

medicine. I have already pointed out that it was the development of physiology, pathology and bacteriology that brought about the great advances of the last thirty years. What medicine and surgery would now be had they not progressed is not difficult to imagine. Without a knowledge of them no physician can attain the first rank or be even mediocre in the pursuit of his calling. The sciences are then absolutely indispensable in medicine as enabling the student to understand the fundamental phenomena of disease. They are of inestimable value from another point of view. As they are the subjects in which exactness is possible they can be made to serve to bring out all the powers of the student in regard to precision of thought and observation and a right training in them ought to endow the student of medicine with a dexterity that he can get in no other way.

The training in the sciences of the medical course then must serve to develop the Scientific Spirit. If a student does not, when he is being so trained, attain that clearness of mind, that capacity to relate facts to one another and to apply them in concrete cases he has failed in the absolutely essential thing in medicine. Lacking this power and precision he will not acquire it in any training at the bedside. On the other hand, if he is properly trained in the laboratory he readily acquires and applies the methods of clinical medicine and surgery.

The sciences then should be carefully cultivated by the student in the undergraduate course, not to the exclusion of the other subjects which are known as professional, but as necessary to the latter and in order that the Scientific Spirit may be developed.

The great difficulty in this matter that is soon to confront us is how to adjust the courses to each other so that there will result the greatest advantage to the student. If bio-chemistry is to play the part I have predicted for it, it will mean a serious addition to the curriculum already heavily loaded, and, of course, there must be a curtailment of time given either to the other sciences or to the professional subjects in order to allow room for it. I have no doubt that a certain amount of readjustment is necessary in the sciences, but the introduction of the new subject should not be made wholly at their expense, for some of the time necessary should be provided for in the increased time demanded of the student.

Of course a proposition like this will at once be objected to by the clinical teacher and, perhaps, also by the student. The latter may ask where he is going to get the clinical experience which he requires in the practice of medicine. The answer to this is, that all the remainder of his life is to be a training in clinical medicine and surgery. If