

1. Teaching incompatibilities should begin soon after the student enters the school.
2. All teachers should have this subject constantly in mind and select illustrations for their statements from the incompatible group whenever possible.
3. This accumulation of theory under the various chairs should then be applied in the course of dispensing pharmacy.
4. Better results will be obtained from the use of original prescriptions than from the use of printed formulas.
5. The conference on prescription difficulties occurring in the stores from day to day, keeps the instruction up to the minute.

THE TEACHING OF INCOMPATIBILITIES.

BY W. G. CROCKETT.*

Editor's Note: The preceding paper by Professor Mantz, together with the four papers following, comprise a good symposium on Incompatibilities. It is noticeable that the authors are not in entire agreement on when and how this subject should be taught and this, to me, is a good sign. When we all agree on a time or a method of teaching a subject, we should ask ourselves whether we have not eliminated originality, the teacher's best qualification. Two teachers may present a subject in quite a different way and yet secure equally good results. I do not agree with some of the authors on when and how incompatibilities should be taught and more than likely the reader would not agree with me should I set forth my opinions. What are we to do in this dilemma? Read all the papers, those of Mantz, Crockett, Johnson, Mitchell and Terry, and cull the best from each of them.—C. B. JORDAN, *Editor*.

The subject of incompatibilities in prescriptions is an important one, and one which should not be treated superficially by educators merely because physicians in recent years have become more and more inclined toward prescribing simple-named, manufactured products. Evidences of closer coöperation between medical and pharmaceutical groups throughout the country, along with increasing costs of medical care, lead me to believe that as the years go by physicians will return to writing original prescriptions in order to reduce the costs of medical care and at the same time forestall self-medication on the part of the laity. If this be true the subject of incompatibilities in prescriptions will be of more concern in years to come than it is at the present time. We must teach for future needs as well as for present ones.

A complete discussion of the teaching of incompatibilities should embrace both what to teach and how to teach it. This subject is so broad and so debatable that I shall not attempt to treat either of these phases in detail, but instead will confine myself to a few thoughts or principles with the expectation that the discussion which follows will bring us many different points of view and thereby be more helpful than my own personal views. Any scheme I might present would prove inadequate even to myself. I say this because I find myself altering my own approach to the subject from year to year.

At the outset I wish to state that I think it a mistake to isolate the subject of incompatibilities and attempt to teach it as a separate course. Curricular

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conditions in the three-year course necessitated my attempting it in this way. I found that the students regarded it as a separate entity and failed to associate it properly with dispensing pharmacy. I think the didactic and laboratory courses in dispensing pharmacy should treat first of the fundamentals of prescription compounding with emphasis upon technique and the many minor but important details. The subject of incompatibilities should develop out of this course, as a part of the course in dispensing pharmacy. The discussion of prescriptions in both didactic and laboratory courses should be complete. If the subject of incompatibilities is segregated and taught as a separate course under a distinctive title the student is inclined to magnify the importance of the incompatibility, and in his discussion neglect such vital points as the method of compounding, accessory labels and the kind of container in which the prescription should be dispensed.

I think a review of the pertinent parts of qualitative analysis is highly advisable. I can go further and give you an outline of the method which I followed last year. I distributed sets of mimeographed sheets to the students, bearing the more important incompatibilities of the common inorganic and organic compounds. I made assignments on these sheets and at the following didactic period distributed prescriptions which set forth incompatibilities mentioned in the assignments. These the students discussed both orally and in writing. Afterward they compounded some of them in the laboratory.

After the sheets had been disposed of, I distributed at each didactic period copies of prescriptions representing incompatibilities in general. The students were required to discuss them fully, both orally and in writing, during that particular period. Results were gratifying. I have been unable to get satisfactory results in prescription discussion by making assignments in a book which points out the incompatibilities, their remedies and methods for compounding. Conferences with students after graduation have confirmed my belief that this is poor practice, as it tempts students to memorize rather than think.

It is of course understood that teaching problems differ in different institutions. In writing this paper I have been influenced undoubtedly by conditions in the institution which I represent. A brief explanation may be in order. The Medical College of Virginia operates two dispensing pharmacies to take care of the needs of its out-patient department and three hospitals. The medical staff rotates, thereby bringing approximately 150 physicians onto the staff during the year. Practically all the prescriptions written by these physicians are for official and extemporaneous mixtures. The ordering of medicines by stock numbers is not permitted. All prescriptions are written just as if they were to be presented at a retail store.

Approximately 150 prescriptions are filled daily in these two pharmacies. Routine prescriptions which do not constitute experience for students after they have filled them two or three times, are segregated and filled by the full-time hospital pharmacists. The others are filled by senior pharmacy students, under close supervision. In the past each senior student has served fifteen hours a week for approximately ten weeks in these dispensing pharmacies. Now that classes are smaller their periods of service will be lengthened. These facilities have enabled us to give much instructional work in incompatibilities in these pharmacies, as

each student is quizzed on each prescription he fills as soon as it is completed. This course is supplemented by a laboratory course in prescription compounding, in which types of incompatibilities which do not occur frequently in our dispensing pharmacies, are treated.

These articles will be continued in the May number of the Journal.

THE NATIONAL CONFERENCE ON PHARMACEUTICAL RESEARCH.

BY JOHN C. KRANTZ, JR., SECRETARY.

The National Conference on Pharmaceutical Research has sent out its official notices convoking the Thirteenth Annual Meeting. This meeting is to be held in conjunction with the AMERICAN PHARMACEUTICAL ASSOCIATION at the Hotel Shoreham, Saturday, May 5th, at 2:00 P.M.

During the thirteen years of its existence the National Conference on Pharmaceutical Research has served as a clearing house for research in pharmacy and its cognate sciences in the United States. It has annually compiled a Census of Pharmaceutical Research which has been most useful in determining the increment of progress of research in pharmacy during the year. Besides, this census serves as a stimulus to research workers in the field. In addition, under the auspices of the Conference, the Symposium "Fighting Disease with Drugs" was published for the purpose of telling the story of pharmacy in a more or less popular style.

For the past two years the Conference has awarded annually a fellowship of five hundred dollars to graduate students in universities pursuing courses for the doctorate degree, whose research was of a pharmaceutical nature.

During the coming year the Conference will endeavor to compile the reports of the various committees, written in a simple, narrative form, in a volume indicated as The Annual Survey of Pharmaceutical Research. It is our hope that this new publication will adequately tell the story of the advance in pharmacy each year and like the Census of Research serve as a stimulus to workers in the field.

The Conference anticipates a successful meeting in Washington, and takes this opportunity to invite those interested in the various ramifications of pharmaceutical research to attend its sessions and to participate in its deliberations.

RESEARCHES AT THE MELLON INSTITUTE.

Among the results of the investigations it has been determined that no systemic pharmacological effects can be ascribed directly to absorbed aluminum; it does not appear to be cumulative in the tissues. No harmful effects were shown from soluble aluminum occurring naturally in foods or from utensils.

Recent investigations which are being carried on with the coöperation of Mellon Institute have indicated probable valuable application of sodium metaphosphate in the field of veterinary medicine. One of its uses is for preparing solutions for washing and rinsing dogs and other furred animals.

WASHINGTON BOTANIC GARDENS.

Development of the old site of the Botanic Gardens into Union Square and the proposed transfer of the new Botanic Gardens from jurisdiction of the Joint Committee on the Library of Congress to the Department of Agriculture recall the origin and development of this old institution, which has been in existence for more than a century.

The establishment of a botanic garden was the subject of correspondence between Washington and District of Columbia officials. It was in 1820, after years of discussion, that the Columbian Institute for Promotion of Arts and Sciences obtained passage of a bill in Congress, which became a law on May 8th.