drifting fainter, as one would hear the bells themselves in a shifting breeze.

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A HISTORIC FOSSIL

BOTANISTS and paleobotanists will be interested to hear that I have just received through an extraordinary courtesy of the custodians of the Zwinger Museum of Dresden a wedge cut from the historic cycadeoid *Raumeria Reichenbachiana*. This great petrifaction was first observed near Lednice, about three miles from Wieliczki in the salt region to the southeast of Cracow, in the year 1753. It was sent to Dresden by an engineer named Borlach in 1755, and thus has a longer museum history than any other cycadeoid. It is also the finest of all European trunks, and in fineness of structure is not surpassed by any American species. The true horizon is not yet known; but the trunk, along with the Silesian Raumeria Schulziana, must pertain to some horizon in the Galician Carpathians about equivalent to the Como or to the Lakota of the Black Hills.

The wedge was cut under the supervision of Dr. R. Kraeusel at Frankfurt am Main. It is ample for all study and comparison with the American and European forms. It carries nine complete floral axes, including the world-famous flower-bud illustrated by Goeppert in 1853, but, as so often happened with the cycadeoids, never studied. Paleobotanists will appreciate the fine discrimination shown by Dr. Kraeusel in taking his own initiative in cutting the wedge surface exactly to plate size for quarto illustration, while Americans may generally feel a deep satisfaction that an American laboratory has been entrusted with the investigation of this unique and famous fossil, certainly one of the three most celebrated fossils ever to reach this country from Europe.

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A PHILIPPINE RORQUAL

A LIVING specimen of the small sharp-nosed rorqual, *Balaenoptera rostrata* Gray, 32 feet long, was captured in Manila Bay, having stranded near Bacoor, Cavite Province, January 3, 1925. The animal died that afternoon and was hauled out on shore. Some speculative Filipinos paid 400 pesos for it, thinking to make a fortune by having it mounted for exhibition purposes. When seen by me about the middle of the forenoon of January 5th it was in an advanced state of decomposition, and the outer layer of skin was peeling off badly. The whale was shiny black above and much darker than given by Beddard in "A Book of Whales." The black faded to grayish black and dirty gray on the sides and posteriorly; the plaited folds of the throat and belly were yellowish white. The long shaggy bristles of the baleen were gray. The animal was a male and the pressure of the gases of decomposition forced out of the body the rigid penis. This organ was slender, rather pointed and small for so large an animal, being about 14 inches long. No parasites were found on the skin or in the mouth; it is probable that the brackish water in which the whale was kept at first had killed any parasites present and they had dropped off. This is the first record of this mammal from the Philippines.

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LEGISLATION ON THE TEACHING OF EVOLUTION

THERE appears in the recent translation of Kammerer's "Inheritance of Acquired Characteristics," by A. Paul Maerker-Branden, the following statement:

> Unfortunately, the so-called "fundamentalists," led by William Jennings Bryan and clergymen of different denominations—it seems unbelievable, but it is the sad truth—have succeeded in excluding evolution of man from the curriculum of the schools of North Carolina and Kentucky.

This statement is in part, at least, erroneous. Both of these states have recently had bills presented in the legislature to prohibit paying the salary, from state funds, of teachers presenting the theory of evolution as a fact. In each case the bills were defeated; in North Carolina by a vote as reported by newspapers of 64–46. Furthermore, the matter was voted on in North Carolina after the publication of this book. The vote in Kentucky was taken a couple of years ago and was closer.

This statement is made in order to "keep history straight."

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SCIENTIFIC BOOKS

Genetics and Eugenics. By W. E. CASTLE. Cambridge, Harvard University Press, 1924, viii + 434 pp.

A THIRD edition of Castle's "Genetics and Eugenics" is an event worthy of more than passing notice, especially since the new edition contains so much new matter. A new part has been added, devoted to the biological basis of genetics, which helps orient the reader concerning such fundamental matters as the cell, cell-division, reproduction (asexual and sexual), chromosome reduction and gametogenesis, variation in chromosome number, the chromosomes and

sex. In the main part of the book Castle sets forth the essential facts of genetics. Here he lays stress on the unit character principle—a principle whose importance is not proving to be as great as was anticipated. Apparently particular genes no more produce exclusively particular unit characters than particular endocrine glands affect merely particular somatic qualities. But there are prevailing or characteristic somatic effects which we associate with the presence or absence of particular genes. Castle would perhaps not accept this view, although it would help his own interpretation of his selection experiments. But that interpretation is now abandoned by Castle for that of gene mutation and multiple factors; and his presentation of the hypothesis of multiple factors is particularly clear. Many other complications in heredity are considered fully and clearly, such as mutations both in gametes and in soma (bud mutations). Inbreeding and cross-breeding are fully discussed; and the ground for the settlement of the long-standing controversy as to harmfulness of inbreeding is shown. Heredity of sex is rather fully considered.

Castle passes then in some new chapters very briefly to certain applications of genetical discoveries; improvement of live stock and of the human species. To the latter a whole part of the book is devoted, but this has not been greatly changed from the second edition. Finally, to the bibliography a large addition has been made, giving concrete evidence of the continued fecundity of genetical research.

Castle's "Genetics and Eugenics" is probably the standard college text-book covering the whole field in broad fashion. Its popularity is well deserved. If any criticism were to be suggested it might be directed toward a certain over-conservatism. Thus Castle concludes that mutation by variation in the number of chromosomes can not be a satisfactory general explanation of the origin of species. But neither can gene mutation, which he appears to regard as sufficient. He overlooks the large array of facts showing that in the species of a genus the chromosomes not infrequently differ by multiples of the smallest number in the genus. Also that the formation of tetraploids in mutations meet all the conditions for species formation; a new assemblage of several characters, more or less infertile with the parent species. A tenacity of views leads Castle to print for the third time (on page 43) his opinion that Darwin inherited a "good mind"—not a tendency toward natural history; this despite the great progress in the last few years in demonstrating the fundamental difference in special capacity (like music) of different strains of mankind.

The success of Castle's "Genetics" is largely due to his innate capacity for and experience in teaching. No doubt the need of putting things so that even immature college men can understand them has resulted in the marked clarity of the book. As a teacher he has seen the need of bringing the student into first-hand contact with the phenomena of genetics and so he has prepared an outline for a laboratory course in genetics. By use of the rapidly breeding banana fly and of dried ears of corn he has been able to bring students into contact with the methods and results of genetics within the span of a half year's course. This "outline" pamphlet includes valuable tables of deviation divided by probable error and the relative probability of occurrence of each genetic ratio; also of probable errors due to chance alone from various genetic ratios taken from Emerson. This "outline" will do much to put genetics on a proper pedagogic basis.

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SEGREGATION OF CARBOHYDRATES IN MAIZE POLLEN

KIESSELBACH and Peterson[1] in two recent articles have attempted to disprove the results of previous investigators with respect to visible segregation in maize pollen and to the occurrence of more than ten haploid chromosomes in maize.

It is now generally accepted that the stored carbohydrate in the seeds of waxy maize stains red with iodine in sharp contrast with the violet reaction of the starch of non-waxy varieties, a condition first pointed out by Weatherwax and fully corroborated by other investigators. The waxy character behaves as a simple Mendelian unit recessive to the horny form, and back-crosses of heterozygous plants clearly show that one half of the pollen carries the gene for waxy and the other the gene for the horny allelomorph. Further, if pollen from F_1 plants is stained with a dilute solution of iodine, approximately half the grains give the characteristic violet color of starch, while the other half stain a reddish brown, a phenomenon clearly analogous to the distinction found in the seeds.

This differential staining of the pollen has been reported by Demerec,[2] Brink and MacGillivray,[3] and

[1] Kiesselbach, T. A., and Petersen, N. F., "The chromosome number of maize," *Genetics*, 10: pp. 80–85, 1925; "The occurrence of starch and erythrodextrin in maize and their segregation in the pollen of hybrids," *Genetics*, 10: pp. 86–89, 1925.

[2] Demerec, M., "A case of pollen dimorphism in maize," *Amer. Jour. Bot.*, 11: 461–464, 1924.

[3] Brink, R. A., and MacGillivray, J. H., "Segregation for the waxy character in maize pollen and differential development of the male gametophyte," *Amer. Jour. Bot.*, 11: 465–469, 1924.