

A PROBLEMATICAL ELEMENT IN THE GLOSSOPTERIS FLORA OF VEREENIGING

by
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INTRODUCTION

An unusual element, not previously recorded from the mixed *Glossopteris* Flora of Vereeniging, is described here. The type material was obtained from a rich fossiliferous zone, previously described by the author (Le Roux, 1963, pp. 1—2). The material available for study consists of a single specimen of an incomplete frond preserved in the form of an impression in fine-grained laminated clay.

NAMING AND CLASSIFICATION OF THE FOSSIL

A frond of this nature presents a most difficult problem of identification owing to the fact that one has to depend on gross morphology only. This task becomes even more hazardous where the preservation is poor and the material fragmentary such as in the case concerned here. Under the circumstances it is proposed to refer the fossil provisionally to *Plantae Incertae Sedis*. The name proposed for the new plant is *Thomaslesia vereenigensis* in commemoration of the late Dr. Thomas Leslie and the locality which he made famous through his palaeobotanical discoveries at Vereeniging.

DESCRIPTION OF THE MATERIAL

Incertae sedis

Thomaslesia vereenigensis gen. et sp. nov.
(Figures 1 and 2)

Combined diagnosis

Sterile vegetative frond, imparipinnate with falciform leaflets borne on a stout rachis. Leaflets arranged in opposite pairs spaced at a wide interval and confined to the region immediately subtending the terminal leaflet. Leaf laminae borne on strong petioles attached to rachis at a wide angle; margins of leaf blades entire, oppositely curved. Greatest width of blade in centre, tapering gradually towards apex; veins strong, more or less parallel, with shallow grooves between adjacent veins; midrib absent; rachis prominent, tapering gradually towards apex.

Holotype — Specimen TLV/I, Museum of the Bernard Price Institute for Palaeontological Research, Johannesburg.

Locality — Leeuwkuil, Vereeniging, Transvaal.

Horizon — Transvaal Coal-measures, Lower Permian.

Zone — Clay layer "A", Leeuwkuil Quarry No. 2 (Le Roux, 1963, p. 2).

Description

Leaflet slightly curved in basal portion with gradual increase in curvature until a distinct sickle-shape is produced; maximum length of lamina approximately 80 mm and having a maximum width of 6 mm in central region; parallel venation, five veins running 1 mm apart; petiole about 40 mm long and 3 mm wide; leaflets arranged in two opposite pairs and spaced approximately 20 mm apart on rachis. Rachis bare of foliage except 5 leaflets in apical region; maximum width of rachis at point of fracture 13 mm, tapering gradually to 6 mm at the terminal end; traversed longitudinally by a faint median ridge.

Comparisons and discussions

As far as is known the only plant showing some resemblance to the new Vereeniging plant is *Glossophyllum florini* Krausel, a ginkgoalean plant from the Triassic of Austria. The foliage of both plants includes falciform leaves. It is doubtful whether this feature should be considered as being of important diagnostic value owing to the possibility that the sickle shape may have been induced under certain conditions of preservation. Both plants show parallel venation, with distinct forking of veins in the case of *G. florini*, indicating affinity with the Ginkgoales. No such evidence is afforded, however, in the case of the Vereeniging plant.

There is a marked difference between the habits of growth of the two plants, a fact which seems to rule out the possibility of mutual affinity with the Ginkgoales.

The specimen described in this paper shows a superficial resemblance to the frond of a small palmaceous or cycadaceous plant. This raises the interesting possibility that the new plant may be of cycadophytic stock. Such a surmise would not be too far-fetched considering the fact that remains of cycadeoidalean plants have previously been recorded from Vereeniging (Plumstead, 1961; Le Roux, 1966). For the present the evidence is too meagre and inadequate to establish relationship with the Cycadophyta, however, and the taxonomic position of the plant will have to remain problematical pending the discovery of more conclusive evidence.

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Figure 1. Incomplete frond showing strong rachis with cluster of falciform leaflets. Note the distinct curvature in the rachis and the faint median longitudinal ridge. (Magnification $X\frac{1}{2}$)



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Figure 2. Apical portion of the specimen figured in Figure 1. Note the imparipinnate arrangement of the leaflets on the rachis, the comparatively wide spacing between the two pairs of leaflets, the prominent petiole and the parallel nature of the veins shown in the leaflet on the right. (Natural size)