Detroit, Mich.	Bio-assay methods	
222	Ruddiman, E. A.	J. T. Milliken Co.	St. Louis, Mo.	Toxicity of mixtures of quinine and aspirin	
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224	Saalbach, Louis	College Pharmacy, Univ. Pittsburgh	Pittsburgh, Pa.	Commonwealth study of Pharmacy	
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228	Schaefer, Florence	Sterling Chem. Laboratory, Yale Univ.	New Haven, Conn.	Iodo-phenol combinations	See No. 131
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234	Scroggie, A. G.	Dept. of Chemistry, Univ. Ill.	Urbana, Ill.	Silicotungstic acid	See No. 13.
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243	Sister M. Dolo- rosa	College Pharmacy, Univ. Pittsburgh	Pittsburgh, Pa.	Studies of the urease as- say of urea	See Nos. 144 and 209
244	Sister M. Sal- ome	College Pharmacy, Univ. Pittsburgh	Pittsburgh, Pa.	Studies of the urease as- say of urea	See Nos. 144 and 209
245	Smith, R. B.	E. R. Squibb & Sons	New York, N. Y.	See Giesy	
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248	Snyder, J. P.	Norwich Pharmaca- l Co.	Norwich, N. Y.	Analytic standards for hypodermic tablets	
249	Spevakow, N.	Digestive Ferments Co.	Detroit, Mich.	See Graber	
250	Stadholz, B.	E. R. Squibb & Sons	New York, N. Y.	See Tapley	
251	Sterling, Chas.	College Pharmacy, Univ. Kansas	Lawrence, Kans.	U. S. P. microscopic prob- lems	See No. 109
252	Stern, J. T.	Lehn & Fink	Bloomfield, N. J.	Pharmacology of potas- sium chlorate Studies of the saliva Glandular products	See Nos. 53 and 271 See No. 60
253	Stickels, A. E.	Hynson, Westcott & Dunning	Baltimore, Md.	Organic synthesis	
254	Stocking, C. H.	College Pharmacy, Univ. Michigan	Ann Arbor, Mich.	Co-operative drug assay work	
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261	Taub, Harry	College Pharmacy, Columbia Univ.	New York, N. Y.	Micro-chemical methods as applied to cosmetic analyses	
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264	Taylor, H. M.	College Pharmacy, Univ. of N. C.	Chapel Hill, N. C.	<i>Liatrissima odorata</i>	See No. 123
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273	Valenzuela, P.	College Pharmacy, Univ. Wisconsin	Madison, Wis.	Chemistry of Philippine ginger	See No. 150
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278	Volweiler, E. H.	Abbott Laboratories	Chicago, Ill.	Problems in synthetic chemical medicaments	See Nos. 99, 257 and 277
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284	Watson, W. A.	Dept. of Chemistry, Univ. Ill.	Urbana, Ill.	Glucosides of rhubarb	See No. 13
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287	Williams, J. A.	Parke, Davis & Co.	Detroit, Mich.	Drug assays and their variations	See No. 262
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291	Wulling, F. J.	College Pharmacy, Univ. Minnesota	Minneapolis, Minn.	Educational r e s e a r c h problems	
292	Wyckoff, Lillian	Sterling Chem. Labo- ratory, Yale Univ.	New Haven, Conn.	Hypnotics	See No. 114
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A HALF CENTURY OF THE NATIONAL FORMULARY 1880-1930.
TITLES, SYNONYMS AND ABBREVIATIONS.

BY H. A. LANGENHAN.*

PREFATORY REMARKS.

In the course of the study of the U. S. Pharmacopœia, a complete index of the titles, synonyms and abbreviations of all revisions since and including the edition of 1820 was prepared. This was published by the *University of Wisconsin Pharmaceutical Experiment Station* under the title "One Hundred Years of the U. S. Pharmacopœia 1820-1920, Titles, Synonyms and Abbreviations." Transfers from the U. S. P. to the N. F. and vice versa were indicated in the footnotes. This necessitated an index of a similar nature of the first four editions of the National Formulary. With the appearance of the N. F. V, a half century of the N. F. has been completed and it was deemed feasible to complete the index as a supplement to the first one. Transfers from the N. F. to the U. S. P. or, vice versa, are again included and as a result the "official" history of many items covers a century.

The two compilations have been found to be of no little assistance in teaching pharmacy by those who have had access to both and the feeling prevailed that other teachers might find the two equally useful.

The numbers at the top of the columns indicate the date of the decennial revision. The date of impression is not used as this is confusing and offers no special advantage. Hence the year of the Convention of the Pharmacopœia is given as this also represents that of the N. F. Thus the first number 20 represents 1820 and the last number 20 represents 1920. In the case of the 1830 conventions, the number with the asterisk indicates the Pharmacopœia published by the New York convention, the other that of the Philadelphia convention. The capitals in the columns stand for, Latin title (L), English title (E), Synonym (S), Abbreviation (A). The principal order of the primes is the alphabetical order of the Latin titles of the latest edition in which that title (not necessarily item) is official. Thus, *e. g.*, *Aqua Sedativa* is replaced by *Lotio Ammoniacalis Camphorata*. Changes in official Latin titles, also interchanges with the U. S. P., are recorded in the footnotes.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
ACETUM AROMATICUM								L	L	L	L	L
Aromatic Vinegar.....								E	E	E	E	E
Acet. Arom.....											A	A
ACETUM LOBELIÆ								I	I	I	L	L
Vinegar of Lobelia.....											E	E
ACETUM OPII	2	2	2	2	2	2	2	2	2	2	L	
Vinegar of Opium.....											E	
Acet. Opii.....											A	

* Associate Professor of Pharmacy, University of Washington College of Pharmacy.

† The dates of the revisions of the U. S. Pharmacopœia are given and the National Formulary which most closely correspond, thus the column under 1910 refers to N. F. IV and 1920 to N. F. V., etc. References to the U. S. P. titles are designated by numerals; those to the National Formulary by lower case letters, in neither case by superior numerals or letters. Other explanations will be found in Prefatory Remarks.

1—See **ACETUM LOBELIÆ**, U. S. P.

2—See **ACETUM OPII**, U. S. P.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
ACETUM SANGUINARIÆ						3	3	3	L	L	..	..
Vinegar of Sanguinaria.....									E	E	..	..
ACIDUM CITRICUM SACCHARATUM									L	L	..	..
Saccharated Citric Acid.....									E	E	..	..
ACIDUM HYPOPHOSPHOROSUM DILUTUM									L	L	4	4
Diluted Hypophosphorous Acid.....									E	E	..	..
ACIDUM METAPHOSPHORICUM DILUTUM									L	L	L	..
Diluted Metaphosphoric Acid.....									E	E	E	..
Acidum Phosphoricum Glaciale Dilutum.....									S	S	S	..
Dil. Glacial Phosphoric Acid.....									S	S	S	..
ACIDUM TARTARICUM SACCHARATUM									L	L	..	..
Saccharated Tartaric Acid.....									E	E	..	..
AMPULLÆ CAFFEINÆ SODIO-BENZOATIS												L
Ampuls of Caffein Sodio-Benzoate.....												E
Ampul. Caff. Sod.-Benz.....												A
AMPULLÆ CAMPHORÆ												L
Ampuls of Camphor.....												E
AMPULLÆ EMETINÆ HYDROCHLORIDI												L
Ampuls of Emetine Hydrochloride.....												E
Ampul. Emet. Hydrochl.....												A
AMPULLÆ IODI												L
Ampuls of Iodine.....												E
Iodine Swabs.....												S
Ampul. Iodi.....												A
AMPULLÆ QUININÆ ET UREÆ HYDRO- CHLORIDI												L
Ampuls of quinine and Urea Hydrochloride.....												E
Ampul. Quin. et Urea. Hydrochl.....												A
AMPULLÆ QUININÆ DIHYDROCHLORIDI												L
Ampuls of Quinine Dihydrochloride.....												E
Ampul. Quin. Dihydrochl.....												A
AMPULLÆ SODII CACODYLATIS												L
Ampuls of Sodium Cacodylate.....												E
Ampul. Sod. Cacodyl.....												A
AMYLUM IODATUM								5	L	L	..	..
Iodized Starch.....									E	E	..	..
AQUA CHLOROFORMI									L	6	6	6
Chloroform Water.....									E	..	..	..
AQUA HAMAMELIDES									L	7	7	L
Hamamelis Water.....									E	E	..	E
Witchhazel Water.....									S	S	..	S
Witchhazel Extract.....									S	S	..	..
AQUA HAMAMELIDES									L	..	..	..
Distilled Extract of Witch Hazel.....												S
Aq. Hamam.....												A
AQUA PHENOLATA								8	..	..	L	L
Phenolated Water.....											E	E
Carbolic Acid Water.....											S	S

3—See ACETUM SANGUINARIÆ, U. S. P.

4—See ACIDUM HYPOPHOSPHORUM DILUTUM, U. S. P.

5—See AMYLUM IODATUM, U. S. P.

6—See AQUA CHLOROFORMII, U. S. P.

7—See AQUA HAMAMELIDES, U. S. P.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
Phenoli Solutio P. I.											S	S
Aq. Phenol.												A
AQUA SEDATIVA								L	L	L	a	a
Sedative Water								E	E	E		
Lotio Ammoniacalis Camphorata								S	S	S		
Eau Sédative de Raspail								S	S	S		
BALSAMUM TRAUMATICUM								L	L	L		
Traumatic Balsam								E	E	E		
Turlingtons Balsam								S	S	S		
Friars Balsam								S	S	S		
BISMUTHI OXIDUM HYDRATUM								L	L	L		
Hydrated Oxide of Bismuth								E	E	E		
BOROGLYCERINUM								L	L	L		
Boroglycerin								E	E	E		
Glyceryl Borate								S	S	S		
Boroglyceride								S	S	S		
CAFFEINÆ CITRAS EFFERVESCENS								L	9	9	9	
Effervescent Citrate of Caffein								E				
CAFFEINÆ SODIO-BENZOAS								L	L	L	10	10
Caffeine Sodio-Benzoate								E	E	E		
CAFFEINÆ SODIO SALICYLAS								L	L	L	L	L
Caffeine Sodio Salicylate								E	E	E	E	E
Caff. Sod.-Sal.											A	A
CARBASUS CARBOLATA								L	L			
Carbolized Gauze								E	E			
CARBASUS IODOFORMATA								L	L			
Iodoform Gauze								E	E			
CATAPLASMA KAOLINI										11	L	L
Cataplasm of Kaolin											E	E
Catapl. Kaolin											A	A
CERATUM CAMPHORÆ								12	12	12	L	L
Camphor Cerate											E	E
Cerat. Camph.												A
CERATUM CAMPHORÆ COMPOSITUM								L	L	L		
Compound Camphor Cerate								E	E	E		
Ceratum Camphoratum								S	S	S		
Camphor Ice								S	S	S		
CERATUM CETACEI		13		13	13	13	13	13	13	13	L	
Spermaceti Cerate											E	
CERATUM EXTRACTI CANTHARIDIS							14	14	14	L	L	
Cerate of Extract of Cantharides											E	E
CERATUM PLUMBI SUBACETATIS		15	15	15	15	15	15	15	15	15	15	L
Cerate of Lead Subacetate												E
Goulard's Cerate												S

8—See **AQUA ACIDI CARBOLICI**, U. S. P.
 a—See **LOTIO AMMONIACALIS CAMPHORATA**, N. F.
 9—See **CAFFEINÆ CITRAS EFFERVESCENS**, U. S. P.
 10—See **CAFFEINÆ SODIO BENZOAS**, U. S. P.
 11—See **CATAPLASMA KAOLINI**, U. S. P.
 12—See **CERATUM CAMPHORÆ**, U. S. P.
 13—See **CERATUM CETACEI**, U. S. P.
 14—See **CERATUM EXTRACTI CANTHARIDES**, U. S. P.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†										10	20	
	20	30	30*	40	50	60	70	80	90	00			
Cerat. Plumb. Subacet.												A	A
CERATUM RESINÆ COMPOSITUM	16	16	16	16	16	16	16				16	L	L
Compound Rosin Cerate.....												E	E
Deshler's Salve.....												S	S
Cerat. Resin. Co.												A	A
CERATUM SABINÆ	17	17	17	17	17	17	17	17	L	L			
Savine Cerate.....									E	E			
CHARTA CANTHARIDIS								18	18	L	L		
Cantharides Paper.....									E	E			
CHARTA POTASSII NITRATIS									19	19	L	L	L
Potassium Nitrate Papers.....											E	E	E
Chart. Pot. Nit.....												A	A
CHLORAL CAMPHORATUM									L	L	L	L	L
Camphorated Chloral.....									E	E	E	E	E
Chloral et Camphora.....									S	S	S		
Chloral and Camphor.....									S	S	S		
Chloral Camph.....												A	A
COLLODION BITUMINIS SULPHONATI													L
Collodion of Sulphonated Bitumen.....													E
Collod. Bitum. Sulphon.....													A
COLLODIUM IODI													L
Iodine Collodion.....													E
COLLODIUM IODATUM									L	L	L		
Iodized Collodion.....									E	E	E		
Collod. Iodi.....													A
COLLODIUM IODOFORMI													L
Iodoform Collodion.....									E	E	E	E	
COLLODIUM IODOFORMATUM									L	L	L		
Collod. Iodof.....													A
COLLODIUM SALICYLICUM COMPOSITUM													L
Compound Salicylic Collodion.....													E
COLLODIUM SALICYLATUM COMPOSITUM									L	L	L		
Compound Salicylated Collodion.....									E	E	E		
Corn Collodion.....									S	S	S		
Collod. Sal. Co.....													A
COLLODIUM STYPTICUM								20	20	20	L	L	
Styptic Collodion.....											E	E	
Collod. Stypt.....													A
COLLODIUM TIGLII									L	L	L		
Croton Oil Collodion.....									E	E	E		
Collod. Tiglii.....													A
CONFECTIO ROSÆ	21	21	21	21	21	21	21	21	21	21	21	L	L
Confection of Rose.....												E	E
Confect. Ros.....													A

15—See **CERATUM PLUMBI SUBACETATIS**, U. S. P.

16—See **CERATUM RESINÆ COMPOSITUM**, U. S. P.

17—See **CERATUM SABINÆ**, U. S. P.

18—See **CHARTA CANTHARIDIS**, U. S. P.

19—See **CHARTA POTASSII NITRATIS**, U. S. P.

20—See **COLLODIUM STYPTICUM**, U. S. P.

21—See **CONFECTIO ROSÆ**, U. S. P.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
CONFECTIO SENNÆ	22	22	22	22	22	22	22	22	22	22	L	L
Confection of Senna.....											E	E
Confect. Senn.....											A	A
CORDIALE RUBI FRUCTUS								L	L	L	L	..
Blackberry Cordial.....								E	E	E	E	..
Cord. Rubi Fruct.....											A	..
CURATIO PARAFINI												L
Paraffin Dressing.....												E
Curat. Paraf.....												A
DECOCTUM ALOES COMPOSITUM								L	L	L	..	..
Compound Decoction of Aloes.....								E	E	E	..	..
DECOCTUM CETRARIÆ	23	23	23	23	23	23	23	23	L	..	..	..
Decoction of Cetraria.....										E	..	..
DECOCTUM SARSAPARILLÆ COMPOSITUM										L	L	..
Compound Decoction of Sarsaparilla.....										E	E	..
DENTIFRICIUM												L
Dentifrice.....												E
Oxidizing Tooth Powder.....												S
Tooth Powder.....												S
Dentif.....												A
DENTILIMENTUM ACONITI COMPOSITUM												L
Compound Dental Liniment of Aconite.....												E
Dentil. Aconit. Co.....												A
DENTILINIMENTUM ACONITI ET IODI COM- POSITUM												L
Compound Dental Liniment of Aconite and Iodine.....												E
Dentil. Aconit. et Iod. Co.....												A
ELIXIR ACIDI SALICYLICI								L	L	L	..	..
Elixir of Salicylic Acid.....								E	E	E	..	..
ELIXIR ADJUVANS								L	L	..	..	..
Adjuvant Elixir.....								E	E	..	..	..
ELIXIR ALETRIDIS COMPOSITUM												L
Compound Elixir of Aletris.....												E
Elix. Aletrid. Co.....												A
ELIXIR AMMONII BROMIDI								L	L	L	L	L
Elixir of Ammonium Bromide.....								E	E	E	E	E
Elix. Ammon. Brom.....												A
ELIXIR OF AMMONII VALERATIS												L
Elixir of Ammonium Valerate.....												E
ELIXIR AMMONII VALERIANATIS								L	L	L	..	..
Elixir Ammonii Valerianatis.....												S
Elixir of Ammonium Valerianate.....								E	E	E	..	..
Elix. Ammon. Valer.....												A
ELIXIR AMMONII VALERIANATIS ET QUININÆ								L	L	L	..	..
Elixir of Ammonium Valerianate and Quinine.....								E	E	E	..	..
ELIXIR AMYGDALÆ COMPOSITUM												L
Compound Elixir of Almond.....												E
Elix. Amygdal. Co.....												A

22--See CONFECTIO SENNÆ, U. S. P.

23--See DECOCTUM CETRARIÆ, U. S. P.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
ELIXIR ANISI								L	L	L	L	L
Elixir of Anise.....								E	E	E	E	E
Aniseed Cordial.....								S	S	S	..	..
Elix. Anis.....								A	A
ELIXIR APII GRAVEOLENTIS COMP.								L	L	L	..	..
Compound Elixir of Celery.....								E	E	E	..	..
ELIXIR AROMATICUM								L	24	24	24	24
Aromatic Elixir.....								E	..	..	..	..
ELIXIR AROMATICUM RUBRUM	L	L
Red Aromatic Elixir.....								E	E
Red Elixir.....								S	S
Elix. Arom. Rub.....								A	A
ELIXIR AURANTII AMARI	b	L	L
Elixir of Bitter Orange.....								E	E
Elixir Curassao.....								S
ELIXIR BISMUTHI								L	L	L	L	..
Elixir of Bismuth.....								E	E	E	E	..
Elix. Bismuth.....								A	..
Elix. Bism.....								A
ELIXIR BROMIDORUM QUINQUE	L
Elixir of Five Bromides.....								E
Elix. Bromid. Quinq.....								A
ELIXIR BROMIDORUM TRIUM	L
Elixir Trium Bromidorum.....								S
Elixir of Three Bromides.....								E
Elix. Tri. Brom.....								A	..
Elix. Brom. Tri.....								A
ELIXIR BUCHU								L	L	L	L	L
Elixir of Buchu.....								E	E	E	E	E
Elix. Buchu.....								A	A
ELIXIR BUCHU COMPOSITUS								L	L	L	L	L
Compound Elixir of Buchu.....								E	E	E	E	E
Elix. Buchu Co.....								A	A
ELIXIR BUCHU ET POTASSII ACETATIS								L	L	L	L	L
Elixir of Buchu and Potassium Acetate.....								E	E	E	E	E
Elix. Buchu et Pot. Acet.....								A	A
ELIXIR BUCHU, JUNIPERI ET POTASSII ACETATIS	L
Elixir of Buchu, Juniper and Potassium Acetate.....								E
Elix. Buchu, Junip. et Pot. Acet.....								A
ELIXIR CAFFEINÆ								L	L	L	..	..
Elixir of Caffeine.....								E	E	E	..	..
ELIXIR CALCII BROMIDI								L	L	L	L	..
Elixir of Calcium Bromide.....								E	E	E	E	..
ELIXIR CALCII ET SODII GLYCEROPHOSPHATUM	L
Elixir of Calcium and Sodium Glycerophosphates.....								E
ELIXIR GLYCEROPHOSPHATUM	L
Elixir Glycerophosphatum.....								S

24—See **ELIXIR AROMATICUM**, U. S. P.

b—Replacing **ELIXIR CURASSAO**, **CURACAO CORDIAL**.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
Elixir of Glycerophosphates.....											E	..
Elix. Calc. et Sod. Glycerophos.....												A A
ELIXIR CALCII HYPHOSPHITIS								L	L	L	L	..
Elixir of Calcium Hypophosphate.....								E	E	E	E	..
Elix. Calc. Hypophos.....												A ..
ELIXIR CALCII LACTOPHOSPHATIS								L	L	L	L	L
Elixir of Calcium Lactophosphate.....								E	E	E	E	E
Elix. Calc. Lactophos.....												A A
ELIXIR CARDAMOMI COMPOSITUM												L L
Compound Elixir of Cardamon.....												E E
Elix. Card. Co.....												A A
ELIXIR CARNIS ET FERRI												c L
Elixir of Beef and Iron.....												E
Elix. Carn. et Ferr.....												A
ELIXIR CASCARÆ SAGRADÆ												L L
Elixir of Cascara Sagrada.....												E E E
Elixir of Cascara Sagrada.....								S				..
ELIXIR RHAMNI PURSHIANÆ								L	L	L		..
Elixir of Rhamnus Purshiana.....								E	E	E		..
Elix. Cascar. Sagr.....												A ..
Elix. Casc. Sagr.....												A
ELIXIR CASCARÆ SAGRADÆ COMPOSITUM												L L
Compound Elixir of Cascara Sagrada.....												E E E
ELIXIR RHAMNI PURSHIANÆ COMPOSITUM								L	L	L		..
Elixir Rhamni Purshianæ Compositum.....												S
Elixir Laxativum.....								S	S	S		..
Laxative Elixir.....								S	S	S	S	S
Compound Elixir of Rhamnus Purshiana.....								E				..
Elixir Purgans.....								S				..
Elix. Cascar. Sagr. Co.....												A ..
Elix. Casc. Sagr. Co.....												A
ELIXIR CATARLÆ ET FENICULI												L
Elixir of Catnip and Fennel.....												E
Elix. Catar. et Fenic.....												A
ELIXIR CATHARTICUM COMPOSITUM								L	L	L	L	L
Compound Cathartic Elixir.....								E	E	E	E	E
Elix. Cathart. Co.....												A A
ELIXIR CHLORIDORUM												L
Elixir of Chlorides.....												E
Elixir of Four Chlorides.....												S
Elix. Chlorid.....												A
ELIXIR CHLOROFORMI COMPOSITUM								L	L	L		..
Compound Elixir of Chloroform.....								E	E	E		..
ELIXIR CINCHONÆ ALKALOIDORUM												L L
Elixir of Cinchona Alkaloids.....												E E
ELIXIR CINCHONÆ								L	L	L		..
Elixir Cinchonæ.....												S ..
Elixir of Cinchona.....								E	E	E		..
Elixir Calisaya, Alkaloidal.....												S S
Elixir Calisaya.....								S	S	S		..
Compound Elixir of Quinine.....												S
Elix. Cinchon. Alk.....												A A

—Replacing VINI CARNIS ET FERRI, N. F.

N. F. Titles, Synonyms and Abbreviations.	Issues of U. S. P. and N. F.†											
	20	30	30*	40	50	60	70	80	90	00	10	20
ELIXIR CINCHONÆ ALKALOIDORUM ET FERRI...											L	L
Elixir of Cinchona Alkaloids and Iron.....											E	E
ELIXIR CINCHONÆ ET FERRI.....								L	L	L		
Elixir Cinchonæ et Ferri.....											S	
Elixir of Cinchona and Iron.....								E	E	E		
Ferrated Elixir of Calisaya, Alkaloidal.....								S	S	S	S	S
Elixir of Calisaya and Iron.....								S	S	S		
Elix. Cinchon. et Ferr.....											A	A
ELIXIR CINCHONÆ ALKALOIDORUM ET HYPO- PHOSPHITUM.....											L	
Elixir of Cinchona Alkaloids and Hypophosphites.....											E	
ELIXIR CINCHONÆ ET HYPOPHOSPHITUM.....								L	L	L		
Elixir Cinchonæ et Hypophosphitum.....											S	
Elixir of Calisaya and Hypophosphites.....								S	S	S		
Elixir of Cinchona and Hypophosphitus.....								E	E	E		
Elixir of Calisaya, Alkaloidal with Hypophosphites.....											S	
Elix. Cinchon. et Hypophos.....											A	
ELIXIR CINCHONÆ ALKALOIDORUM, FERRI, BISMUTHI ET STRYCHNINÆ.....											L	L
Elixir of Cinchona Alkaloids, Iron, Bismuth and Strych- nine.....											E	E
ELIXIR CINCHONÆ, FERRI, BISMUTHI ET STRYCHNINÆ.....								L	L	L		
Elixir Cinchonæ, Ferri, Bismuthi et Strychninæ.....											S	S
Elixir of Cinchona, Iron, Bismuth and Strychnine.....								E	E	E		
Elixir of Calisaya, Alkaloidal, with Iron, Bismuth and Strychnine.....											S	S
Elixir of Calisaya, Iron, Bismuth and Strychnine.....								S	S	S		
Elix. Cinchon. Ferr. Bism. et Strych.....											A	A
ELIXIR CINCHONÆ ALKALOIDORUM, FERRI ET BISMUTHI.....											L	
Elixir of Cinchona Alkaloids, Iron and Bismuth.....											E	
ELIXIR CINCHONÆ, FERRI ET BISMUTHI.....								L	L	L		
Elixir Cinchonæ, Ferri et Bismuthi.....											S	
Elixir of Cinchona, Iron and Bismuth.....								E	E	E		
Elixir Calisaya, Alkaloidal with Iron and Bismuth.....											S	
Elixir of Calisaya, Iron and Bismuth.....								S	S	S		
Elix. Cinchon. Ferr. et Bism.....											A	
ELIXIR CINCHONÆ ALKALOIDORUM, FERRI ET CALCII LACTOPHOSPHATIS.....											L	
Elixir of Cinchona Alkaloids, Iron and Calcium Lacto- phosphates.....											E	
ELIXIR CINCHONÆ, FERRI ET CALCII LACTO- PHOSPHATIS.....								L	L	L		
Elixir Cinchonæ, Ferri et Calcii Lactophosphatis.....											S	
Elixir of Cinchona, Iron and Calcium Lactophosphate.....								E	E	E		
Elixir of Calisaya, Alkaloidal, Iron and Lactophosphate of Lime.....											S	
Elixir of Calisaya, Iron and Lactophosphate of Lime.....								S	S	S		
Elix. Cinchon. Ferr. et Calc. Lactophos.....											A	
ELIXIR CINCHONÆ ALKALOIDORUM, FERRI ET PEPSINI.....											L	
Elixir of Cinchona Alkaloids, Iron and Pepsin.....											E	

(To be Continued)