respectively. In all these years this most assiduous observer missed but one chance to observe an important eclipse; on the night of May 1, 1855, he was so absorbed in watching the great eruption of Vesuvius then in progress that "I entirely forgot about the eclipse."

And now there comes to hand No. 7 in Volume 1 of the Publications of the Manila Observatory, "Observations of the Brightness of Lunar Eclipses in the Philippines," by the Reverend Miguel Selga, S.J., director of the Weather Bureau. Father Selga has found time among the engrossing duties of a responsible and important official position to observe lunar eclipses himself, to stimulate many others, professional scientists and untrained observers, to do the same in the islands from Jolo and Zamboanga to Baguio and Sagada, and to collect from the records of the observatory observations of eclipses running back to January 7, 1871—of which hitherto we had observations only by Birmingham, at Millbrook, Ireland, and Schmidt, at Athens—and to May 12, 1873—recorded hitherto only by Tebbutt, in Windsor, N. S. W. Also, the Manila observation of November 26, 1890, seems to be unique.

Father Selga acted partly in consequence of a request by the writer, directed to the Reverend José Algué, S.J., then head of the Philippine Weather Bureau, for observations of the eclipse of February 20, 1924. He wrote numerous letters to friends throughout the islands and to persons associated with the Weather Bureau, and received many responses from observers all through the islands. In a region like that, where clouds are incessant, the more numerous the observers, the better, even though their scientific equipment may average not high. Father Selga has continued the same plan on the occasions of the later eclipses of August 14, 1924, December 8, 1927, June 3, 1928, and November 27, 1928. One of the observations came from distant Yap Island.

The results of this Philippine activity may be summarized thus: Father Selga, adopting the three-step scale of brightness, agrees to the grade 1 assigned by the writer to January 7, 1871, May 12, 1873, May 24, 1891, and April 22, 1902; to the writer's grade 2 assigned to February 29, 1896, and grade 0 assigned to March 21, 1894. The eclipses of October 26, 1920, and February 20, 1924, he calls bright; but he differs from the writer's grade 2 with regard to August 14, 1924, which his Manila records lead him to call rather dark. With regard to the distribution of light in the northern and southern parts of the shadow, he says, "In the cases here reported, the moon passed five times wholly north of the geometrical center of the shadow, three times wholly south, and it was central four times. Two cases of bright eclipses coincide with central passages and one case with a south passage."

Again, "The general tendency for bright eclipses to occur in winter is not contradicted by these observations." As to Danjon's solar cycle relation:

> (1) The minimum of solar activity did occur in 1923; (2) contrary to Danjon's prediction and expectation, neither the eclipse of February 20 nor the eclipse of August 13, 1924, was very dark, gray or very little colored. Of the two, the August eclipse was certainly the darker; while, according to Danjon, the farther away from the minimum, the greater should be the brightness. . . . The supposed relation between the solar cycle and the brightness of lunar eclipses is not clear, to say the least; many more observations under exceptional conditions are to be made before the relation can be accepted with certainty.[3]

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SEPTEMBER 6, 1929

A GENE FOR SUPERNUMERARY MITOSES DURING SPORE DEVELOPMENT IN ZEA MAYS

IN studying heritable functional sterility in maize, a case has been observed in which such sterility is due to supernumerary divisions of the young spores. This type of sterility is inherited as a simple Mendelian recessive.

The first and second divisions of the microsporocytes of sterile plants are apparently quite normal and result in the usual quartet of cells, each with a metabolic nucleus. In normal plants, the young spores undergo a growth period of at least several days, after which the nucleus divides vegetatively to form the generative and tube nuclei. In sterile plants, the young spores of the quartet immediately undergo a series of aberrant divisions. In the prophase of the first extra mitosis ten chromosomes appear. These ten chromosomes arrange themselves in the spindle and without splitting are distributed to the two poles, apparently at random. Cytokinesis follows and there result eight cells each of which usually has less than the haploid set of ten chromosomes. Each of these cells again divides in a similar manner, reducing the chromosome number still further. At least four such supernumerary divisions are known to take place in some cases, and probably many spores undergo even further division. These divisions are necessarily irregular and exhibit much lagging of chromosomes. Cells with only one chromosome in the spindle have been observed. Fragmentation of chromosomes appears to take place rather frequently.

[3] On page 3 the date September 4, 1913, should read 14—a typographical error for which the writer's pamphlet on the brightness of lunar eclipses is to be blamed.

Megasporogenesis in sterile plants has not as yet been studied cytologically. Since all but a few of the female gametes are non-functional, it is tentatively assumed that megasporogenesis is probably essentially similar to microsporogenesis. The progeny of sterile plants (sterile x normal) appear for the most part to be normal diploids. Such would be expected to be the case if it is assumed that at least the full haploid set of chromosomes is necessary for the production of a functional gametophyte.

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APPEAL FOR SAMPLES OF TREE SEEDS

THE Waldsamenprüfungsanstalt (forest tree-seed testing station) at Eberswalde, Germany, has for decades been a leading institution for the scientific study of tree seed. During the last six years Professor Dr. Werner Schmidt, the present director of the station, has made notable contributions to our knowledge of seed, especially of the internal, physiological differences in seed of different climatic races of the same species. This station is probably the only seed control station in the world devoted exclusively to forest tree seed. It cares for all the states of Germany, and consequently has a large volume of routine work, for which research must give preference. The staff now consists of two assistants, besides the director, and from three to five laboratory assistants and clerical aids (women). The annual budget for all operating expenses aside from the salaries of the male staff is at present only 3,000 marks ($750). Thus very small funds have been available for experimental work, which has precluded the purchase of material. Recently, owing to its rapid growth in central Europe, great interest has attached to Douglas fir (*Pseudotsuga taxifolia*). Northern white pine (*Pinus strobus*) is also fairly important in Europe. At present there is no systematic work being done in America on tree seed at all comparable to that under way at Eberswalde. Studies of the behavior of American species should prove very interesting. Any one in a position to do so will do the station a great favor by forwarding small samples of tree seeds with data about their place of origin. This may make possible important discoveries of the characteristics of our own species. Samples of fifty grams are sufficient for all except the largest seeded species, and should be addressed directly to Professor Werner Schmidt, Eberswalde, Germany. If possible seed of this autumn's crop should be sent; in any case full information as to where the seed was collected, altitude, notes on the climate, such as length of growing season, temperature of the summer months, etc., of the place of origin and the year and month of collection should be sent. It is not necessary that the seed be winged or cleaned; in fact cones may be sent if preferred. Several samples of the same species from widely varying regions and elevations are especially desired. It is hoped that many foresters, botanists and others may be able to cooperate by sending in samples.

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NEWSPAPER SCIENCE

THE following article appeared in the New York *Times* of September 1, 1929:

SNAKE-KILLING MONGOOSES
A PLAGUE TO PORTO RICO

HARRISON HECKMAN, of Augusta, Me., a field representative of the Red Cross, who has spent much time in Porto Rico, says the island has a problem: How to get rid of its mongooses. Not so long ago boa-constrictors thrived there, interfering greatly with the work of the coffee and sugar plantations. They also killed men and beasts. Even the natives hesitated to venture into the forests. So a shipment of mongooses was obtained from Asia.

Because of their fecundity only males were procured. These went about their business very thoroughly and systematically. In a few years they had cleared the island of most of the boa-constrictors. But they crossed with native rats and have multiplied to such an extent that they are devastating crops. How to get rid of them is a serious problem.

When a mongoos meets a boa-constrictor it takes up a position directly in front of it and apparently makes up faces. The snake, in its ignorance, thinking it is going to have an extra large rat for dinner, immediately throws out its poison. The mongoos, anticipating this, side-steps.

When the enraged serpent has emptied its poison sack the killer sits on his head, obtaining a firm hold with its teeth. The frenzied serpent makes a terrific struggle but in the end has to give up, exhausted.

After reading the above one is tempted to ask how Mr. Heckman learned so much that is not true. I have examined Schmidt's "Amphibians and Land Reptiles of Porto Rico"[1] and fail to find any record of the fierce (?) and poisonous (?) boa-constrictors of Porto Rico, but probably they were destroyed by the remarkable mongoos before Schmidt visited the island. island.

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[1] Scientific Survey of Porto Rico and the Virgin Islands, New York Academy of Sciences, 1928.