

4. Specific Volume:
 - a. Determination methods.
 - b. Applications.
5. Thermometry:
 - a. Thermometer scales.
 - b. Thermocouples, radiation, pyrometer, etc.
6. Percentage Solutions:
 - a. Weight to weight.
 - b. Weight to volume.
 - c. Volume to volume.
 - d. Calculation from weight of solute.
7. Alligation:
 - a. Medial.
 - b. Alternate.
 1. Percentage strength.
 2. Specific gravity.
8. Logarithms:
 - a. Simple procedures.
 - b. Formula application.
9. Slide Rule:
 - a. Simple procedures.
 - b. Roots.
 - c. Logarithms.
 - d. Formula settings, etc.
10. Review of Chemical Arithmetic:
 - a. Quantities of substances necessary for reaction.
 - b. Quantities of substances formed in reactions.
11. Assay Procedures:
 - a. Gravimetric factors and their logarithms.
 - b. Volumetric solution factors.
 - c. Adjustment of volumetric solutions.
 - d. Indicator constants.
 - e. Choice of indicators.
 - f. Distribution of substances between solvents.
 1. Washing of precipitates.
 2. Shaking out alkaloids.

SUMMARY.

1. Suggestions made as to addition of logarithms to course in Pharmaceutical Arithmetic.
2. Suggestion made as to addition of slide rule exercises.
3. Suggestion made as to addition of Gravimetric and Volumetric analysis procedures and calculations involved.
4. Suggestion as to consideration of "Partition Law," methods of measuring heat, theories of indicator choice, etc.
5. Suggestion made as to adding to length of course.
6. Outline of course offered.

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PROBLEMS CONFRONTING THE TEACHER OF DISPENSING PHARMACY.

BY LOUIS WAIT RISING.*

The subject of problems is an age-old one in any field. A number of them are gone over again and again at various annual or more frequently convened gatherings, but because the human mind is what it is—individual—they are never completely threshed out and settled. The points for and against each one are as old and stabilized as the problems themselves, but never can there be obtained a unanimity of opinion for either side.

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Then, there are always new difficulties creeping in, due to changes in economic conditions, social shifts, altered professional attitudes and ethics. As long as the sea of competitive life remains turbulent we will have this kind. Fundamentally many of them are those our ancestors discussed. But they are as fluid as time and have changed their form to become almost unrecognizable.

So it is with the teaching of Dispensing Pharmacy. The logical assumption would be that the major pedagogic problems of dispensing had been solved long ago. In truth, however, there is always much room for a better coördination of objectives, facts and methods. This is due primarily to the ever-shifting trends in pharmacy. In many ways the demands on the pharmacist are continually changing; it is obvious that they are different now than they were a few years ago, and in consequence our educational program must be elastic in order that it can meet its obligation of up-to-the-minute training. We must graduate people who are equipped with the fundamental knowledge required to most efficiently work out the problems of the particular period in which they are launching for on their professional careers. Such a condition reflects itself in yearly variations of lecture and laboratory programs, particularly lecture, creating as a result many academic problems.

To become specific in taking up the problems created by the necessity of keeping the course work abreast, or ahead of the times, it would appear that in the revival of professional pharmacy the teachers of dispensing have a great opportunity to speed up its return provided they rearrange their lecture work where necessary with that aim in view. The hue and cry of criticism directed against modern pharmacy education is that it is not practical, that the emphasis has been placed in the wrong spots. In many instances this has been correct. The curricula were not designed for the present-day merchandising problems of the average druggist. The commercial or economic problems which he faces were not adequately treated in school. To a certain extent this educational condition has been altered. The pendulum is now swinging toward professional pharmacy. Still our curricula are not altogether adequate even though they are more satisfactory than for instruction in merchandising problems. The situation in professional pharmacy to-day demands a different training than was given yesterday. Conditions incident to the conducting of a successful prescription store are considerably altered. There are new influences and tendencies to be combated, new habits to be built up and old habits to be more vigorously cultivated. In short, we must begin to pay more attention to things other than the means of actually compounding the prescription.

We must pay infinitely more attention to the factors which build up and maintain the prescription business. We must also train the student to become an educator of the physician and the public. He must have inculcated into him before graduation the fact that "pharmacists have responsibilities of service and also duties which include making the public acquainted with pharmacy, its mission, and its part in the life of the state and nation." We must, more than ever, sell the idea that Pharmacy is an ethical profession whose members should hold positions of dignity, responsibility and influence in their communities. Nowhere in the pharmacy work should it be easier to do this than while the student is learning how to aid in maintaining the health and well-being of his neighborhood through proper compounding of their prescriptions.

The relationship of the pharmacist with his physician should have a position of prominence in the didactic work. There should be developed in the student a deep appreciation of the value of this contact. Pharmacy is losing because the physician is visited more regularly by representatives of large business concerns than by his immediate pharmaceutical associates. These paid representatives approach them in a more intelligent manner. They are trained to get certain results and they do. By devoting sufficient time in our prescription courses to the visitation of doctors, in short, by conducting a school of detailsmanship, we could make our students equal, if not superior, in influence to the men whose contact with the physician is only passing.

The dentist should not be neglected in this work. Here is a field of great potentialities, which is as yet almost untouched. The pharmacist has things of value to offer the dental surgeon, and an ethical relationship between the two professions could be made mutually pleasant and profitable. In New Jersey the dental associations are now being made acquainted with pharmacy in a most satisfactory manner. This has come about largely through the efforts of one man. Concerted faculty action in the dispensing courses of our colleges can do much to nationalize this local feeling of understanding and coöperation between the two professions.

A logical outgrowth of the visitation course work is the introduction of a student into the field of service whereby he can develop and enlarge his prescription department so that he has something of merit to present each time he calls on the doctors. The ways in which professional aid can be rendered should be emphasized. We, perhaps, should teach in dispensing the elements of prescription department salesmanship and management, rather than stress so much in other courses how to dress a toilet-goods window. If the life of the profession is to depend on the future development of prescription pharmacy, let us teach it in a business way where possible.

From this work we can lead the student to a realization of the need for the other types of knowledge which he has gotten in school. He can more easily grasp applications of certain information from other courses in the expansion of his prescription department, in the scientific solution of his prescription problems and in his physician and customer contacts. He can be sold on the idea of making use of all the scientific tools at his command to promote the professional end of his business.

As the application of collegiate knowledge becomes clear it is but a step to the demonstration of the value and necessity of continued study after the class room has closed its doors. The student is more receptive to the fact that mental stagnation after graduation means professional failure. One of the worth-while results of this instruction should be the building up of a small library of scientific books and trade journals in a great number of stores.

Just as the lecture work can show the need for and application of other types of knowledge, so can it demonstrate the active necessity for a coöperative participation in the various professional societies and associations. It is particularly difficult to convince a student, or the average druggist for that matter, of the value of such memberships unless there has been considerable diplomatic preparatory work done. Build up in the unsuspecting mind a house that needs just one more stone for

completion; then the acceptance of facts pertaining to the worth of association memberships is relatively easy to bring about. That is why, perhaps, this subject could well be left alone as a central topic for lecture until a clear conception of various other working factors in the carrying on of a successful prescription business are reached.

The undercurrent of ideas throughout all the instruction should proclaim the professional and scientific standing of pharmacy. It should impress the embryo druggist with the fact that he has no reason for the inferiority complex so many of his older brethren assume. He should be convinced beyond doubt that he is the equal in intelligence and ability of his medical friends, and that he knows enough to be a great help to them in their prescription and diagnostic problems.

The entire structure of lecture work should be designed to build up in the student's mind a sense of the vast possibilities of a professional business. Only then will he begin to feel the vital importance of meaning of the prescription to all concerned with it. At that time, instead of wishing he could throw this department out of his store he will become busily engaged in planning for its future, and doing so with a greatly enlarged vision.

Professional pride and a sense of potential position sprouts, grows and flourishes if properly nurtured during undergraduate days. These states of mind are among the greatest stimuli known for the production of perfection in any line of human endeavor. Therefore, if we can instil them into the student of dispensing we will have gone far toward the goal of a publicly recognized and respected professional pharmacy.

AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.

THIRTY-THIRD ANNUAL MEETING.

Officers: *President*, Townes R. Leigh; *Vice-President*, Edward D. Davy; *Chairman of Executive Committee*, Charles B. Jordan; *Secretary-Treasurer*, Zada M. Cooper.

Monday, August 22nd.

9:00 A.M. Meeting of Executive Committee.

9:30 A.M. Meeting of Teachers' Conferences.

Pharmacy, Elmer L. Hammond, *Chairman*.

Chemistry, John C. Bauer, *Chairman*.

Materia Medica, Franklin J. Bacon, *Chairman*.

Pharmaceutical Economics, Howard C. Newton, *Chairman*.

CONFERENCE OF TEACHERS OF PHARMACY.

Officers: *Chairman*, Elmer L. Hammond; *Vice-Chairman*, Charles H. Stocking; *Secretary*, Louis W. Rising.

PROGRAM.

"A Method for Teaching Prescription Pricing to College Students," A. O. Mickelsen.

"The Teaching of Pharmaceutical Latin," M. A. Starkman.

"The Deadwood in Laboratory Teaching," Roland T. Lakey.

"The Negro in Pharmacy," J. J. Mallowney.

"A Course in Organic Pharmacy," Antoine E. Greene.

"Some Facts as Brought Out by a Study of the Actual Prices Charged for Prescriptions from Various Parts of the country," Leon Monell.

"The Teaching of Dispensing Pharmacy," G. A. Burbidge.