

be entrusted with powers similar to those vested in the regents of the University of the state of New York, this council to be composed of the most eminent men in the state without any reference to political considerations. Further, that no degree-conferring institution should be incorporated without the approval of this council of education. In the self-same spirit the legal section of the American Bar Association resolved, in 1897, that the degree-conferring power should be subject to a strict state supervision to be exercised in a manner somewhat similar to that which is exercised by the regents of the University of the State of New York.

The provision under the laws of New York to which these various propositions refer absolutely prevents any abuse by the academic or professional institutions of the state of their power to confer degrees.

2. Accurate registration is dependent both on examinations and inspection.

Pio A. Da— submitted a certificate from the University of Montevideo, Uruguay, to the University of ———, United States, and was admitted to the class of 1904. The certificate showed entrance examinations for admission to secondary studies and secondary subjects as follows:

Algebra	3
First and second year French	6
Physics, parts one and two	4
Chemistry, part one	2
First and second year philosophy	3

Total, a year and a half in high school work.. 18

Consul Worman says, regarding the kind of legislation state boards should effect:

The authority vested in the inspector of education has in many states not been exercised on behalf of the professional schools and colleges. Its exercise should be exacted of him by the profession in each state where such an official exists for the supervision of educational and professional institutions. Where legislation is necessary to make the authority sufficiently abundant to suppress illegal acts by incorporated institutions, it should be urged by the profession without delay and with persistency. Europeans, and especially the Germans, look on our whole educational fabric with distrust because of the swindling institutions that have been possible in certain states. The courts, weary of distinguishing between the true and the false, have ruled out all of them as private enterprises.

To illustrate another phase of the necessity of accurate registration, dependent both on examination and inspection, I quote from another recent letter from a state of Australia:

The information furnished by you will be most useful to this board, and I am directed to convey the thanks of the members for your courtesy in the matter.

In future no application for registration from Americans who do not possess the certificate granted by your university will be entertained by this board. . . . Any British qualification is registerable in this state, but the board reserve to themselves the right of refusing to register any foreign qualification.

The rules regarding registration in the other states are practically the same, with the exception that no American qualifications are registerable in Queensland, and no foreign qualifications whatever in Western Australia. . . .

I shall be glad if you will furnish me annually with a list of registered and accredited colleges of America for the guidance of this board.

3. Reciprocity between states must be based on actual requirements met by licensees, and a uniform minimum statutory requirement for all states of the Union is at present impracticable.

To illustrate: A practicing physician of the state of New York, having met requirements plainly above those of a neighboring state, was compelled by declining health to remove to that neighboring state to save her life. She was dependent on her practice for her livelihood and could enter on a profitable practice if she could secure the requisite license. The reciprocity clause of the statute in force in the state to which she would remove provided for reciprocity between states that conferred the same privileges on its licensees. There was no question regarding her professional attainment. She was denied the right to practice in the new state because the state from which she planned to move could not reciprocate the favor conferred on her by registration in the state to which she would have moved for the purpose of saving her life.

4. State control should concern itself with the minimum statutory requirement for admission to practice, i. e., the licentiate credential, and leave to the schools the determination of the maximum scholastic, i. e., the degree.

THE VALUE OF THE CONVERSATIONAL METHOD OF MEDICAL INSTRUCTION.

THE "STUDENTS' CONFERENCE."

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The methods of medical pedagogy have undergone many changes during the last twenty-five years, the most important being that the antiquated didactic method of teaching has in a large measure given place to practical, clinical and laboratory teaching. Some excellent authorities now advocate the complete abandonment of the didactic method, recommending that in its place certain text-book readings shall be assigned to the student, and that demonstrations and conferences between the teachers and pupils covering this subject-matter shall constitute the essential part of the instruction. It has always seemed to me illogical to entirely do away with the didactic method, which I believe occupies an important and indispensable place in medical pedagogy; first, because there are many subjects that can be far better treated didactically than practically; second, because new and controversial matters can be far better summarized and treated by the professor whose business it is to familiarize himself with the advances of the subject than acquired by the student from text-books, and, third, because an enthusiastic and alert teacher can arouse the interest of his pupils by presenting his subject to them in a systematic, attractive and logical manner.

I do not wish to be misconstrued to favor reversion to the didactic method exclusively. I simply favor what I conceive to be an essential amount of didactic teaching, to be supplemented by work in the laboratory and by conferences.

Nearly all of our ideas are based on opinion rather than on experience, and it was with much interest that I availed myself of an unusual opportunity to demonstrate, practically and statistically, the value of the conference method of teaching.

In the Medico-Chirurgical College of Philadelphia during the years 1903 and 1904, the sophomore class of the medical department was divided into two sections for practical work in the laboratories. The section schedule was arranged in such a manner that during the first

half of the college year one section remained unoccupied for one hour each week, and in the second half of the college year the other section was unoccupied during the same hour. In order that his time should not be lost, I decided to utilize it for conferences.

The sophomore students who were to receive this advantage attend two didactic lectures on general pathology each week throughout the college year, perform about 150 hours' practical work in the pathologic laboratory, and about 80 hours' practical work in the bacteriologic laboratory. Two examinations were held during the year—one immediately after the Christmas vacation, and one at the end of the course in the month of May.

The division of the class into two sections was made according to their matriculation, and the men of the two sections should have averaged about the same in their intellectual abilities.

Section A was benefited by the conferences from the opening of the session to the mid-year examination. Other than this there was perfect uniformity in the instruction received by both sections. Forty-five men took the examination, which was written, and was a severe test, carefully conducted. The average mark attained was 82; the highest mark 98, the lowest mark 37. Taken by tens, the marks ran as follows:

100 to 90.....	16 men
90 to 80.....	12 men
80 to 70.....	7 men
70 to 60.....	6 men
60 to 50.....	3 men
50 to 40.....	0 men
40 to 30.....	1 man

In the same examination the men of section B, of whom there were forty-nine taking the examination, and who had had no conferences, made an average mark of 70. The highest mark attained was 100, the lowest 35. Taking this section by tens, we find a striking difference, which ran as follows:

Between 100 and 90 there were	9 men.
Between 90 and 80 there were	6 men.
Between 80 and 70 there were	9 men.
Between 70 and 60 there were	12 men.
Between 60 and 50 there were	11 men.
Between 50 and 40 there were	0 men.
Between 40 and 30 there were	2 men.

We thus find that the difference between the average mark attained by the men of section A, who had conferences, and that of the men of section B, who had none, was 12 points in favor of section A. This seemed to show how great an advantage the men gained through conferences; but the question, of course, arose whether this was not an accidental difference depending on variation in the intellectuality of the two sections. We notice, however, that the highest mark made in this examination—viz., 100—was made by a man in section B who had had no conferences; also that the lowest mark—35—was also made by a man in section B. It is very striking that in section A, 16 men should receive marks above 90, but that in section B only 9 men should receive marks above 90; that in section A only 4 men should receive marks less than 60, but that in section B there should be 13.

In order to make an accurate comparison between these sections, determine their comparative intelligence and ascertain whether the conference was the cause of the extraordinary variation in the marks, the questions in the final written examination of the year were arranged to cover only subject-matter that had been taught in the second half of the year. By this means it will be observed that the results obtained by section A in its examination, covering a period during which its men had had conferences, could be accurately compared

with those of section B, covering the period and subject-matter on which its men had had the conferences.

When we come to study the effects of the conferences on section B, as shown in this final examination, we find two possible sources of error, the first being that the final examination was a little more severe than the mid-year examination, and the second, that the men are apt to prepare more carefully for the final than the mid-year examination.

Forty-seven men in section B took the examination, the average mark being 75, the highest mark 97 and the lowest 21.

Between 90 and 100 there were	11 men.
Between 80 and 90 there were	11 men.
Between 70 and 80 there were	6 men.
Between 60 and 70 there were	13 men.
Between 50 and 60 there were	2 men.
Between 40 and 50 there were	3 men.
Between 30 and 40 there were	1 man.

It will be noticed that the best man in this section, who had received 100 at the trial examination, made only 97 at the final, and that the poorest man received 21 instead of 35. This seems to indicate that the final examination was more severe than the mid-year examination, which will be borne out by subsequent demonstration. The number of men receiving between 80 and 100 has increased to 22 over 15 in the mid-year examination; the number receiving less than 60 is 20, against 17 in the mid-year examination, but the general average of the whole section has been raised 5 points. This, taken by itself, is extremely suggestive, though not convincing; but when we turn to the results of section A in the final examination we are left no room to doubt the immense value of the conference method of teaching. Of the forty-four men of section A taking the final examination, the average mark was 66, instead of 82, as in the mid-year examination. The highest mark was 96, instead of 98; the lowest mark was 21, instead of 37.

COMPARISON OF MARKS.

	Final Examination	Mid-year Examination
Between 100 and 90.....	5	16
Between 90 and 80.....	7	12
Between 80 and 70.....	8	7
Between 70 and 60.....	10	6
Between 60 and 50.....	7	3
Between 50 and 40.....	3	0
Between 40 and 30.....	2	1
Between 30 and 20.....	2	0

In the mid-year examination there were only 4 men with marks below 60, but in the final examination there were 14. The average intelligence of section A seems to have been a trifle greater than section B, for the average of all of the marks for section A in both examinations is 74, and the average of all the marks of section B in both examinations 72.5. The conferences during the last half of the year increased the average mark of the men in section B from 70 in the mid-year examination to 75 in the final examination, while section A, whose men attained a general average of 82 in the mid-year examination, lost an average of 16 points each, attaining a general average of only 66 in the final examination. The final examination was more severe than the mid-year examination, as is shown by the fact that in the former the ninety-one men taking the examination made an average mark of 71, whereas the ninety-four men taking the latter examination made an average mark of 76.

The total variation in the two sections, therefore, is determined by adding the loss of section A to the gain of section B, which equals an average of 21 points per man in favor of the men who had the conferences.

It seems to me that no better demonstration of the

value of a conference can be given than is shown by these statistics.

Lest some one should misunderstand exactly what is meant by the term "conference" as here employed, it may be well to add a few words in explanation. The class of students and the professor met in a small lecture room, and all sat down. There is a certain pleasant informality about a seated professor that is wholesome on such occasions.

A leading question was asked a student whose name was chosen from the list of the class, and by auxiliary questions the thoroughness of his understanding of the subject was brought out. If it were shown by the answers that his knowledge was defective, another student was asked to point out the error. In this manner, by asking a few students many questions, and by permitting the students themselves to ask any number of questions, by immediately passing over matter that was understood and carefully explaining what was not understood, by endeavoring to determine why erroneous ideas were conceived, and by sound reasoning to bring the student's mind back to the correct channel of thought, the class progressed from day to day to a more and more thorough intelligence of the philosophy of the subject, so that they were easily able to cope with ordinary problems.

THE ELECTIVE SYSTEM IN MEDICAL SCHOOLS.

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With the growth of the curriculum in our medical schools, the urgent necessity has arisen of either lengthening the number of years of medical study from four to five, or of so adapting ourselves to the needs of the medical student that some way must be found out of the difficulty.

This increase in the number of subjects of study has arisen in two ways: 1. The development of the various laboratory subjects (and by this I include anatomy, physiology, histology, chemistry and pathology) has necessitated the devotion of practically the entire first two, to so-called theoretical branches, leaving the practical branch to the last two years. 2. The rapid development of the special branches of both medicine and surgery (gynecology is included in the latter), has taxed the number of hours in the school year to the utmost. An effort has been made in some schools to correct this latter growth, that is, practical branches, by dropping didactic lectures entirely and devoting the third and fourth years almost exclusively to demonstrations and clinical work at the bedside or in the dispensary, or hospital amphitheater. Even with the latter change, the medical schools in our larger cities have found it impossible to give every student the necessary personal contact with both teacher and patient, which is the prerequisite of thorough medical education. When we consider that the classes in our larger medical schools average from 150 to 200 in the junior and senior years, respectively, it will be readily seen that the old-fashioned amphitheater clinics can no longer be profitable to either teacher or student. I have stated above that we must find some way out of the difficulty, and I am firmly convinced that the proper application of the elective system of our medical curriculum will solve this problem better than any other method. In an article written by me two years ago I strongly advo-

cated this system from a merely theoretical standpoint. Since the publication of my article the elective system has been adopted by the college with which I am connected, and after one year's trial both faculty and students agree that it has been a great success. The reason for this success has been that we have not applied the elective system without restriction. It was thought by our faculty that the limited application of election on the part of the students would be of far greater value than if they were permitted to select both teachers and subjects without some guidance. In the first place, we have applied the elective system to the third and fourth years only. During the first and second years the student, as in other schools, takes up his anatomy, physiology, chemistry, materia medica, histology, biology, embryology, therapeutics, surgical pathology, hygiene and bacteriology, in a more or less routine manner, so as to get a thorough foundation for the more practical work of the following two years. In addition to these laboratory subjects, elementary clinics, as they were called, were held by the professors of the third and fourth years twice a week. When the students enter the third and fourth years they find the following schedule:

JUNIOR YEAR.

SPECIFIED REQUIRED SUBJECTS.

	Hours.
1. Neurology	72
2. Physical diagnosis	54
3. Dermatology	36
4. Principles and practice of surgery	144
5. Orthopedic surgery	36
6. Operative surgery	36
7. Laryngology, rhinology and otology	36
8. Genito-urinary diseases	36
9. Clinical Anatomy	36
10. Microscopic and chemical diagnosis	66
11. Medical jurisprudence	36
12. Autopsies	36
13. Dispensary clinics	54
	678

ELECTIVE SUBJECTS.

1. Medicine (didactic work), lectures and recitations in four courses of 54 hours each: Course A. Infectious diseases and intoxications. Course B. Constitutional diseases and diseases of the kidneys. Course C. Diseases of the digestive organs. Course D. Diseases of the heart and lungs. Total	216
2. Obstetrics	72
3. Gynecology	36
4. Medical amphitheater clinics	216
5. Neurologic amphitheater clinics	72
6. Surgical amphitheater clinics	180
7. Dermatologic amphitheater clinics	72
8. Laryngologic amphitheater clinics	72
9. Gynecologic amphitheater clinics	144
	1,080

Total number of hours.....1,758

SENIOR YEAR.

SPECIFIED REQUIRED SUBJECTS.

	Hours.
1. Medicine	216
2. Psychiatry	36
3. Chest diseases	36
4. Pediatrics	54
5. Ophthalmology	18
6. Obstetrics	72
7. Gynecology	36
8. Autopsies	36
9. Dispensary clinics	54
	558

ELECTIVE SUBJECTS.

1. Neurology	72
2. Surgery	72
3. Medical amphitheater clinics	252
4. Neurologic amphitheater clinics	72
5. Pediatric amphitheater clinics	72
6. Surgical amphitheater clinics	468
7. Ophthalmologic amphitheater clinics	108
8. Gynecologic amphitheater clinics	108
	1,224

Total number of hours.....1,782

In the junior year a total of 1,758 hours of instruction are offered, and in the senior year a total of 1,782