UNIVERSITY AND EDUCATIONAL NEWS

FIRMS in Manchester have offered to the College of Technology, Manchester, the sum of £3,000, spread over a period of five years, towards the cost of establishing a new department of industrial management.

ACCORDING to the *Journal of the American Medical Association* the conflict that has been going on in the University of Cordoba has grown more acute. The rector and several of the members of the faculties have presented their resignations. The head of the national government has appointed the minister of public instruction to take charge of the matter personally, and reorganize the staff of the university. At the request of the minister of public instruction, the medical faculty of the university of Buenos Aires did not appoint a new dean at the close of the term of office of Dr. Bazterrica, and this post is filled provisionally by the member of the university council who has been longest in office, Dr. E. Canton, until the reorganization of the university statutes has been sanctioned.

DR. WITHROW MORSE has been appointed professor of physiological chemistry in the medical school of the University of West Virginia, Morgantown.

DR. EUGENE L. PORTER, instructor in physiology at the Medical School of the University of Pennsylvania, has accepted the position of assistant professor of physiology at the Western Reserve University Medical school.

OWING to the death of Professor R. E. Sheldon and the resignation of several members of the staff, the department of anatomy, University of Pittsburgh has been reorganized. The present members of the instructing staff are Professor Robert Retzer, associate professor C. C. Macklin and Assistant Professor Harley N. Gould.

DISCUSSION AND CORRESPONDENCE

CORRELATION OF THE HYDROGEN-ION EXPONENT AND OCCURRENCE OF BACTERIA IN SOIL

IN an interesting note in SCIENCE (Vol. 48, pp. 139–140), followed by a fuller account in the *Journal of Agricultural Research* (Vol. 14, No. 7, pp. 265–271, 1918), Mr. P. L. Gainey has recently described experiments showing that the occurrence of *Azotobacter* in soils is controlled, apparently to a major extent, by the hydrogen-ion concentration, the limiting hydrogen-ion exponent being about 6.0. Previously to this, Christensen in Denmark had described some experiments on this general subject,[1] besides those reviewed by Gainey.

Christensen mentions having applied the *Azotobacter* test and the litmus paper test together to about 40,000 soil specimens. He found a general correlation between acidity to litmus and absence of *Azotobacter*. He also found a close correlation between the *Azotobacter* test and a para-nitrophenol test: "In the case of soils showing a neutral reaction for litmus, there is a distinct difference between the two groups,—with and without *Azotobacter* vegetation,—for the former colors the liquid (para-nitrophenol) somewhat more yellow than the latter." In applying para-nitrophenol, a solution of it was mixed with the soil, and the soil particles allowed to settle out over night.

There is considerable objection against mixing the indicator with the soil mass, and especially in the case of a one-colored indicator like para-nitrophenol, for any loss of indicator due to absorption by the soil mass would not be distinguishable from an actual color discharge due to acidity. The procedure of Christensen has been checked only by means of the litmus paper and the *Azotobacter* test itself. If the absorption of indicator is not serious, the results of Christensen can be interpreted in terms of hydrogen-ion exponent and are then in accord with the results of Gainey, for the turning point of para-nitrophenol is about 6.

The procedure used by Gainey, on the other hand, is the one used by the writer in 1916, tested by means of electrometric measurements of the soil suspension, and found to give at least approximately correct results.[2]

[1] *Soil Science*, Vol. 4, pp. 115–178, 1917.

[2] *Jour. Wash. Acad. Sci.*, Vol. 6, pp. 7–16, 1916.