which is to continue until January, 1911, and to be followed by a "seminary" course in 1911–12. Professor Boas begins in November, 1910, Professor Richet in January, 1911, etc. The qualifications for enrolment are graduation from a university school (college) and high honors in subjects related to that to be pursued. The first course given under these restrictions had an enrolment of fifty-five. It is expected that these professors will devote their courses to research as well as to instruction.

AT the University of Pennsylvania, Dr. Arthur Holmes and Dr. F. M. Urban have been advanced to assistant professorships and Mr. S. F. Fernberger to an instructorship in psychology.

AT Western Reserve University, Mr. William L. Dolley has been appointed instructor in biology, and Mr. Edward H. Sensel instructor in chemistry.

MR. A. E. SHIPLEY, F.R.S., fellow and tutor of Christ's College, Cambridge University, has been elected master of the college in succession to the late Dr. John Peile.

THE dedication exercises for the new building for entomology, zoology and geology at the Massachusetts Agricultural College will be held Friday, November 11. Dr. L. O. Howard, of Washington, will give the dedicatory address. The building is 100 by 120 feet, of colonial style and of the letter H design. It is made of brick, steel and concrete, thus giving a fire-resisting structure. It was built and equipped at a cost of about $95,000. In the basement are spacious laboratories for geology and mineralogy and a rock museum; also a laboratory for insecticide analysis and two rooms for spraying apparatus. On the first floor are two large laboratories for zoology and the main floor of the zoological museum; also two rooms and an office for the experimental work in entomology with a greenhouse attached and three offices for the department of zoology and geology. On the third floor are two large laboratories for entomology, an insect collection room, a small lecture room and the library; also a laboratory for advanced zoology, the gallery of the zoological museum and two offices for the department of entomology. In the main part of the building there is also a large amphitheater lecture hall. Professor H. T. Fernald is at the head of the department of entomology and Professor C. E. Gordon at the head of the department of zoology and geology.

DISCUSSION AND CORRESPONDENCE

THE LOCUS OF A MOVING POINT WHEN THE QUOTIENT OF ITS DISTANCES FROM TWO FIXED POINTS IS CONSTANT

REFERRING to the digest of a paper by Mr. John F. Lanneau under the above-mentioned title, in SCIENCE, No. 806, it may be of interest to state that the locus is of importance in the theory of electric cables and transmission lines. The circles represent the directions of magnetic lines of force, created by a current through a loop consisting of two parallel wires. The orthogonal system of circles corresponds to electrostatic stresses between the wires. Or else, the first system determines equipotential electrostatic surfaces, while the second system gives surfaces of equal electromagnetic potential.

When telephone wires run parallel to a power transmission line it is of importance to place each telephone loop in such a position with respect to the power line, as to have a minimum of inductive disturbance, that is to say, a minimum of roaring in the telephone. For this purpose it is convenient to draw the circles in question, representing magnetic lines of force around the power transmission line. The two wires of the telephone line must lie on the same circle. In the case of a three-phase line the same is split, for the purposes of computation, into two single-phase lines, and circles are drawn for each loop separately. The telephone wires are located so as to lie approximately on some one circle belonging to each single-phase loop.

The two fixed points in Mr. Lanneau's problem are *inverse* points with respect to the system of circles; this is according to a well-known theorem in elementary geometry. They do not coincide with the centers of the wires in the electrical problem. The cross-sections

of the wires belong to the system of the loci, and the fixed points are found from the condition that the radius of the circle is a mean proportional between the distances from the center to the inverse points.

Cornell University, V. Karapetoff
June 25, 1910

QUOTATIONS

THE DOCTOR AND THE PUBLIC

In an article entitled "The Widening Sphere of Medicine," but which might as appropriately have been entitled "The Doctor and the Public," read last year as the Shattuck lecture before the Massachusetts Medical Society, and now printed by the department of neurology of Harvard University,[1] Dr. E. W. Taylor, of Boston, indicates and attempts to estimate the significance of various well-defined tendencies in present-day medicine. Dr. Taylor was led to this subject by a consideration of the rapidly widening scope of medical theory and practise, with its new and unique opportunities, and the apparent disinclination on the part of many men of promise and varied attainments to take up medicine as a career. What, however, must strike every reader of Dr. Taylor's wise and scholarly address is not so much the natural extension and development of the scope and attainments of medical science, extraordinary though these have been, nor the avoidance of medicine as a career by men of outstanding ability—an economic problem possibly more felt in America than here—but the manner in which the writer discerns the new conceptions and ideals which have accompanied the development of medical science, lays bare the significance of certain economic adjustments, and, as if from some point of vantage, scans the signs of the times and foretells the dawn of a new era in the aims and practise of medicine.

Archbishop Trench said that a man might fairly be assumed to remember clearly and well for sixty years back, and that only five of these sixties would carry us back to the age of Spenser, and not more than eight to the time of Chaucer and Wiclif. In that time the English language has become metamorphosed; yet any one of the imagined series of eight men, Dr. Trench said, would have denied that there had been in his lifetime any change worth mentioning. It can not be said that the statement holds good for medicine. The changes in a single lifetime have been so great, the innovations—anesthesia, antisepsis, bacteriology, and in the minute anatomy of the body, to name only a few—so startling, that new sciences have sprung into being and the medical man of to-day speaks a different language even from his immediate predecessor. These changes strike everybody, but changes—perhaps more revolutionary, though less noticeable—are now in process, and they concern the relations susbsisting between the medical man and the public. It is to this altered phase that Dr. Taylor draws attention, and it is to meet the altered conditions that he desiderates corresponding adaptations in the teaching faculties.

One of the first of these changes to which Dr. Taylor alludes is the absence of secrecy. From time immemorial medicine has been a secret art. Even a generation ago the apprentice was bound by agreement "not to reveal or to divulge any of his master's secrets *or the secrets of his profession*"; to-day the medical practitioner, in his relations with a private patient, frequently explains not only the nature of the case, but the *rationale* of the treatment, with the hope of securing the patient's willing cooperation. What Dr. Taylor calls this gradual removal of mystery has had far-reaching effects. The doctor's mere dictum no longer carries weight; "his Latin prescriptions, if he still writes them, are doubtfully scrutinized, and the patient more and more demands to know what he is taking and why; he readily seeks other advice outside the profession if the expected benefit does not result from the treatment prescribed. . . . The doctor of the present day shares the practise of medicine as never before with persons

[1] "The Widening Sphere of Medicine," the Shattuck lecture before the Massachusetts Medical Society, June, 1909, by E. W. Taylor, M.D., Boston, department of neurology, Harvard Medical School, Vol. IV., 1910.