SCIENCE

FRIDAY, MARCH 16, 1888.

THE MOST INTERESTING and the most valuable article in the *Popular Science Monthly* for March is one entitled 'The Antechamber of Consciousness,' by Mr. Francis Speir, jun. It embodies the result of some carefully planned investigations in psychology for the purpose of weighing anew the argument for unconscious cerebration. The mode of presentation is excellent, and shows an acquaintance with scientific method. The facts are presented by themselves without comment, and the discussion of them follows. The facts, and the writer's opinion concerning the facts, are, as they should be, kept quite distinct. The method adopted for the accumulation of data was the well-known one of distributing printed questions, to be answered from personal experience. The question in which the inquiry centred was, 'Does there exist in man the power to exert intellectual activity during unconsciousness?' The answers are grouped and summarized under four heads; (*a*) when the effort is simple, by reproducing past experiences in obedience to a mandate of the will; (*b*) by comparing related facts, and arriving at a settled judgment; (*c*) when the effort is more complex, by continuing old trains of thought begun in consciousness, and proceeding logically, step by step, to a relative settled conclusion; (*d*) when the effort is most complex, by commencing and continuing new trains of thought without having voluntarily undertaken or continued them, and arriving at results of original creation as inventions, literary and musical creations, etc. Of the first, Mr. Speir says, "Almost every individual says concerning these experiences, 'They are of such frequent occurrence that when they happen I pay no special attention to them.'" Of the second it is said that many people, during a state of perfect unconsciousness, can accurately measure time as well as, and often better than, they can in consciousness. In doing this they may perform an intellectual process similar in all respects to the conscious act of calculating a distance between known points. Of the third, "about eighty-five per cent of those answering claim to have arrived at definite results of work begun in consciousness and left unfinished, at results of a finished logical nature, at results that could come only by bridging the gap between the beginning and partial continuation in consciousness, and the perfected conclusion by predicting the existence and operation of unconscious intellectual effort as the necessary cause of the known result." Of the fourth, "only thirty per cent claim to have suddenly discovered the results of creative effort; these creations appeared suddenly, most often while the individuals were engaged in matters foreign to the discovery." All these voluminous answers could not have been collected without patient effort; and psychologists should be very grateful to the writer for laying so much that is new before them. We trust that Mr. Speir will find time and opportunity to push these investigations further, and to complete his chain of evidence by additional data.

BACTERIOLOGY IN OUR MEDICAL SCHOOLS.

IT was stated in this paper some weeks ago that inquiries were on foot the purpose of which was to obtain information concerning the attitude of our medical schools and training-schools for nurses, toward the germ-theory of disease. For this purpose a circular was sent to each medical school in the country and each training-school for nurses, requesting information on this matter. In most cases the circular was sent to the dean of such institutions, and has asked replies to the questions given below. Answers to this circular have been received from quite a large number of schools, and direct personal inquiry has elicited information from others that have not responded to the circular. In these ways information has been obtained from the following institutions and physicians: —

1. University of Colorado, J. H. Kimball.
2. Medical Department of Yale College, New Haven, Conn., M. C. White.
3. Chicago Medical College, N. S. Davis.
4. College of Physicians and Surgeons, Chicago, Ill., A. Reeves Jackson.
5. Rush Medical College, Chicago, Ill., J. Adams Allen.
6. Medical College of Indiana, J. L. Thompson.
7. Hospital College of Medicine, Louisville, Ky., W. H. Bolling.
8. Medical Department of Tulane University, New Orleans, La., S. E. Chaille.
9. College of Physicians and Surgeons, Baltimore, Md.
10. Harvard College, Cambridge, Mass.
11. University of Michigan, H. Sewell.
12. Minnesota College of Physicians and Surgeons, J. T. Moore.
13. Minnesota Hospital College, F. A. Dunsmoor.
14. C. H. Hunter, Minneapolis, Minn.
15. Kansas City Medical College, Missouri, E. W. Schauffler.
16. North-western Medical College of St. Joseph, Mo., F. A. Simmons.
17. Medical Department of Buffalo University, Buffalo, N.Y., T. F. Rochester.
18. New York Medical College for Women, C. S. Lozier.
19. Medical College of Ohio, J. T. Whittaker.
20. Jefferson Medical College, Philadelphia, Penn., Morris Longstreth.
21. University of Pennsylvania, William Osler.
22. Pulte Medical College, Cincinnati, O., J. D. Buck.
23. Hahnemann Medical College, Philadelphia, A. R. Thomas.
24. Bellevue Hospital Medical College, New York.
25. College of Physicians and Surgeons, New York.
26. Medical Department of City of New York.
27. American Medical College, St. Louis, Mo., E. Younkin.
28. Long Island College Hospital, C. Jewett.

The schools in this list will hereafter be referred to by the numbers affixed against them.

This list includes about one-fourth of the medical schools of the country; but inasmuch as it includes all of the largest schools, the proportion of students thus represented is much larger. Nearly one-half of the medical students of the country are in attendance upon the schools represented in the above list.

The answers received to some of the questions show in many cases so much similarity, that it is not necessary to give them all here in detail. The following summary will indicate the questions, and the substance of the replies: —

Question 1. Is the theory that most, if not all, infectious diseases are caused by the growth of microscopic organisms, accepted by the members of your faculty and the physicians in your vicinity?

To this question the responses have been in the affirmative in almost every instance.

Nos. 3 and 22 change the question so that it reads, "caused or accompanied by," and then answer in the affirmative. This, of course, changes completely the significance of the answer; for, if the causal connection between the microbe and the disease is denied, there is nothing left of the germ-theory.

No. 5 says, "No."

No. 7 says, "Some absolutely, some *cum grano salis*."

No. 12. "Opinions still divided, a majority of the more modern thinkers falling in with that view."

No. 27. "Not wholly."

No. 28. "No, we are not wedded to this theory. It may be true, but it may not."