a ripe one, and twisted it round and round till its tenacious fibers gave way, and then threw it down and began to descend, thinking he had done enough, but on being spoken to he went to work again with great vigor, picking out all the ripe nuts on the tree, twisted them all off, and then came down in a thoroughly bad, sulky temper. He was walking erect, and it seemed discourteous not to go and thank him for all his hard toil.

More to the point is the account given by Robert W. C. Shelford in his book "A Naturalist in Borneo" (London, 1916). This book is packed with interesting natural history data on a great variety of subjects gathered while he was curator of the museum founded by the great Rajah Brooke at Sarawak. On page 8, Shelford says:

Macacus nemestrinus, the pig-tailed Macaque or *Brok* of the Malays, is a highly intelligent animal, and the Malays train them to pick coconuts. The *modus operandi* is as follows: A cord is fastened round the monkey's waist, and it is led to the coconut palm which it rapidly climbs. It then lays hold of a nut, and if the owner judges the fruit to be ripe for plucking he shouts to the monkey, which then twists the nut round and round till the stalk is broken and lets it fall to the ground. If the monkey catches hold of an unripe fruit, the owner tugs the cord and the monkey tries another. I have seen a *Brok* act as a very efficient fruit-picker, although the use of the cord was dispensed with altogether, the monkey being guided by the tones and inflections of his master's voice.

E. W. GUDGER

GREENSBORO, N. C.

HAY-FEVER AND A NATIONAL FLOWER

The Independent recently conducted what might be called a popular voting contest in order to ascertain the favorite candidate for a national flower. The result is published in the issue of that magazine for October 26, 1918, and can be summed up in the introductory words of the article:

We supposed that it would be merely a choice between the two leading candidates, the goldenrod and the columbine, but to our surprise three other flowers ran neck and neck with them: the sunflower, the clover and the daisy, while there were besides a dozen also-rans. The candidates were so numerous and the votes so scattering that we must declare the election void.

In the same article, in commenting on the goldenrod, they say:

The hay-fever vote is something that every floral politician must consider, for it is undeniably influential. Still, the advocates of the goldenrod do not propose to toady to any such selfish interests.

The writer sincerely hopes this is not an expression of the general opinion concerning the sufferers from the malady misnamed hay-fever. Stories of the victims of this disease too often get into the funny papers in the same column with mother-in-law jokes—they both deserve to receive more consideration at the hands of the public at large.

Hollopeter[1] states that hay-fever is largely due to the action of the pollen of the ragweed and of the goldenrod, the former being eight-five per cent. guilty while the latter is responsible for the remaining fifteen per cent., not taking account of some few cases probably caused by the pollen of other plants. This seems to reduce the harm done by the goldenrod to a small amount, but it must be remembered that almost all cases are irritated by the pollen of this plant whether or not it is the specific cause of the attack.

Between one and two per cent. of our adult population probably either has hay-fever or is liable to contract it if the proper conditions arise. The efficiency of the victims is reduced during the attack a great deal, in some cases even causing them to be confined to their homes for a month or six weeks every fall. It is true that on this point there is great variation, but all victims have a lowered vitality. Such a loss of time and efficiency is not only a detriment to the individual but is also a loss to the community. Why should we aid in the preservation and spread of a plant of such propensities, even if it is good to look upon? Rather it should be classed with the ragweed, and every effort should be made to stamp it out, at least in the neighborhoods of our cities.

[1] Hollopeter, W. C., "Hay-fever, Its Prevention and Cure," New York, 1916.

If we do not care to eliminate the goldenrod from the national flower contest because of thoughtfulness for our friends and neighbors who suffer from its existence, let us do so merely from the efficiency standpoint, both individual and state.   Horace Gunthorp

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SCIENTIFIC BOOKS

The Theory of Relativity of Motion. By R. C. Tolman. University of California Press. ix + 225 pp.

This book, which the author calls an introduction to the theory of relativity, is very attractive in style, sufficiently accurate, and covers the subject rather thoroughly. After a brief sketch of the historical development and statement of the postulates on which Einstein founded the theory, there is a very interesting chapter containing " elementary deductions " of some of the most striking results. This chapter makes it possible for students of physics to get a fairly definite idea of the subject without the rather perplexing mathematics in which it is usually hidden. Unfortunately the author finds it necessary to state that observers moving relatively to each other would find the same measurements perpendicular to the line of motion because they could make a direct comparison of their meter sticks when the motion brings such meter sticks into juxtaposition. There is nothing in the previous discussion that shows why this applies when the meter sticks are perpendicular to the line of motion and not when they are parallel to it.

A reader interested in the formal development would perhaps turn first to the chapter on the Lorentz transformations for, as Poincaré pointed out, these constitute the real essence of relativity. Most writers have some difficulty in logically deducing these from Einstein's postulates, the reason apparently being that it can not be done. The author avoids this difficulty by showing that the transformations do satisfy the postulates without attempting the impossible converse.

The applications cover the dynamics of a system of particles, elastic bodies, thermodynamic systems, and electromagnetic theory. In a chapter on the chaotic motion of a system of particles there is given what amounts to statistical mechanics in the form required by the principle of relativity. The last chapter is an introduction to the four-dimensional vector analysis used by Wilson and Lewis. This will be welcomed by many readers who have struggled with the original. The book does not enter into the extended relativity proposed by Einstein in connection with his speculations on gravitation. H. B. Phillips

SPECIAL ARTICLES

ON EXPLAINING MENDELIAN PHENOMENA

So many devices have been invented for representing the possible combinations of the various factors in Mendelian inheritance that one comes to entertain a suspicion that other folk have their troubles also in the presentation of this subject to beginners. The following suggestion is offered as having helped in serious cases. The beginning student of heredity is dealing with unfamiliar terms and, unless considerable laboratory work has rendered him no longer a beginner, he is considering unfamiliar processes. In his quicksand of strangeness he is glad to find a firmament of familiarity and he, therefore, welcomes a process of reasoning or of routine that he has employed before. Practically every high school graduate has had at least a year of algebra and has learned by rote the square of $a + b$. Whether or not he remembers that $a^2 + 2ab + b^2$ represents all the possible combinations of the two factors, he is in a position to be reminded of that fact and to take the first short step into the unfamiliar. If a and b represent the two types of gametes produced by the heterozygous parents F_1, then $a^2 + 2ab + b^2$ represents all possible progeny in the F_2 generation. Factors of second power represent pure strains because the determiner is the same from both parents. Conversely factors of the first power represent heterozygotes or the union of unlike determiners.