may be dealing with an atmospheric or gaseous affair excited by solar activity. Perhaps it is not without significance that the fluctuations observed this year are concomitant with solar activity, as indeed is the general appearance of the corona itself.

It is to be hoped that the publication of other possibly existing observations may add materially to the solution of the problem. It seems that we have in the zodiacal light a somewhat neglected field of unusual cosmic interest.

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CRANBERRY FALSE-BLOSSOM DISEASE SPREAD BY A LEAFHOPPER

OBSERVATIONS and field experiments made during the summers of 1924, 1925 and 1926 brought evidence that the false-blossom disease of cranberries is spread by the leafhopper *Euscelis striatulus* Fallen.[1] Carefully controlled experiments carried out during the past three summers have confirmed the results of my earlier work and prove the ability of this insect to transmit the virus of false-blossom.

Cranberry seedlings were grown in a greenhouse kept free from insects by fumigation. Such seedlings have never shown any of the symptoms of false-blossom disease unless purposely exposed to *Euscelis striatulus*. Cultures of this leafhopper obtained from bogs in Massachusetts, Long Island and New Jersey were allowed to feed for various periods of time on diseased cranberry plants held in insect-proof cages. The leafhoppers were then transferred to healthy seedlings on which they were allowed to feed for about two weeks. Numerous seedlings so exposed have taken the false-blossom disease, while check seedlings of the same age and grown under the same conditions but kept free from insects have remained healthy. Under favorable conditions the plants show the first symptoms of false-blossom about one month after being exposed to virus-bearing leafhoppers. The disease is recognized in its early stages by small leaves, by an upright habit of growth and by the production of an abnormally large number of secondary shoots. One plant to which false-blossom was experimentally transmitted produced two typical false-blossom flowers. It is not known whether *Euscelis striatulus* is the only insect that spreads false-blossom, but several other cranberry insects that were tested failed to transmit the virus of this disease.

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[1] I. D. Dobroscky, "Insect Studies in Relation to Cranberry False-blossom Disease." Proc. 58th Ann. Meet. Amer. Cranberry Growers' Assoc., pp. 6–11, 1928.

CELL FUSIONS IN FUNGOUS HYPHAE

THAT fusions between fungous cells have other interests than those associated with sex is shown in the vegetative mycelium of the common mushroom, *Psalliota campestris*. Cytological studies recently made on the mycelium have revealed the existence of numerous end-to-end as well as lateral fusions between adjoining hyphal cells. The walls between many of the hyphae of the developing strand begin to dissolve away at very early stages and the process is continuous to maturity. The mature strand consists for the most part of very large cells in the core region. Most of these are from five to six times the diameter of the original hyphal cells and about five times or more as long. The anastomoses as stated above begin very early, sometimes shortly after the hyphae emerge from the germ vesicle, and in some cases even the vesicles have been observed to fuse. The large cells of the strand have developed from the fusion of two or more hyphae of smaller diameters and may be looked upon as a composite formed by the fusion of smaller hyphae. The cells so formed serve without doubt in a vascular capacity and are perhaps an adaptive response for the conduction of food materials to the rapidly growing carpophore. The large capacity of many of the cells suggests also the possibility that they function as reservoirs for the storage of food materials to be supplied to the carpophores during their period of rapid growth. These studies will be reported in full in a forthcoming number of the *American Journal of Botany*.

ILLO HEIN

INFORMATION CONCERNING CASTOROIDES

THE very recent discovery of a beautiful skull of *Castoroides ohioensis* Foster, the giant Pleistocene beaver, in Illinois has started the writer on an intensive study of the osteology of this interesting species. At the present time I am most anxious to ascertain the present location of any and all specimens or fragments of this species for use in a forthcoming paper. Search of the literature has yielded forty-two records of this form, but in only fifteen cases do I know where the specimens are at present deposited. For example, where is the perfect Clyde skull, and the fine skull found at Charleston, Illinois, and reported by Leidy in 1867? The undersigned would greatly appreciate it if the various colleges, museums and private collectors would mail him a list of what they have of *C. ohioensis*, together with data on where the material was found and the present catalogue number of the specimens. Full credit will be given for all information.

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