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PRESCRIPTION INCOMPATIBILITIES AND THEIR PROBLEMS FROM THE TEACHING STANDPOINT.

BY RALPH E. TERRY.*

(These articles continued from page 364, April Journal.)

From the teacher's standpoint, the presentation of the subject of Prescription Incompatibilities has many problems. There are three outstanding factors which warrent discussion at this time. These may be termed: Time, Content, Method.

Time.—This factor might be subdivided into two distinct units; placement in the course of this subject and the amount of time allotted to the study of the subject. Time in relationship to placement in the course needs very little mention for universally the study of Prescription Incompatibilities is reserved until the final term. This is as it should be and no attempt should be made to introduce it at any earlier period even as a so-called "student interest" bait. The fact that this is the most technical of all the courses offered in the Pharmacy curriculum demands the completion of the basic subjects. There is also the possibility of confusing the student by applying some of the facts before he is well grounded in the fundamentals.

Another important factor of *Time* is the question of how much time is to be allotted to the work. Again differences in what should be taught as part of the course will cause considerable differences in time devoted. This question of *Content* is to be discussed later, but a basic quantity of time should be assigned to the work. A minimum number of clock hours might be specified, however, and it is hoped that during the discussion of this problem some opinions may be expressed on this question.

Content.—While the question of incompatibilities may be stated as a relative thing; there is no doubt but that certain reoccurring difficulties do arise. To the novice almost any formula has possibilities of trouble; experience shows the way to avoid these hitches. Therefore, in the teaching of the subject, we are facing two distinct phases; *first*, we must carefully arrange the exercises in such a way that they are of a progressive nature, and second, these should be of a practical nature where possible. Progression can be secured only by careful selection. One of the best devices to start out the work is to use an exercise which the student has previously completed in the regular work, and by restating the formula in slightly changed wording, profit by the student's experience. Many times this "carry-over" will be disappointing to the teacher, but the student will recall the earlier exercise when the instructor explains it and there is an important feature here not to be overlooked; that of a repeated experience. And all learning is simply repeating experiences until they become habits. Therefore, the device of starting the subject on a familiar base should be used.

^{*} University of Illinois.

The question of stating the problems as practical formulas will not always work since there are times when the facts can be better studied if the formula be stated in the theoretical manner. Here again the possible carry-over from the previous subject should not be overlooked. As an example, a formula calling for eye drops of silver nitrate in normal saline solution presents the old qualitative reaction dressed up in a pharmaceutical cloak. And so there are a number of such reactions which might be used as starting points, carrying over into the new work facts learned early in the student's work and therefore more easily brought to mind.

On the other hand, at times student interest can be aroused to a higher pitch if the problem is stated in practical language. Then, too, the actual translation of laboratory experience into practical life is made easier if the applications are kept in mind at all times.

One more important possibility in relation to *Content* of course; since this subject is taught at a time when the basic subjects have been covered, and since the study itself makes use of many of the facts previously learned, the teaching of prescription incompatibilities offers a wondertul opportunity for reviewing a large number of courses. Here again is an opportunity to arrange the work in such a manner as to cover the basic subjects, yet the course should not degenerate into a mere review study.

Method.—Method is the most important of all the factors. A good teacher with a well-worked-out method can present a subject of inferior content and get better results than another instructor blest with a much better course content. And Method should be made up of the following phases: the materials, desk space, a text or manual and a goodly supply of teacher's time and energy. This latter cannot be over-stressed for if there is any place in the modern system of instruction where the old-fashioned preceptor method has a place it is in this particular study. A few suggestions as to the best method, a careful supervision of the work, and then a short discussion following the completion of the exercise will do more to assist the student than any other system. Here is where true teaching ability shows; some students need only a small amount of help. Others need very careful and complete supervision, and when possible they should have it. On the other hand they should not be too completely dominated since the loss of independence of action would be very undesirable. Therefore, this feature must be carefully adapted to the individual student.

Under a discussion of *Method*, a very important discussion is that of using the proper formulas. In a previous paper, the use of small amounts of materials was outlined. For the study of the theoretical phases of the subject, this is perhaps the best manner, but as a practical course, the use of "full-sized" formulas is urged. Thus the student is confronted with the problem as he will see it in later work and by solving the laboratory problem he gains the confidence for his future work. This is the important part of the course in Prescription Incompatibilities.

SUGGESTIONS ON TEACHING A COURSE IN INCOMPATIBILITIES. JOHN S. MITCHELL.*

It seems there is always some controversy concerning the methods used and their procedure in teaching a course in incompatibilities in prescription writing.