fusing medley of species, for European mycologists long since an undecipherable rebus.—GEO. F. ATKINSON.

Patrogenesis.—COLLINS and KEMPTON,[19] working on intergeneric hybridism in the tribe Maydeae, have had the great good fortune to bring to light a new case of the phenomenon discovered in *Fragaria* by MILLARDET, and termed by him "hybridation sans croisement ou fausse hybridation." The hybrid *Tripsacum dactyloides*×*Euchlaena mexicana*, carried through 3 generations, has shown no trace of characters derived from *Tripsacum*, aside from the fact that the original hybrid seed was "an unmistakable *Tripsacum* seed." Characters of *Euchlaena* appeared with the first leaves, and in further stages of development the plant was an almost normal *Euchlaena*.

In attempting to explain the complete exclusion of maternal characters from the hybrid, the authors have discussed two hypotheses: (1) that the *Euchlaena* characters have completely masked those of the *Tripsacum*, and (2) that the embryo of the original hybrid developed only from the male nucleus, which must be regarded as having dispossessed the female nucleus with which it would have been expected to unite. COLLINS and KEMPTON adopt the latter hypothesis, and look upon their hybrid as exemplifying a new type of inheritance, which they call "patrogenesis" in order to place the phenomenon in what they regard as a proper contrast with parthenogenesis. We may well doubt, in the absence of cytological data, whether this explanation is probable enough to warrant the introduction of a new term. BATESON'S terms monolepsis and amphilepsis, indicating hybrids in which the characters are brought in respectively from only one or from both parents, have already been introduced, and have the advantage that they imply nothing as to cytological conditions.

Maternal monolepsis is well known in the Orchidaceae, especially in the intergeneric hybrids between *Zygopetalum Mackayi* and species of *Odontoglossum*, *Lycaste*, and *Oncidium*. Paternal monolepsis is a rarer phenomenon, and its discovery in intergeneric grass hybrids is most interesting. That it is to be explained by merogony, however, should not be too incautiously assumed. It will be recalled that a similar explanation of DEVRIES' patroclinic hybrids in *Oenothera* was brought forward, with even some show of cytological evidence, but was afterward disproved.

In the first hybrid generation COLLINS and KEMPTON had only one plant of their *Tripsacum*×*Euchlaena*. There is no evidence, therefore, that this generation may not consist normally of more than one type, as in the case of many *Oenothera* hybrids. Certain evidence obtained by COLLINS and KEMPTON themselves almost tempts one to predict that twin hybrids will be found if it is possible to get large enough progenies.

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[19] COLLINS, G. N., and KEMPTON, J. H., Patrogenesis. Jour. Heredity 7:106–118. 1916.

Euchlaena and maize are rather closely related to one another, and cross spontaneously. Seed of the former imported from Mexico is often obviously hybridized. That from Durango, whence COLLINS and KEMPTON got their strain, is so impure that the parent of their hybrid is not free from suspicion of contamination. A priori, therefore, we should expect similarity of behavior in the hybrids between these two closely related plants and the distantly related *Tripsacum*. Nevertheless, all the plants of *Tripsacum*×*Mais* thus far raised have shown maternal characters only, in marked contrast to the paternal characters of the corresponding hybrid *Tripsacum*×*Euchlaena*. More first generation plants are greatly to be desired, but there is difficulty in getting them because the parent species can seldom be brought into flower simultaneously.

The authors lead us to expect cytological data bearing on the question raised by their very important discovery.—H. H. BARTLETT.

Negative osmosis.—In osmotic experiments it has been found that the flow of water is not always from the less concentrated toward the more concentrated solution. Several cases have been reported in which an opposite flow of water occurred, or in which a movement of water was observed in dealing with solutions with the same osmotic pressure. This is called negative or abnormal osmosis. FREUNDLICH[20] has given us a discussion of these experiments, has defined the conditions under which abnormal osmosis can take place, and has dealt with the cause of it. It appears that such movements of water are caused by the development of an electric current through the membrane, and the water moves in an electroendosmotic manner in the current. The generation of this current and the consequent electroendosmosis can take place in two sets of conditions: (1) when the membrane is permeable to both solvent and solute the ions of the electrolyte are adsorbed by the membrane, their transport numbers changed, and a difference of electric potential on opposite sides of the membrane established, which leads to the starting of an electric current; (2) when the membrane allows only one of the ions of the electrolyte to pass through, the other ion being held back. This semipermeability toward one ion leads to a difference of potential, an electric current is established, and water moves across the membrane by electroendosmosis. This can take place only when the electrolytes on opposite sides of the membrane are different and are such that the ions may react with each other and set free electrical changes.—F. E. DENNY.

Growth in Laminariaceae.—Miss FALLIS[21] reports experimental data on the growth of several species of Laminariaceae. She worked on species of *Laminaria*, *Agarum*, *Cymathaere*, *Egregia*, *Alaria*, and *Nereocystis*. She found

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[20] FREUNDLICH, H., Über abnorme Osmosen. Kolloid. Zeitschr. **18**:11–16. 1916.

[21] FALLIS, ANNIE L., Growth in some Laminariaceae. Puget Sound Marine Sta. Publ. 1:137–155. *pls. 25–28*. 1916.