period of three years, and cost more than $100,000.

UNIVERSITY AND EDUCATIONAL NEWS

THE Yale University School of Medicine will receive $14,845 by the will of Norman B. Bayley.

THE new master of Magdalene College, Cambridge, Mr. A. C. Benson, has established a Charles Kingsley lectureship in natural science in the college with an income of £150.

A SCHOOL of applied social sciences will be opened at Western Reserve University, at the beginning of the next academic year. It will be a graduate school with a two-year course, in which supervised field work will be an essential part of the plan.

AT the University of Cambridge the proposed grace relating to the admission of women to the first and second M.B. examinations and the examination in architectural studies has been withdrawn, in order that reports on the subjects may be presented to the senate by the boards concerned.

MR. J. H. HILL has been appointed professor of mathematics at the Ohio Northern University.

R. L. DAUGHERTY has been appointed professor of hydraulic engineering at Rensselaer Polytechnic Institute. He has for the past six years been assistant professor of hydraulics in Sibley College, Cornell University. He succeeds at Rensselaer Professor Lewis F. Moody who has gone into private practise. Professor Daugherty is the author of "Hydraulic Turbines," "Centrifugal Pumps" and "Hydraulics." He graduated from Leland Stanford University in 1909 and was an instructor in experimental engineering there the following year.

THE following appointments have been made to the medical faculty of New York University: clinical professors of surgery, Drs. Joseph B. Bissell, Thomas A. Smith, Walter C. Cramp and Arthur M. Wright; professor of clinical surgery, Dr. William C. Lusk; chief of clinic, department of surgery, college dispensary and instructor in surgery, Dr. W. Howard Barber; instructor in surgery, Dr. George Francis Cahill; clinical professor of medicine, Dr. Theodore J. Abbott; instructor in medicine, Dr. Hubert V. Guile; clinical professor of cancer research, Dr. Benjamin M. Levine; assistant professor of bacteriology and hygiene, Dr. Charles Krumiede, and instructor in bacteriology, Miss Mary Smeeton.

DISCUSSION AND CORRESPONDENCE

BEES AND MENDELISM

SOME confusion of thought as regards Mendelian expectations is apparent in Mr. Quinn's article[1] dealing with his interesting observations on the inheritance of body color in crosses of Italian with Caucasian bees. Mr. Quinn considers that his observations are not in accord with those of Newell because the latter concluded that "the production of an F_1 (heterozygous) drone seems to be an impossibility and this, in turn, makes the production of a strict F_2 generation look like another impossibility." But Quinn reports obtaining a typical 1:2:1 ratio of pure yellow: heterozygous yellow: pure gray queens in F_2, which he considers evidence that the drones as well as the queens of the F_1 generation are heterozygotes. This would indeed be true if a single F_1 queen mated with a single drone gave the result stated. But Quinn does not so report the facts. His statement apparently applies to the F_2 queens considered collectively, not to those produced by a single F_1 mother. If, as both Newell and Quinn suppose, all F_1 queens are heterozygotes and produce equal numbers of I and C gametes, and if they are mated some with pure I and others with pure C drones, then the expectation as regards their female offspring is that actually observed by Quinn. For a mating with a pure I drone should produce 1 II + 1 IC zygotes; and a mating with a pure C drone should produce 1 IC + 1 CC zygotes; and if the two kinds of matings are equally productive, their combined result would be 1 II + 2 IC + 1 CC, as reported by Quinn. It is therefore unneces-

[1] SCIENCE, June 30, 1916.

sary to assume from the facts reported that the drones of the F_1 generation are heterozygous as regards color. If this fact were established, it would disprove the Dzierzon theory, which is supported by so many distinct lines of evidence and thus far contradicted by none. A very direct test of the assumption that F_1 males are heterzygous could be made by mating them with queens of pure race. Such matings should produce mixed broods, if the drones are indeed heterozygous, but otherwise not.

We may conclude that the facts reported by both Newell and Quinn are credible since (1) they are really not at variance with each other, (2) they have been made independently by experienced observers in the wonderfully favorable environment of Texas and (3) their observations accord with previous knowledge. The credibility of Quinn's report is increased, not lessened, by the fact that he supposed his observations were at variance with prevalent theories.

Quinn's observations do not call in question the Mendelian inheritance of yellow body-color in crosses, but Newell reported some facts which might lead one to doubt the completeness of segregation in all cases, such as the production of drones of intermediate color. The orthodox Mendelian and the devotee of "exact" heredity will probably close his eyes to such troublesome facts, but the student of heredity who is not convinced of the finality of present knowledge might do well to keep them in view.

William E. Castle

Bussey Institution,
July 1, 1916

NOTE ON A MORAINE IN NORTHWESTERN NEW ENGLAND[1]

A recessional moraine consisting of several separate segments disposed along a sinuous course lies near the Atlantic coast, and has been traced through 60 miles from Saco, Maine, to Newbury, Mass. It stands for the most part at about or less than 100 feet above sea level, but rises to 150 feet in Dover, N. H., and Newburyport, Mass., and to between 200 and 250 feet in Wells and South Berwick, and although not more than 40 to 100 feet higher than surrounding Pleistocene formations, it is topographically prominent. The moraine rests upon and is surrounded by a floor of ice-smoothed rock and of till. During the building of the moraine the region was submerged so that the ice front stood in the sea. The moraine is the result of accumulation of glacio-fluvial detritus discharged directly into the sea; consequently in some places it is built up as broad, flat, delta-like plains. Clay ("Leda clay") which is glacial outwash was continuously deposited in the sea both while the moraine was building and also after the ice retreated from the moraine, so that the younger clay beds in some places overlie the moraine. The moraine and the marine clay probably belong to a late Wisconsin sub-stage of the Pleistocene epoch.

Further description and discussion of this moraine will appear in a paper to be published by the United States Geological Survey.

Frank J. Katz

[1] Published by permission of Director of U. S. Geological Survey.

NEPTUNIUM

In response to Professor Emerson's request for information concerning this element I beg to present the following:

Neptunium was announced by K. Hermann in 1877 (Pharm. Central H., June 7, 1877, p. 186, through the *Proceedings of the American Pharm. Assn.*, 1877, p. 268).

It is described as belonging to the "tantalum group," of the atomic weight 118, and as occurring in certain rare earths associated with tantalum and niobium.

J. F. Couch

Des Moines, Iowa

SCIENTIFIC BOOKS

Psychological Effects of Alcohol. An Experimental Investigation of the Effects of Moderate Doses of Ethyl Alcohol on a Related Group of Neuro-muscular Processes in Man. By Raymond Dodge and Francis G. Benedict, Carnegie Institution of Washington, Washington, D. C., 1915.