

ARAUCARITES NIPANIENSIS SP. NOV.—A FEMALE ARAUCARIAN CONE-SCALE FROM THE RAJMAHAL SERIES

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ABSTRACT

The paper describes a new species of *Araucarites* (*A. nipaniensis*) from Nipania, Rajmahal Hills, Bihar. The seed of *A. nipaniensis* is comparatively small and is placed on a broad and prominently winged cone-scale.

INTRODUCTION

FROM India female Araucarian cone-scales were first described by Feistmantel (1876) as *Araucarites cutchensis* Feist. from Kukurbit in Kutch. In 1877 he reported another species as *A. macropteris* Feist. from Golapili, Madras. Later similar specimens were discovered from other parts of India and they were redescribed in detail by Seward & Sahni (1920) and Sahni (1928). Sahni & Rao (1933) reported few impressions of detached cone-scales as *A. sp.* The first petrified and most complete Araucarian cone was described by Vishnu-Mittre (1954) as *A. bindrabunensis* Vishnu-Mittre from Bindrabun, Rajmahal Hills, Bihar.

The present specimen is also petrified but unfortunately only a single detached ovuliferous scale has so far been collected. The collection was made by me in February 1956 from Nipania, in the district of Dumka*, Santal Parganas, Bihar.

DESCRIPTION

The description is based on a petrified specimen in counterparts (PL. 1, FIGS. 1, 2) obtained by splitting a piece of greyish coloured chert. The counterparts are of unequal size, one having the major portion of the seed than the other.

Cone-scale almost twice as broad as long, 2.5 × 1.3 cm. Laterally very prominently winged; distal end tapering to an acute point; proximal end not preserved; shape on the whole 'samara-like'. Ligule absent.

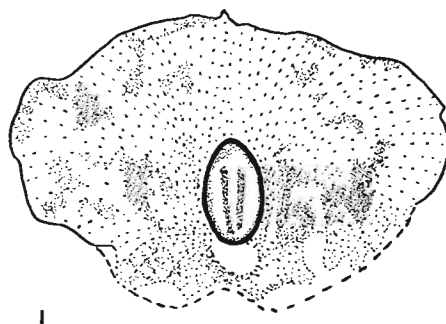
*In all the previous references Nipania was mentioned in Amrapara district while Amrapara is only a Police Chowki.

Only surface cells on the lower side of the cone-scale could be studied. Cells arranged longitudinally on the distal end of the seed while on its lateral sides they tend to diverge outwards in a fan-like manner (PL. 1, FIG. 3S, Ś). Cells mostly longitudinally elongated, few rectangular sometimes pointed (PL. 1, FIG. 4; TEXT-FIG. 2). Lateral and end-walls more or less straight, surface wall not specialized. Stomata absent.

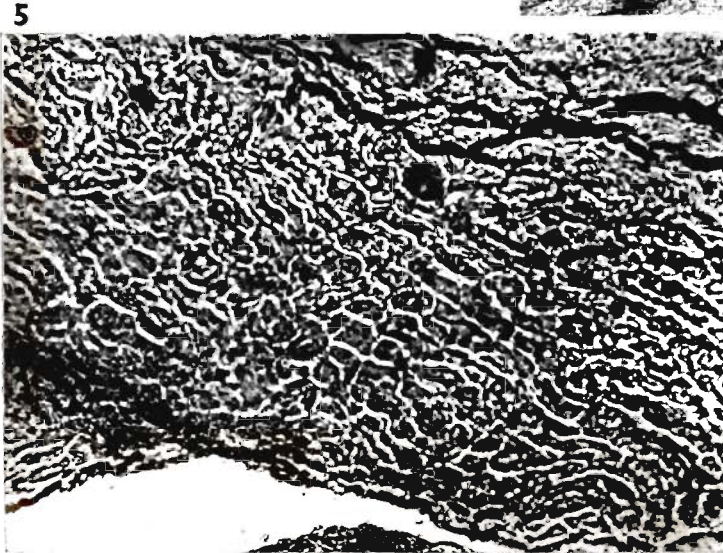
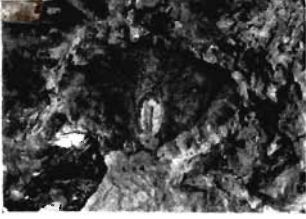
Seed oval, 6 × 3 mm.; placed in an inverted position on the adaxial side of the scale; embedded in the substance of the scale. In median longitudinal section the seed seems to be three-layered; cells of the outer and inner layer not well preserved. Middle layer 3-4 cells thick, cells thick-walled, polygonal and irregularly arranged (PL. 1, FIG. 5). Vascular supply not preserved.

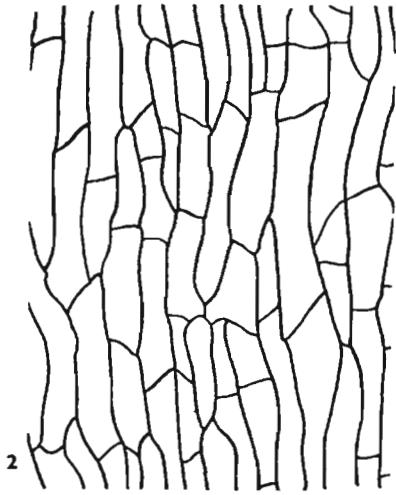
COMPARISON

Araucarites nipaniensis differs from *A. cutchensis* Fst. and *A. macropteris* Fst. in having a comparatively small seed placed on a very prominently winged cone-scale. General outline of the scale in *A. nipaniensis*



TEXT-FIG. 1 — *A. nipaniensis* n. sp. B.S.I.P. 26076. × 2/1. The dotted region represents the preserved portion of the scale, while the broken lines indicate original margin of the cone-scale.





TEXT-FIG. 2 — Surface cells on the lower side of the scale. B.S.I.P. slide No. 137. $\times 75$.

is also very different from these two species. Cone-scales of *A. bindrabunensis* Vishnu-Mittre show a marked difference from *A. nipaniensis* in having a prominent ligule and detachable seeds. Further, in *A. bindrabunensis* Vishnu-Mittre the cone-scales are small, longer than broad and very narrowly winged. Whereas, in *A. nipaniensis* the scale is much broader than long and very prominently winged. In the size of the seed the present species may be compared with *A. Brodiei* Carr. (1869) from Stonefield slate but the absence of ligule and much broader scale of *A. nipaniensis* does not conform with the latter species.

ACKNOWLEDGEMENTS

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REFERENCES

- CARRUTHERS, W. (1869). On some undescribed coniferous fruits from the secondary rocks of Britain. *Geol. Mag.* 4: 108.
- FEISTMANTEL, O. (1876). Jurassic (Oolitic) flora of Kach—"Fossil flora of the Gondwana system". *Mem. Geol. Surv. India. Pal. Indica.* 2: 1-80.
- Idem (1877). Jurassic (Liassic) flora of the Rajmahal group from Golapili (near Ellore), South Godavari district. *Ibid.* 1: 164-190.
- SAHNI, B. (1928). Revision of Indian fossil plants — I. Coniferales. *Mem. Geol. Surv. India. Pal. Indica.* 2: 1-49.
- SEWARD, A. C. & SAHNI, B. (1920). Indian Gondwana plants — A Revision. *Mem. Geol. Surv. India. Pal. Indica.* N.S. 8: Mem. 1.
- VISHNU-MITRE (1954). *Araucarites bindrabunensis* sp. nov. A petrified megastrobilus from the Jurassic of Rajmahal Hills, Bihar. *The Palaeobotanist.* 3: 103-108.

EXPLANATION OF PLATE 1

Araucarites nipaniensis n. sp.

1. *A. nipaniensis* n. sp. B.S.I.P. 26076. $\times 1/1$.
2. Counterpart of the above specimen. B.S.I.P. 26076. $\times 2/1$.
3. Median-longitudinal section of the seed along with some portion of the scale. S, showing longitudinal orientation of epidermal cells distal to the seed; \acute{S} , epidermal cells of the scale disposed in a fan-like manner diverging outwards lateral to the seed. B.S.I.P. slide No. 136. $\times 15/1$.
4. Surface cells on the lower side of the cone-scale. B.S.I.P. slide No. 137. $\times 100$.
5. Stony layer of the integument showing the irregular disposition of cells. $\times 200$.
6. Distal end of the specimen. B.S.I.P. 26076. $\times 5/1$.