which developed on a yeast medium (10 days duration of development); (2) individuals that had the vitamin B_2 given them on the twentieth day of their larval life (the flies began to emerge on the thirtieth day after the eggs had been laid); (3) individuals which had fed on yeast medium for a period at the longest of twenty-four hours after hatching and continued their development on an avitaminous B_2 medium (10 days duration of development).

The adults of group (2) did not differ from the controls in regard to duration of life and fertility (males only were studied). But these individuals in the period of their larval life preceding the addition of yeast medium have quite certainly been subjected to a strong and unfavourable effect of an avitaminous B_2 regime (when no yeast medium is added more than 99 per cent of individuals die on the eighteenth to the twenty-second day of their larval life). In adults of group (3) the duration of life and fertility are greatly diminished: the vitamin B_2 not only influences metamorphosis (a minimal amount suffices for securing the setting in of the pupal stage and the emerging of the fly), but the organism as a whole is likewise strongly influenced by it.

The rate of lethal mutations found in the X-chromosomes (method ClB) of the control ♂♂ ($0{\cdot}21 \pm 0{\cdot}08$) and the ♂♂ of group (2) ($0{\cdot}15 \pm 0{\cdot}07$) is about the same in both cases (difference $= 0{\cdot}06 \pm 0{\cdot}11$). At the same time, if the number of originated mutations corresponded to the time elapsed, the percentage of mutation brought into evidence in the experimental material (duration of development thirty days) should have been three times as large as in the control (10 days duration of development).

The percentage of lethal mutations found in the II chromosomes (method $Cy\ sp/L^2$) in experimental ♂♂ of group (2) ($1{\cdot}07 \pm 0{\cdot}16$) is about on a par with the rate of mutations in the II chromosomes in the control ($0{\cdot}66 \pm 0{\cdot}13$) or even somewhat lower than the latter (difference $= 0{\cdot}41 \pm 0{\cdot}21$). Statistically the difference between the number of mutations found in II chromosomes of group (2) and the number of mutations to be expected if the rapidity of the mutation process did not depend on the rapidity of individual development is quite real (difference $= 43{\cdot}07 \pm 8{\cdot}30$). The experiment just described contains, moreover, the data indicating that the suggestion of a germinal selection acting in our experiment has no validity: the relation of the percentage of mutations found in ♂♂ of group (2) to that in the control is about the same for the X as for the II chromosome.

The question arises whether it is a simple coincidence that the percentage of mutations relative to the number of chromosomes studied proves to be about equal in ♂♂ of group (2) and in control ♂♂. Does not this fact indicate that in ontogenesis forces are acting that occasion accumulation of a certain number of mutations in the individual's germ-cells up to the close of metamorphosis? For the solution of this problem individuals of group (3) were employed (their development as in control group lasts 10 days).

The percentage of lethal mutations found in the II chromosomes in group (3) and in the control group is the same in both cases (difference $= 0{\cdot}01 \pm 0{\cdot}43$). Thus we may consider it as proved that the decrease in rapidity in the mutation process, brought into evidence in the preceding experiments in which ♂♂ of group (2) were studied, is due to the fact that in this group the development is of longer duration. The decisive role may quite possibly belong here to a slowing down of the process of spermatogenesis, or more exactly, in connexion with the latter, a slowing down of the rate of reproduction ('multiplication') of the genes.

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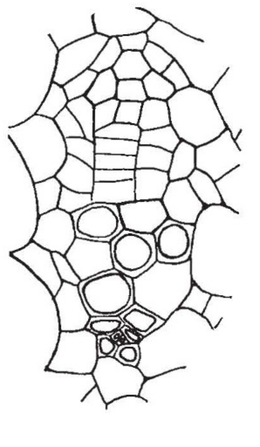
April 5.

Centripetal Xylem in the Pedicel of a Monocotyledon

The centripetal xylem in the stem among the vascular plants is confined to the Pteridophyta and lower gymnosperms, the Pteridospermæ and the Cordaitales. The vegetative stem of Cycadales and Coniferales lacks centripetal xylem; but it occurs in a poorly developed condition in certain conservative regions like the reproductive axes and the leaf traces. In the Gnetales and the angiosperms the axial organs show exclusively the endarch condition, and the centripetal xylem is altogether absent from the primary vascular bundles.



In my study of the floral anatomy of *Gagea fascicularis* Salisb., however, I have seen distinct traces of centripetal xylem in the vascular bundles of the pedicel. The pedicel in this species at its distal end shows six bundles. Three of these are large and three alternating are small. The smaller bundles frequently show in addition to the normal centrifugal xylem one or two vessels to the inside of the first-formed narrow protoxylem elements. The structure is shown by the accompanying figure. Details will be published elsewhere.

The structure of the vascular bundles in the flowers of *Gagea fascicularis* is also interesting in showing a distinct intrafascicular cambium.

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April 1.

Ethmoplax, a New Name for *Stratiphyllum* Smyth

At a meeting of the Royal Irish Academy held on May 8, 1933, I proposed the name *Stratiphyllum* (as *Stratophyllum*) for a Carboniferous tabulate coral from Tournai, Belgium. The name was not published until September 8 of that year[1]. Dr. Stanley Smith has directed my attention to the fact that in the meantime Dr. Walther Scheffen had published the same generic name for some Silurian rugose corals from Norway[2].

I therefore wish to rename the Tournaisian form *Ethmoplax* (ἠθμός, a strainer; πλάξ, anything flat and broad, a plain).

Louis B. Smyth.

Trinity College,
Dublin. April 27.

[1] *Proc. Roy. Irish Acad.*, **41**, Sect. B, 13, 171 (1933).
[2] *Skrift. Norske Vidensk.-Akad. Oslo* (1932), *I, Mat.-Naturvid. Klasse*, **2**, No. 5, 35 (May 1933).

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