

results. Mr. Samuel J. Guernsey carried on archeological researches in New Brunswick for the museum. The museum had a party in Ohio under the direction of Mr. B. W. Merwin, and the long-continued exploration of the ancient cemetery at Madisonville, as well as the famous Turner Group of Mounds in the same region, has been completed.

UNIVERSITY AND EDUCATIONAL NEWS

It is announced that the sum of \$1,526,965 has been collected for McGill University. Included in the sum are three subscriptions of \$100,000 each from Dr. James Douglas, of New York, Mr. Robert Reford and the Birks family, of Montreal.

Last year Mr. John D. Rockefeller offered to give \$250,000 to a special endowment fund of the Medical Department of Western Reserve University on condition that a total fund of a million dollars was given. At that time Mr. H. M. Hanna gave \$250,000 as part of the required amount. It is now announced that the sum of \$429,000 has been given, leaving \$71,000 to be collected before December 31.

DARTMOUTH COLLEGE will eventually receive what is believed to be approximately \$200,000 by the will of Elijah M. Topliff, of Manchester, N. H.

NEW greenhouses have been erected at the University of Vermont at a cost of \$7,000. The buildings consist of a head house 24×84 feet, a story and a half high, and three parallel glass houses each 20×60 feet. These houses are for the combined use of the department of horticulture, botany and plant pathology: one of the houses is entirely for experimental work, and will be occupied by the experiment station men; the other two houses are for teaching purposes.

THE registration of students in several of the larger universities is reported to be as follows: Columbia, 7,429; Chicago, 6,466; Minnesota, 5,965; Wisconsin, 5,538; Pennsylvania, 5,389; Michigan, 5,381; Cornell, 5,104; Illinois, 5,118; Harvard, 5,028; Nebraska, 4,624; California, 3,450; Missouri, 3,141.

RECENT appointments in St. Louis University School of Medicine are: A. S. Pearse, Ph.D. (Harvard), associate professor of biology, in charge of the department; H. G. Bristow, A.M. (Missouri), instructor in chemistry; A. M. Brown, A.M. (Washington University), assistant in biology; L. F. Shackell, B.S. (St. Louis), instructor in pharmacology.

DR. CHARLES SHEARD has resigned as professor of preventive medicine in the University of Toronto.

M. RANVIER, professor of general anatomy at the Collège de France, has, at his own request, been allowed to retire.

DISCUSSION AND CORRESPONDENCE

THE FRANCIS GALTON LABORATORY FOR NATIONAL EUGENICS

TO THE EDITOR OF SCIENCE: In examining the correspondence of the late Sir Francis Galton I find very many appreciative letters concerning his work from Americans distinguished in science or social activities. Sir Francis held the faith—and did much to demonstrate it—that man both mentally and physically was the product of his ancestry, and that accordingly when this was once fully recognized, man could achieve a greater future by encouraging the multiplication of the fit, and restricting the production of the unfit. He devoted most of the later years of his life to preaching this gospel and left the residue of his fortune to maintain the staff of the laboratory which bears his name. The science of eugenics, defined as “the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally,” has been his creation. The idea that we can study at the university what makes for or mars national welfare is not a narrow one, it is essentially international in character. And that view of it is emphasized by Sir Francis Galton’s world-wide correspondence. That correspondence leads me to believe that in America, and elsewhere, there may be men and women willing to aid us in founding a worthy memorial

to the life-work of Sir Francis Galton—to his great idea that the future of mankind lies largely in man's own hands, if he will but pay the same attention to his own reproduction that he gives to that of his cattle and his dogs.

The memorial to Sir Francis has taken the fitting form of a building, with public museum, library and lecture hall, with rooms for research students, for experimental work, and for staff—to be called the Galton Laboratory. The sum required is \$70,000, of which nearly \$12,000 have already been subscribed by Sir Francis's personal and scientific friends in this country. Any one wishing to aid in this memorial to a man, scarcely less noteworthy in science than his cousin Charles Darwin, should communicate with Sir Edward Henry Busk, the treasurer to the Francis Galton Memorial Fund, University of London, England.

KARL PEARSON

AN EARLY DISCUSSION OF HEREDITY

I HAVE lately come across a passage which seems worthy of being put on record against the time when the history of opinion and discovery in the science of heredity comes to be written. It is to be found in a work entitled "The Religion of Nature Delineated," by William Wollaston, some time of Sidney Sussex College at Cambridge, a member of the distinguished family which has contributed so largely to scientific knowledge. In Section VIII. of that work, dealing with "Truths Concerning Families and Relations," the author argues that the affection which determines the sense of obligation between relatives is directly dependent upon the intensity of the consanguinity that exists between them. Such consanguinity is regarded as a physical relation which decreases in geometrical proportion with each succeeding generation. The passage would appear to be an adumbration of the views subsequently elaborated by Francis Galton and others. I know of no earlier statement of the quantitative aspect of hereditary phenomena, but should such be known to any of your readers I should be grateful for the reference. The passage transcribed below is

taken from a copy of the sixth edition of Wollaston's work which was published in 1738. The book originally appeared in 1722.

The foundation of all *natural relation* is laid in *marriage*. For the *husband* and *wife* having solemnly attached themselves each to other, having the same children, interests, etc., become so intimately related as to be reckoned united, *one flesh*, and in the laws of nations many times *one person*. Certainly they are such with respect to the posterity, who proceed from them jointly. The *children* of this couple are related between themselves by the mediation of the parents. For every one of them being of the *same blood* with their common parents, they are all of the same blood (*truly consanguinei*), the relations, which they respectively bear to their parents, meeting there as in their *center*. This is the *nearest* relation that can be, *next* to those of man and wife, parents and their children, who are *immediately* related by contact or rather continuity of blood, if one may speak so. The relation between the children of these children grows more *remote* and *dilute*, and in time wears out. For at every *remove* the natural tincture or sympathy may be supposed to be weakened; if for no other reason, yet for this. Every *remove* takes off *half* the common blood derived from the grandparents. For let *C* be the son of *A* and *B*, *D* the son of *C*, *E* of *D*, *F* of *E*: and let the *relation* of *C* to *A* and *B* be as 1: then the *relation* of *D* to *A* and *B* will be but $\frac{1}{2}$; because *C* is but one of the parents of *D*, and so the *relation* of *D* to *A* and *B* is but the half of that, which *C* bears to them. By proceeding after the same manner it will be found, that the *relation* of *E* to *A* and *B* is $\frac{1}{4}$ (or half of the half), of *F* $\frac{1}{8}$: and so on. So that the *relation*, which *descendents* in a direct line have by blood to their grandparents, *decreasing* thus in geometrical proportion, the *relation* between them of *collateral* lines, which passes and is made out through the grandparents, must soon be reduced to an inconsiderable matter.

If then we suppose this *affection* or sympathy, when it is permitted to act regularly and according to nature, no reason intervening to exalt or abate it, to operate with a strength nearly *proportionable* to the quantity or degree of relation, computed as above, we may perhaps nearly discern the *degrees* of that obligation, which persons related lie under, to assist each other, *from this motive*.

R. C. PUNNETT