

OTOZAMITES VEMAVARAMENSIS SP. NOV. FROM THE UPPER GONDWANA OF THE EAST COAST OF INDIA

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ABSTRACT

Otozamites vemavaramensis sp. nov. is based on the specimens previously described and figured by Feistmantel (1879) as *Otozamites bunburyanus* Zigno (p. 21, Pl. 7, Figs. 5-8 and Pl. 16, Fig. 2) and a new specimen recently collected from Vemavaram.

INTRODUCTION

FROM Vemavaram, East Coast of India, seven species of *Otozamites* Braun were recorded by Feistmantel (1879). Out of these, *O. hislopi* Oldham (p. 22, PL. 7, FIG. 4), *O. rarinervis* Feistm. (p. 21, PL. 8, FIGS. 8-11), *O. acutifolius* Feistm. (p. 22, PL. 8, FIG. 12) and *O. sp.* (p. 22, PL. 10, FIGS. 6 & 6a) on examination (specimens examined by BOSE) were found to belong to *Ptilophyllum* Morris. The remaining species need a careful study. The figured specimens (FEISTMANTEL, *l.c.*, PL. 7, FIGS. 5-8 and PL. 16, FIG. 2) of one such species, viz., *O. bunburyanus* Zigno on re-examination proved to be different from Zigno's (1873-85) original Italian specimens. A few differences from Zigno's and other European specimens were, however, already noticed by Seward and Sahni (1920) who described Feistmantel's specimens as *O. bunburyanus* Zigno var. *indica*. Harris (1945) while describing *O. bunburyanus* from the Jurassic of Yorkshire mentioned the figured specimens of Feistmantel (*l.c.*) and Seward and Sahni (*l.c.*) as of doubtful determinations. In view of all this the specimens from Vemavaram previously described under *O. bunburyanus* are now assigned to a new species along with a better and bigger specimen collected from about 3 km. S-W of Vemavaram village near a kiln, by Dr. Sukh Dev of Birbal Sahni Institute of Palaeobotany, Lucknow, in 1961.

Otozamites vemavaramensis sp. nov.

Pl. 1, Figs. 1-4

1879 — *Otozamites bunburyanus*, Zigno; Feistmantel, p. 21, Pl. 7, Figs. 5-9, Pl. 16, Fig. 2.

Otozamites abbreviatus Feistm., p. 21, Pl. 9, Fig. 12.

1920 — *Otozamites bunburyanus* Zigno var. *indica* Seward & Sahni, p. 28, Pl. 5, Figs. 45-46.

Diagnosis — Leaves imparipinnate, linear, more than 18 cm. in length about 3-5 mm. in breadth, slightly narrow towards apex. Rachis prominent, more or less uniformly thick throughout the entire length, about 1 mm. broad. Pinnae attached on upper surface of rachis by their entire base in an imbricate manner, small, about 1.5-3 mm. in length, deltoid, apex obtuse, outer margin incurved. Veins few, arising directly from base, radiating, \pm straight, sometimes once forked.

Locality — Vemavaram.

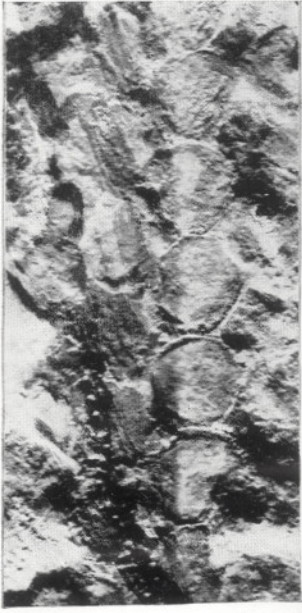
Age and Horizon — Upper Jurassic (?), Kota Stage.

Holotype — No. 4664 of the Geological Survey of India, Calcutta.

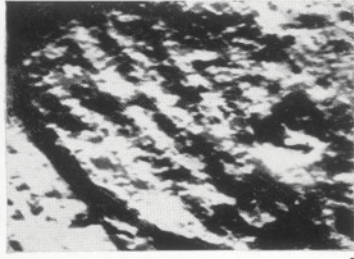
Remarks — All the leaves so far collected are incomplete at base so nothing is known regarding their petiole and the basal pinnae. Both in the holotype (FEISTMANTEL, 1879, PL. 7, FIG. 5) as well as the specimen figured here (PL. 1, FIG. 1) all the leaves seem to converge below in a manner suggesting as if they were all joined below to one apical crown. There is, of course, one more possibility that they were part of leaves which were bipinnate and thus they were joined below to the main rachis. But in the absence of any evidence it is safer, at present, to consider the leaves as only once pinnate.

Due to the prominent incurved margin and the substance of lamina which appears to be thick, *O. vemavaramensis* seems to be a xeromorphic species.

Comparison — *Otozamites vemavaramensis* can readily be distinguished from all the other species of *Otozamites* in having very narrow leaves and minute deltoid pinnae with few veins some of which divide only once. *O. vemavaramensis* is closest to some of the smaller pinnae of *O. bunburyanus* Zigno (1881) described from Italy and other parts of Europe especially the specimens



2



4



3



1

described by Harris (1945) from Yorkshire. But even in these specimens the pinnae are bigger and they have more veins. *O. bengalensis* Oldham & Morris as described by Seward and Sahni (1920) comes nearest to the present species in having rather small pinnae. But in *O. bengalensis* too the pinnae are larger with more or less acute tips.

ACKNOWLEDGEMENT

We are grateful to Dr. B. C. Roy, Director General, Geological Survey of India, Calcutta for kindly allowing one of us (BOSE) to examine some of the original specimens of *Otozamites* described by Feistmantel.

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EXPLANATION OF PLATE

PLATE 1

Otozamites vemavaramensis sp. nov.

1. The largest specimen so far collected, showing all the leaves converging below. $\times 1$.
2. A part of a leaf from the above magnified,

showing the pinnae arrangement and incurved margin. $\times 5$.

3. Only a few pinnae magnified, showing the venation. $\times 6$.
4. A single pinna magnified, showing the once forked veins. $\times 12$.