

ADDITIONS TO THE GLOSSOPTERIS FLORA FROM THE KAMTHI BEDS NEAR SATNAVARI, DISTRICT NAGPUR (M. S.)^{*}

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ABSTRACT

In Maharashtra the *Glossopteris* remains are found in the districts of Nagpur, Chanda, Wardha and Yeotmal. A fresh collection of fossil plants was made by the authors from Satnavari Quarry, District Nagpur. In addition to *Glossopteris*, *Schizoneura*, *Phyllothea* and *Noeggerathiopsis* two more genera *Rhipidopsis* and *Neomariopteris* were collected for the first time. They are preserved in the form of impression on yellowish and reddish white sandstones typical of Kamthi Stage. They were identified as *Rhipidopsis gondwanensis* (Feistm.) Seward and *Neomariopteris polymorpha* (Feistm.) Maithy.

INTRODUCTION

The lower Gondwana strata in the state of Maharashtra are distributed in the districts of Nagpur, Chanda, Wardha and Yeotmal mainly. Very little work has been done on the *Glossopteris* flora in the State of Maharashtra. BUNBURY (1861) for the first time described some fossil plants from Nagpur. AGASHE *et al.* (1971) have reported from Umre, Bazargaon and Satnavari in Nagpur district, seven species of *Glossopteris*, *Noeggerathiopsis hislopii* Bunb., and *Equisetites* sp. VAGYANI AND MAHABALE (1971) have reported a coniferous wood *Planoxylon indicum* from Adhari, District Chanda. The present paper describes *Rhipidopsis gondwanensis* (Feistm.) Seward and *Neomariopteris polymorpha* (Feistm.) Maithy for the first time from Satnavari, District Nagpur, Maharashtra State.

A fresh collection of fossil plants was made by authors in March 1977 from Satnavari Quarry. The plants are preserved as impressions on the sandstones of yellow, reddish-white colour typical of Kamthi Stage. The collection included *Glossopteris*, *Schizoneura* and *Equisetites* reported by earlier workers. *Rhipidopsis gondwanensis* (Feistm.) Seward and *Neomariopteris polymorpha* (Feistm.) Maithy were collected which are new additions to the flora of this locality.

DESCRIPTION

***Neomariopteris polymorpha* (Feistm.) Maithy**

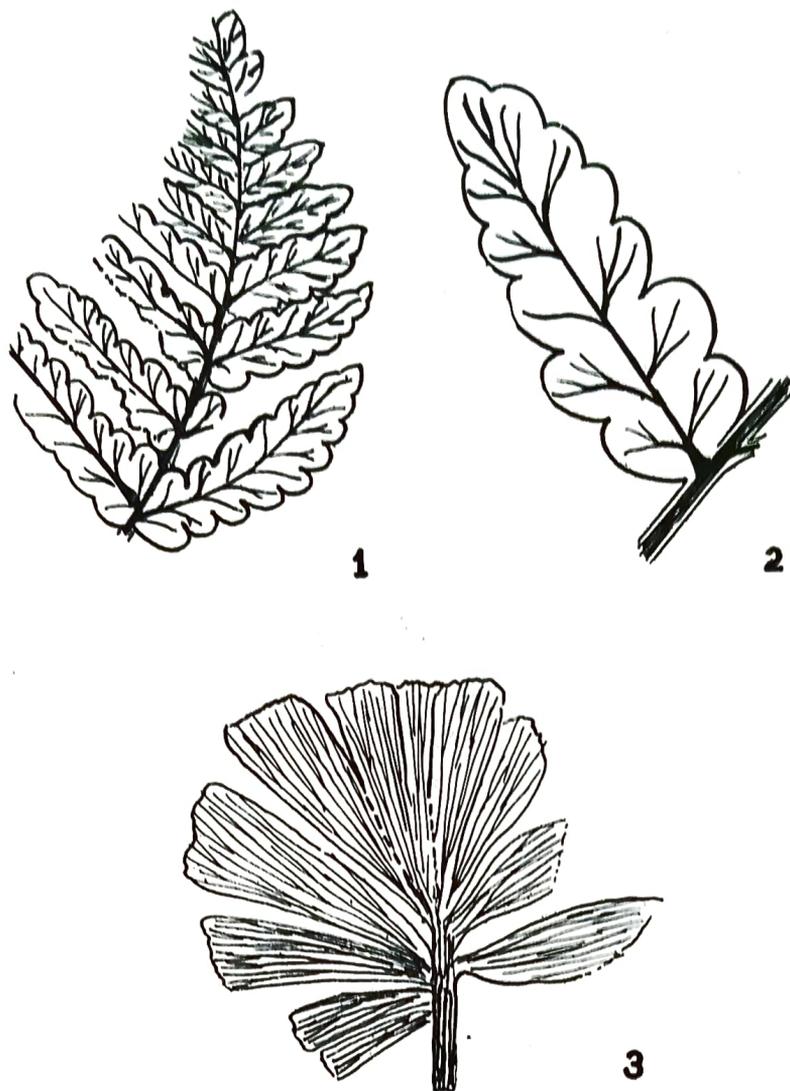
Plate 1, Fig. 1; Text-figs. 1, 2

The specimen is an impression on reddish-white sandstone. The frond is compound and show apical portion only measuring 9.5 cm in length. The primary rachis is winged, 1.5 mm in breadth at the base.

The secondary pinnae in the basal region measure 5.2 cm in length while those towards the apical region measure 0.8 cm in length. They are alternate and emerge at an angle of 70°—90° from the rachis. The secondary rachis is faintly ribbed.

The pinnules on the basal pinnae are alternate, sessile and are attached slightly obliquely to the rachis of pinnae with their entire base. They measure 1.2 × 0.6 cm. The

^{*}Paper presented at the Second Indian Geophytological Conference, Lucknow, March 11-12, 1978.



1. *Neomariopteris polymorpha* (Feistm.) Maithy \times N. S.
2. Same enlarged showing venation pattern \times 2.
3. *Rhipidopsis gondwanensis* (Feistm.) Seward \times 1 1/2.

length to breadth ratio is 2 : 1. A gradual reduction in the incision of pinnules is observed from base to apex. The pinnac near the apex are not completely lobed. Each pinnule is supplied with a vascular trace and the secondary veins dichotomise once before reaching the margin.

***Rhipidopsis gondwanensis* (Feistm.) Seward**

Plate 1, Fig. 2; Text-fig. 3

The specimen is an impression on the yellowish-white sandstone. It measures 6 cm in length and 5.5 cm in breadth. The petiole is 0.1 mm in thickness. The lamina is divided into 10 segments which are irregularly lobed on the truncate margin. The larger segments cuneate while the smaller segments are obovate and obtuse. Veins start from the base and fork repeatedly. The specimen agrees with *R. gondwanensis* (Feistm.) Seward in which number of segments are 6-10 and hence, identified as such.

DISCUSSION

Recently, MAITHY (1974) has revised the Lower Gondwana *Sphenopteris* from India and has instituted the new genus *Neomariopteris*. He has also redefined the species of *Sphenopteris* previously described from India, namely (1) *Neomariopteris polymorpha* (Feistm.)

Maithy, (II) *N. hughesii* (Zeill.) Maithy, (III) *N. lobofolia* (Morr.) Maithy and added a new species *N. talchirensis* Maithy. Our specimen agrees with *N. polymorpha* and hence identified as such.

The genus *Rhipidopsis* is a Permian genus. It was instituted by SCHMALHAUSEN (1879) for large petiolate oval leaves characterised by division of lamina into several obtuse or obovate segments. In India it is recorded by FEISTMANTEL (1881) from Barakar Stage and he instituted two species, namely—(I) *R. densinervis* Feistm. and (II) *R. ginkgoides* Feistm. SEWARD (1919) revised the name of *R. ginkgoides* as *R. gondwanensis* (Feistm.) Seward.

The flora and its age

Floristic composition of Satnavari flora reveals that it has elements of Lower Gondwana plants like *Glossopteris*, *Noeggerathiopsis*, *Schizoneura* and *Rhipidopsis*. The genus *Neomariopteris* is a dwindling plant in the Triassic of Wardha Godavari valley. Its occurrence here shows that, the flora has elements of Permian and Triassic. Kamthi beds are considered as homotaxial with the Raniganj Stage (Upper Permian). They are considered by some geologists and palaeobotanists as contemporaneous with the Lower Triassic. Hence, to assign the age of these beds needs further investigation.

ACKNOWLEDGEMENTS

The authors are thankful to Prof. G. V. Joshi, Head of the Botany Department, Shivaji University, Kolhapur for providing laboratory facilities and encouragement.

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EXPLANATION OF PLATE 1

1. *Neomariopteris polymorpha* (Feistm.) Maithy $\times 1\ 1/4$.
2. *Rhipidopsis gondwanensis* (Feistm.) Seward $\times 1\ 1/2$.



1



2