

NOTES.

NOTE ON THE PALAEOZOIC SEEDS, TRIGONOCARPUS AND POLYLOPHOSPERMUM.—In their detailed and very interesting paper on the palaeozoic seed-genus *Trigonocarpus*¹, Dr. Scott and Mr. Maslen include a description of a new species with which they have done me the honour to associate my name. The chief interest attaching to the still imperfectly known *T. Oliveri* depends on the resemblance which it presents to the *Polylophospermum stephanense* of Brongniart.

The particular feature which the authors find these two seeds to possess in common is an inverted chalazal cup or circular ridge at the base, enclosing the stalk by which the seed must have been attached to the structure which bore it.

My excuse for writing the present note, before the authors have completed their labours, is to mention a character, hitherto undescribed, in which *Polylophospermum* approaches the type-species *Trigonocarpus Parkinsoni* (*Trigonocarpon olivaeforme*), a character that may prove of some taxonomic importance when the relations of these seeds are considered.

Through the courtesy of Professor E. Bureau of the Muséum d'Histoire Naturelle it was possible, during the course of a visit to Paris in April, 1905, to consult the fossil slides in the collection of the late Monsieur Renault.

Among these were several sections of *Polylophospermum*, which contribute one or two points hitherto unrecorded. Transverse sections across the body of the seed show the hexagonal outline, familiarized by Brongniart's original sketch², with six principal acute ridges along the salient angles of the sclerotesta, and a like number of lower and less acute secondary ribs on the flat, prismatic faces. In several of these specimens considerable traces of sarcotesta may be recognized, extending both between the ribs and also beyond them; whilst, embedded in the tissue of the sarcotesta, immediately outside the points of the secondary ribs, little vascular bundles are found to occur. In some cases these bundles are distorted and flattened in the tangential plane, but their presence in the position described was confirmed in a sufficient number of cases to remove all reasonable doubt as to the accuracy of the observation. On the other hand, no bundles were detected in the sarcotesta in the neighbourhood of the principal ridges.

These facts are epitomized in Fig. 1, A, which is based primarily on the preparation numbered 9306³. Another preparation from the same series contained a longitudinal section of the chalazal end of a seed showing one of these vascular bundles running in the sarcotesta for a distance of about 5 mm. (Fig. 1, B, v. b.).

From these observations it would appear that *Polylophospermum stephanense* possessed a sarcotestal vascular system consisting of bundles running in the same radii as the secondary ridges; on the other hand, the principal ridges seem to have been unaccompanied by bundles.

¹ Ann. of Bot., vol. xxi, p. 89.

² A. Brongniart, Rech. sur les graines foss. silicifiées, Pl. C, Fig. 7.

³ Other preparations illustrating the point are 9315, 9317.

Furthermore, each principal ridge is characterized by a longitudinal crack in its plane of symmetry, proceeding from the furrow on the interior surface of the sclerotesta.

Hence a close general agreement obtains between the two seeds (*Trigonocarpus Parkinsoni* and *Polylophospermum stephanense*)—(1) in the differentiation of the ridges; (2) in the presence of a sarcotestal vascular system; (3) in the correlation with the principal and secondary ridges of radial cracks and vascular bundles, respectively.

Under these circumstances it is of interest that a seed should have come to light (*T. Oliveri*), showing transitional characters between the two genera.

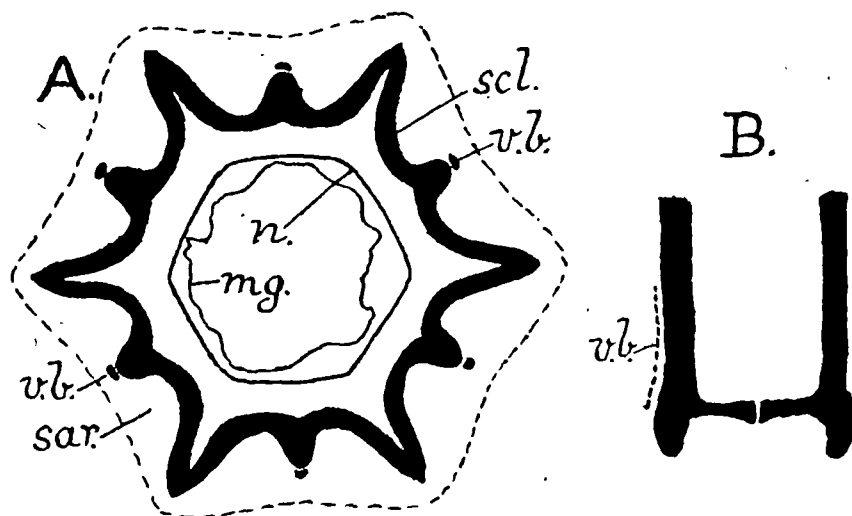


Fig. 1. *Polylophospermum stephanense*.

A, transverse section of seed showing the position of the vascular bundles of the sarcotesta and their relation to the ridges. n. nucellus; mg. megaspore membrane; sar. sarcotesta; scl. sclerotesta; v.b. vascular bundles. $\times 8$.

B, longitudinal section of the chalazal end of a seed. v.b. vascular bundle. $\times 4$.

Before closing this note there is one point I would raise before it is too late. In Pt. I of their paper¹ the authors show a tendency to adopt the term *Stephanospermeae* as the group-name for the seeds showing a general agreement in structure with *Trigonocarpus*. My plea is that *Stephanospermeae* be abandoned in favour of the much more appropriate *Trigonocarpeae*. The only justification for the term *Stephanospermeae* is that at the time it was proposed it embodied the name of the seed the anatomy of which had been investigated in rather more detail, perhaps, than was the case with any other member of the group. To-day that qualification is no longer valid. Moreover, *Trigonocarpus* is the Coal-measure seed *par excellence*, and has been the subject of numerous memoirs and references scattered over the palaeo-botanical literature of nearly a century. It is widely distributed, and is known under both forms of preservation; whilst the casts and petrifications have been correlated in detail. Hence on every ground *Trigonocarpus* has pre-eminent claims to give its name to the group.

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¹ Scott and Maslen, loc. cit.