THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

I have been asked to write an editorial for the following paper by Professor Fiero. Whether you are a teacher of pharmacognosy or of some other course in a school of pharmacy, these papers deserve your attention.

Professor Fiero's paper is on a subject of vital importance from more than one angle. What is taught in any course will determine the interest (or disgust) aroused in the student; it may affect his rating with the state board examiners and it will affect his ability to succeed in related courses.

Some of the results obtained from the questionnaire are surprising and it is regrettable that the author of this paper has not criticised them more severely. There is bound to be a variation in our teaching but what a student in New York needs is not much different from what his cousin in Chicago or Los Angeles needs. A student going to a second school for graduate work may experience a handicap by such variations in the content of our courses.—C. J. ZUFALL.

THE CONTENT OF A PHARMACOGNOSY COURSE.

GEORGE W. FIERO.*

In the syllabi of a pharmacognosy course and various textbooks on the subject, one finds a vast amount of material under this general classification. Of course, if one considers the original meaning of *pharmacognosy* (from the Greek *pharmakon* and *gnosis*—a knowledge of drugs), the amount of information which could be included is limited only by our present knowledge of pharmacy, pharmacology, phytochemistry, botany and allied sciences.

The question which confronts the instructor is "How much of this information should the prospective pharmacist know?" The course is largely factual. Educational authorities tell us that factual information is not long retained after the course is completed. There are at least 26 points concerning each of over 300 drugs. Should the student be required to commit all of this information to memory?

It would appear that the scope of the course might vary with the drug. For example, an important drug such as opium or cinchona should be treated differently from some of the unimportant drugs. Some instructors, however, treat them all alike. The New York State Syllabus divides the drugs into primary and secondary lists. Unfortunately, the amount of material to be taught concerning each of the drugs in the secondary group is too comprehensive. Some of the district meetings of boards and colleges have prepared a list of drugs upon which the graduate will be examined. It appears to the writer that it is far more important for the student to be entirely familiar with the important drugs at the expense of the unimportant ones.

In order to ascertain what pharmacognosy professors think of the relative value of the several points of information, a questionnaire was sent to them. Fifty-four replies were obtained; the results of the questionnaire may be seen in the accompanying table.

* University of Buffalo, School of Pharmacy.

SURVEY OF CONTENT OF PHARMACOGNOSY COURSES—1935.

		Important.	Not Important.	Some.*	Not Taught.	Some U. S. P.	Omitted in All N. F.	Omitted in Some N. F.	Non-off'l.	O. C.[1]
1.	Latin title	54	...	...	...	...	...	...	...	...
2.	English title	54	...	...	...	...	...	1	1	...
3.	Official synonyms	54	...	...	...	...	...	1	3	...
4.	Non-official synonyms	30	23	1	2	2	1	5	5	...
5.	Abbreviation	20	17	2	13	3	4	11	10	2
6.	Part used	54	...	...	...	...	...	...	...	...
7.	Generic and spec. names	52	2	...	...	...	1	9	3	...
8.	Author's name	1	17	...	28	5	8	18	15	...
9.	Family name	31	17	3	3	1	3	11	10	...
10.	Standard of strength	42	5	4	1	4	3	15	17	2
11.	Standard of purity	29	18	3	3	6	4	14	16	1
12.	Per cent of ash	7	26	4	14	6	7	17	15	3
13.	Macroscopic description	38	10	3	3	3	1	14	10	...
14.	Microscopic description	24	8	9	11	6	1	17	14	4
15.	Powder description	21	11	5	12	5	2	18	15	3
16.	Preservation	31	16	2	3	1	1	13	12	2
17.	Official preparations	26	13	1	1	5	3	12	10	9
18.	Adulterants	27	22	4	0	4	1	19	17	1
19.	Detection of adulterants	24	18	4	4	5	2	19	18	4
20.	Constituents	29	12	8	1	0	2	2	3	...
21.	Plant description	1	45	0	8	4	2	17	12	...
22.	History	3	46	0	5	4	3	20	19	...
23.	Habitat	13	41	0	0	3	1	11	12	...
24.	Marketing	7	39	0	6	5	4	17	14	...
25.	Average dose—metric 6, both 26, apothecaries 10					2	2	5	5	9
26.	Therapeutic properties —part of pharmacognosy—33								4	

A. All 26 points covered with every U. S. P. drug—41.
B. All 26 points covered with every N. F. drug—19.
C. All 26 points covered with non-official drugs—7.
D. Microscopic Pharmacognosy: Separate course 38.
Part of pharmacognosy 19.
Entirely omitted 5.

E. When pharmacognosy is taught:

Second year only	15	Third year only	5	Fourth year only	2
First and second	7	Second and third	10	Third and fourth	6
First and third	1	Second and fourth	4	First, second and third	1
First, third and fourth	2	Second, third and fourth	1		

F. Total credits in pharmacognosy (in semester hours):

2.5— 4.5—10	Laboratory less than 1/4	8
5.0— 6.0—12	Laboratory 1/4 to 1/2	20
7.0— 8.5—10	Laboratory exactly 1/2	13
9.0—11.0—11	Laboratory more than 1/2	13
12.0—22.0— 9	Not answered	6
?? — 2		

* Some—considered important in certain drugs; in others not important.
[1] O. C.—taught in some course other than pharmacognosy.

A majority of the professors concluded that the following points are important; they are arranged in order of relative importance:

Latin and English Title, Official Synonyms, Part Used, Botanical Source, Dose, Standard of Strength, Macroscopic Description, Therapeutic Properties, Family Name, Preservation, Non-official Synonyms, Constituents, Standard of Purity, Adulterants and Preparations.

A majority considered the following unimportant:

Detection of Adulterants, Microscopic Description, Powdered Drug Description, Abbreviation, Habitat, Marketing, Ash, History and Plant Description.

Even though a large majority (52 of 54) pharmacognosists agree as to the importance of the botanical source, the writer takes exception to its value. In other than a few isolated cases, he will never use the botanical source of a drug; will never come in contact with it in dispensing or in selling drugs and preparations. It appears to be a great waste of time and energy to learn over 300 tongue-twisting Latin names when this time could be put to a much better advantage in learning more about the active constituents of the important drugs so as to be able to predict incompatabilities in dispensing. The student should understand the taxonomical relationship of the botanical names and their value in the U. S. P. from a legal standpoint.

In the case of such things as the descriptions, macroscopic, microscopic and powdered, the standard of purity, the per cent of ash, etc., it appears rather foolish to learn all of these points of the U. S. P. or N. F. monograph. They are of value for the determining of identity and quality of the drug. The student, on the other hand, should be thoroughly acquainted with the terms used in the descriptions so that he could identify a drug from the official description. The same is true with regard to abbreviations. The pharmacist does not *write* prescriptions; therefore, he should not be required to learn verbatim abbreviations, but should be able to recognize the abbreviation when he sees it in a prescription.

HISTORY OF SCIENCE SOCIETY.

Program of St. Louis Meeting.

President, C. A. Browne, Washington, D. C.; *Secretary*, F. E. Brasch, Library of Congress, Washington, D. C.

Thursday Morning, Joint Session with Section on Historical and Philological Sciences (L) and Academy of Science of St. Louis, January 2nd, Mayfair Hotel.

The symposiums are as follows: "Study and Teaching of the History of Science," *Chairman*, George Sarton. "Early Science in St. Louis Area," *Chairman*, Chauncey D. Leake.

Among the participants are: H. T. Davis, Indiana University; L. C. Karpinsky, University of Michigan; U. G. Mitchell, University of Kansas; Robert S. Woodbury, Massachusetts Institute of Technology; Charles A. Morris, University of Chicago; Benjamin Ginzburg, Washington, D. C.; H. L. Gordon, New York, N. Y.; Harcourt Brown, Washington University; Solon Buck, The National Archives, Washington, D. C.; C. A. Brown, *Retiring President;* Robert E. Schlueter, St. Louis; William H. Roever, Washington University; Joseph Grindon, St. Louis; Chauncey D. Leake, University of California Medical School; A. B. Hertzman, St. Louis—"William Beaumont—a Photographic Record;" Jesse Greenman, Missouri Botanical Garden; Charles F. Sherwin, St. Louis.

Many of the subjects discussed are of interest to pharmacists, the paper by A. B. Hertzman is referred to, because the late H. M. Whelpley presented a paper on the subject, published in the PROCEEDINGS A. PH. A., for 1903, pages 560–565. It also deals briefly with research on Pepsin.

THE NEW U. S. PHARMACOPŒIA, ELEVENTH REVISION.

The U. S. P. Board of Trustees has announced December 16, 1935, as the date for the release of the U. S. P. XI, and June 1, 1936, as the date when its standards shall supersede those of the U. S. P. X. The following comments are abstracted from statements made by Chairman E. Fullerton Cook, of the Committee of Revision.

"In presenting this Revision of the Pharmacopœia to the Country the Committee does so with the confident belief that its scope and standards conform to the objective established by the 1930 Pharmacopœial Convention and that it fulfils the present-day needs in its field for both Medicine and Pharmacy. 'Interim Revisions' with possible annual supplements have been announced by the Board of Trustees."

"It may be interesting to note that the U. S. P. XI contains 565 titles of which about 430 have approved therapeutic usefulness, although many have similarity in action, such as the various quinine salts, the iodides, the bromides, the barbiturates, etc. The remainder are pharmaceutic necessities, including many crude drugs not administered themselves but employed to make dosage forms of medication. These must necessarily be standardized."

"In the list of admissions will be found 131 pharmaceutical formulas, approximately 30 per cent of the list of therapeutic agents. Most of these formulas can be prepared in the retail pharmacy. Among these are cerates, waters, elixirs, extracts, fluidextracts, liniments, solutions, masses, compound powders, spirits, suppositories, syrups, tinctures and ointments.

"The new spelling of sulfate, sulfur, etc., conforming to modern usage, may seem strange at first; most of the changes seem logical, such as the adoption of the universally used 'Saccharin,' the use of 'Posterior Pituitary' in place of 'Pituitary' necessitated by the use to-day of the whole gland and of the anterior lobe. Other changes may seem strange, for instance, the Food and Drug Administration asked that 'Compound Powder of Glycyrrhiza' become 'Compound Powder of Senna' to indicate the more potent constituent, and the physicians of the Committee insisted upon changing the title of 'Compound Mixture of Glycyrrhiza' to 'Compound Mixture of Opium and Glycyrrhiza.' In all of these cases, the synonyms remain and these products will probably always be known by the layman as 'Compound Licorice Powder' and 'Brown Mixture,' respectively.

"The development of two advisory Boards, dealing with the standards for vitamins and for Anti-Anemia Products are valuable new features. The Vitamin Board, having among its members Dr. Mendel of Yale University, Dr. Sherman of Columbia University and Dr. E. M. Nelson, Director of the Vitamin Laboratory of the Government, has rendered an important service. The Vitamin A and D standards, developed by this Board, and announced officially by 'Interim Revision,' have already become universally adopted in this Country, and the 'U. S. P. Reference Cod Liver Oil,' of known vitamin potency, is being distributed throughout the world through the coöperation of the Vitamin Committee of the Health Organization of the League of Nations. The Vitamin Board is now conducting a series of studies of Vitamin B_1 Assay methods in which 26 laboratories in this Country and abroad are participating.

"The Anti-Anemia Products Advisory Board consists of Doctors Minot and Castle of Harvard Medical School, Dr. Isaacs, director of the Simpson Institute of Ann Arbor, Dr. Palmer of the Medical Center, New York City, with Dr. C. W. Edmunds, *Chairman*. This Board will indicate liver and stomach preparations which are of Pharmacopœial quality—as indicated by submitted clinical data. This is a new service for physicians which the Pharmacopœia is undertaking."

"International Relations—The U. S. P. XI has adopted a number of International Standards, such as those for Vitamins A and D and for digitalis and those approved by the last Brussels Conference. Throughout the revision the Committee has maintained a most friendly coöperation with the British Pharmacopœial Commission in an effort to harmonize the titles and standard of these two Pharmacopœias."

"Percentage Solutions—A new feature is the suggestion among the 'General Notices of the U. S. P. XI, page 4, that prescriptions, calling for percentage solutions be prepared, when not otherwise directed, by dissolving the substance (if a solid) in accordance with the principle 'weight in volume.' For instance, for a 1 per cent solution, dissolve 4.5 grains of the substance in sufficient of the solvent to measure 1 fluidounce. This follows the custom of most pharmacists

and also the precedent established by the latest British Pharmacopœia, and should establish a uniformity badly needed in prescription practice in this Country."

The Pharmacopœia XI will be on sale December 16th, and replace the Pharmacopœia X, hence all users of the Pharmacopœia will have opportunity for studying the former, therefore references will be made without comment, to items included in the statement by the chairman.

"Alternative Formulas;" "Reference Standards;" "Some Important Revision Changes:" "Increased Strength of Acids," "Ether for Anesthesia and Solvent Ether," "Biological Products," "Camphor and Menthol," "Digitalis," "Emulsions," "Ephedrine," "Ergot," "Bichloride Tablets," "Liver and Stomach Anti-Anemia Preparations," "Solution of Magnesium Citrate," "Ipecac," "Fowler's Solution," "Solution of Sodium Hypochlorite," "Quinine Sulfate," "Sodium Phosphate," "Sapo Durus," "Sapo Mollis," "Glycerin Suppositories," "Antiseptic Iodine Solution," "Tryparsamide," "Ointments," "General Tests, Vitamin Assays, Reference Standards, Reagents, Tests and Standard Solutions, Hydrogen-Ion and Tables;" "Color Standards."

The Committee of Revision and Associates. Under the subhead of the Chairman's Statement, the closing paragraphs are quoted in full.

"When Dr. Lyman Spalding, on February 28, 1818, issued a call for voluntary assistance in the preparation of a Pharmacopœia for the United States, he characteristically described the type of professionally minded and trained scientists who could or would coöperate in the making of a Pharmacopœia. He said they would have to be 'gentlemen, willing to act and men distinguished for their ability and learning.' "

"In this day when intensive commercialism, selfishness and personal ambition largely influence many men, even those associated with the traditionally altruistic professions of medicine and pharmacy, it is gratifying to find those standards of Dr. Spalding, announced one hundred and eighteen years ago, so splendidly realized. The willingness to assume large responsibility by men distinguished for their ability and learning and the continuous and untiring labor of years during those extra hours which were not demanded for their regular, exacting duties, alone make possible a publication like the U. S. P.

"Among the members of the Pharmacopœial Board of Trustees, the Committee of Revision, the auxiliary boards and associated scientists will be found the names of men and women known internationally for their contributions to the latest developments in the medical and pharmaceutical sciences. Only the voluntary-service plan of the Pharmacopœia could command the help and association of those forming this distinguished group."

John Uri Lloyd, president of the AMERICAN PHARMACEUTICAL ASSOCIATION, 1887–1888 and aged 86 years, in writing to the Remington Medalist, S. L. Hilton, said that "things were becoming monotonous," so he, with his daughter and son-in-law, Dr. Welbourn of Los Angeles, visited Japan. While there, he was delightfully entertained, among the hosts, Hajime Hoshi, who has made a return visit.

The latter is head of the Hoshi Pharmaceutical Co. Ltd., Tokyo, Japan, which from a small beginning now owns and controls the greater number of retail stores in Japan and owns the Formosa quinine area.

Mr. Hoshi credits the rapid growth of his pharmaceutical manufacturing and retail selling organization to the careful training of its sales representatives and factory executives; in this training, the Hoshi Commercial School in Tokyo plays an important part. Here, from 150 to 200 young men who desire to enter the pharmaceutical profession are trained under competent instructors, not only in the profession of pharmacy, but also as expert salesmen and factory supervisors.

To encourage young men to enter the profession of pharmacy, a selective plan is employed to provide group managers and factory supervisors. A record is kept of their graduates from the time they enter the school and all through their work in the field. The men who show themselves to be best fitted for this type of work are promoted to the higher executive positions.

A Joyful Christmas and a Successful New Year.