

tered in Ireland during 1909 numbered 22,650, the births 102,759, and the deaths 74,973. The marriage rate was 5.18 per 1,000 of the estimated population (a decrease of 0.02 as compared with that for 1908, but an increase of 0.06 against the average rate for the ten years); the birth-rate was 23.5 per 1,000 (0.2 above the preceding year and 0.3 above the average); and the death-rate 17.2 per 1,000 (0.4 below the previous year and 0.6 below the average). An estimate of the progress of elementary education was formed from the signatures made by the contracting parties in the marriage registers or certificates. In 1909 93.5 per cent. of the husbands and 95.0 per cent. of the wives wrote their names, the remainder signing by marks, as against 86.8 and 88.6 per cent. in 1899, 78.8 and 78.0 per cent. in 1889, and 72.0 and 67.1 per cent. in 1879.

UNIVERSITY AND EDUCATIONAL NEWS

THE Sproul Observatory, of Swarthmore College, is nearing completion. The telescope, which will have a twenty-four-inch aperture, is being constructed at Allegheny, and will probably be installed this coming year. In the same building will be installed a new refracting telescope, the gift of Mr. Stephen Loines, of New York.

THE Tuskegee Institute will receive about \$400,000 from the estate of Mrs. Dotger, and the Hampden Institute will receive about \$250,000 from the estate of Miss Alice Byington.

By the death of Mrs. Mary Hunt Loomis, the estate of the late Colonel John Mason Loomis, amounting to more than \$1,000,000, will, it is said, go to the establishment of a technical school at Windsor, Conn.

THE Supreme Court has granted an injunction to the stepchildren of the late George Crocker, restraining the executors from selling the property which was bequeathed to Columbia University for a cancer research fund.

BRYN MAWR COLLEGE will celebrate the twenty-fifth anniversary of its opening on October 21 and 22. Among the speakers will

be President Remsen, of the Johns Hopkins University, and President Lowell, of Harvard University.

DR. CHARLES C. HARRISON, provost of the University of Pennsylvania, has tendered his resignation to the board of trustees, to take effect at the end of the present academic year.

THE following promotions and appointments have been made in the chemical department of the University of Illinois: Edward Bartow, professor of analytical chemistry; C. W. Balke, assistant professor of inorganic chemistry; E. W. Washburn, assistant professor of physical chemistry; instructors, Ellen S. McCarthy (Ph.D., Cornell), C. G. Derick (Ph.D., Illinois), Paul E. Howe (Ph.D., Illinois); research assistants, Josef Hecht (Ph.D., Vienna); assistants, H. P. Corson (N. H.), J. H. Mitchell (Ala. Poly. Inst.), C. J. Baker (Univ. of Denver); graduate assistants, H. B. Gordon (Miami), H. H. Radcliffe (Ind. Univ.), G. E. Ostrom (Augustana), N. R. Blaterwick (Grinnell), D. W. Wilson (Grinnell), C. P. Sherwin (Ind. Univ.), E. L. Ross (Iowa State Agr. College), J. H. Bornmann (Illinois); fellows, S. J. Bates (McMaster Univ.), J. W. Read (Missouri), A. A. Schlichte (Michigan), L. R. Littleton (Tulane); graduate scholars, P. S. Burgess (R. I. State College), G. W. Sears (Drury College).

DR. C. C. GROVE has been appointed assistant professor of mathematics at Columbia University.

MR. H. BATEMAN, fellow of Trinity College, Cambridge, and lecturer in mathematics in the University of Manchester, has accepted an appointment in the department of mathematics of Bryn Mawr College.

J. F. DANIEL, Ph.D. (Hopkins), has been appointed instructor of comparative anatomy at the University of California.

EDITH M. TWISS, A.B. (Ohio State University, 1895), Ph.D. (Chicago, 1909), has been appointed assistant professor of botany with charge of plant physiology and bacteriology at Washburn College, Topeka, Kansas. For some years Miss Twiss has taught in the Cleveland High Schools.

THOMAS M. HILLS, Ph.B. (Wooster), and a recent graduate student in the University of Chicago, has been appointed assistant professor of geology in the Ohio State University.

CHARLES B. WILSON, Ph.D. (Hopkins), has been appointed professor of biology at the State Normal School, Westfield, Mass.

DISCUSSION AND CORRESPONDENCE

AMCEBA MELEAGRIDIS

TO THE EDITOR OF SCIENCE: Nearly two years ago there appeared in this journal a communication by Drs. L. J. Cole and P. B. Hadley,¹ concerning the etiology of a protozoan disease of turkeys which demands some notice on my part.

The disease in question was investigated by me in 1894 and described in detail in a bulletin of the Bureau of Animal Industry, U. S. Department of Agriculture which was published in 1895. The disease is confined to the two cæca and the liver. Minute round bodies not more than 8-12 μ in diameter appear in enormous numbers in the submucous and intramuscular tissue of the walls of the cæca and may extend even beyond these to the mesenteries. In the liver there are circular spots, representing partial necrosis of the liver tissue and in these spots the same organisms are also present in great numbers. This parasite I assumed to be an amoeba and called it *A. meleagridis*. The analogy between it and human amebiasis was very close.

In the communication of Drs. Cole and Hadley, my interpretation of the parasite is promptly disposed of and the latter stated to be a stage in the life history of the common coccidium of fowls and other domesticated and wild birds. This coccidium has been known since Rivolta first described it in 1878. Though I felt grave misgivings concerning the position taken by these writers, I nevertheless refrained from expressing my views until a full report should have appeared. In the meantime my patience has been tried by repeated iterations of the statements in various journals, scientific and practical, without any offer of proof that their position had any

¹ 1908, N. S., Vol. XXVII., p. 994.

basis in fact. At last two and a half years after their preliminary statement a bulletin² appears.

As an illustration of the way "facts" will grow when unchallenged I select the following statements from preliminary papers:

Since the investigations of Theobald Smith published in 1895 it has been commonly believed that the disease [blackhead] is due to an amoeba, *A. meleagridis* Smith. The present writers believe³ they have demonstrated, however, that the disease is caused by a coccidium which according to the nomenclature adopted may be a variety of *C. cuniculi* and that *A. meleagridis* is probably the schizont stage in the development of the coccidium.⁴

The discovery that the so-called blackhead of turkeys so common in this country is a form of coccidiosis (SCIENCE, 1908, N. S., XXVII., p. 994) and that the causative organism *C. cuniculi* is one of the most important factors in the causation of the so-called white diarrhoea of chicks and of some cases of roup in fowls, has called the attention of the student of protozoology in this country to the presence of a protozoan parasite whose ravages are annually costing the country hundreds of thousands of dollars.⁵

These excerpts speak for themselves. A "belief" becomes a "discovery" a year later, although no published data accompany the belief or precede the discovery. The discovery consists in fitting together two parasites both regarded as distinct for many years. Furthermore, the avian coccidium is identified with the rabbit coccidium without proof. It is made the "most important factor" of a diarrhoeal disease of chicks and of roup in fowls, also without proof. Roup has defied many investigators and is due probably to an invisible virus.

The full report now before us confirms my suspicions that the demonstration and discovery represented merely an inference or hypothesis. Yet upon this the report is built as if it were an assured fact. Nothing whatever

² No. 141, Rhode Island Agric. Exp. Station.

³ Italics mine.

⁴ Cole and Hadley, SCIENCE, 1908, N. S., XXVII., p. 994.

⁵ Hadley in *Centralbl. f. Bakt., Erste Abth. Orig.*, 1909, 52, p. 147.