

TWO BENNETTITALEAN FRUCTIFICATIONS FROM THE JURASSIC OF RAJMAHAL HILLS, BIHAR, INDIA

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ABSTRACT

Two types of *Bennetticarpus* are described from the Jurassic beds of Rajmahal Hills.

INTRODUCTION

The two Bennettitalean remains described under, are parts of a big collection of fossil plants made from different localities in the Rajmahal Hills, Bihar. They are being described separately. The specimens are in the department of Botany, Lucknow University.

DESCRIPTION

Bennetticarpus sp. A. (Pl. 1, Fig. 1)

(Specimen No. ON 116)

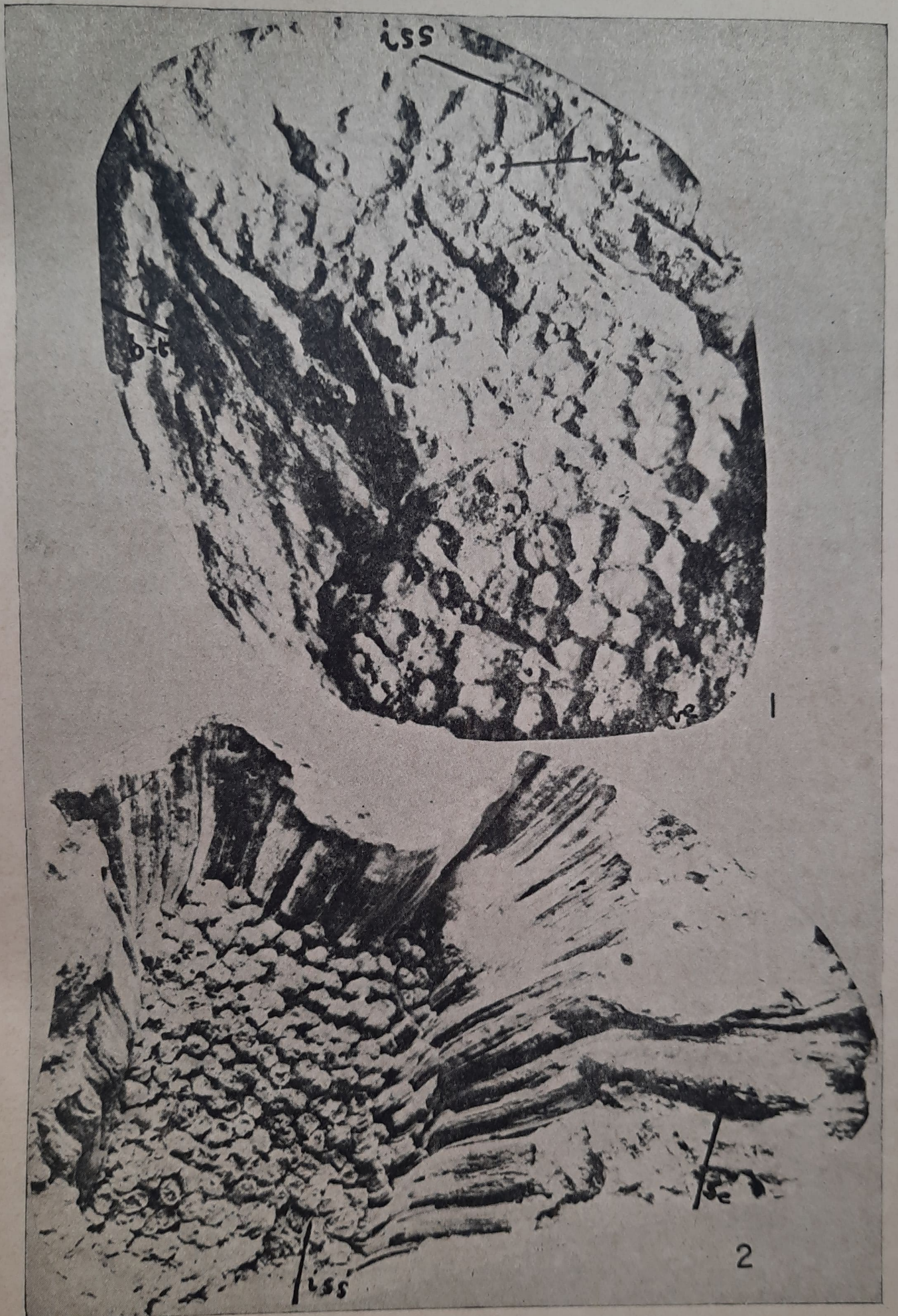
This Bennettitalean fructification is from *Onthea* and is preserved in the form of a cast. It is obovate in form, 8 mm by 6 mm and attenuated at both ends. The mould shows part of the receptacle (re) of a fruit, exposed due to the bracts having fallen off. There are, however, some clearly defined areas which arise from what looks like the stalk of the fructification. They may represent the impressions of bracts (brt). They are narrow, less than a millimeter broad and taper towards the apex and are longitudinally striated. The exposed part of the receptacle shows a mosaic pattern, consisting of 5 interseminal scales (see arrow in Fig. 1) surrounding each micropylar part of the ovule. The scale impressions (iss) are roundly triangular or polygonal while the micropylar impression (mi) has a rim round it. There is no indication of an apical sterile appendage or a basal ring of sporophylls as in some species of Bennettitalean flowers. It is, therefore, inferred that this is definitely a female fructification. Fragments of *Ptilophyllum* leaves, too fragmentary for specific determination, occur behind and near about the impression. This is perhaps one of the smallest impressions of a Bennettitalean fruit, found in the Rajmahal Hills.

Bennettitalian male and female flowers have both been described from the Rajmahal Hills by FEISTMANTEL (1877), SAHNI (1932), SAHNI AND RAO (1933), GUPTA (1943), SITHOLEY AND BOSE (1953) and RAO (1958). Some of these are petrifications.

Williamsonia santalensis Sitholey & Bose (1953), is a male flower with about 20 microsporophylls and no gynoecium present. *Williamsonia sahnii* Gupta (1943) also from the Rajmahal Hills is the impression of a bisexual flower. *Williamsonia seawardiana* Sahni (1932) is one of the best known petrification of the *Williamsonia* type, where all the plant organs except the male reproductive parts are known. But the impression described in this note differs from all these in size and the mosaic pattern of the receptacle. In spite of this difference, it is not being referred to any new species because of insufficient data about the struc-

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ture of the fruit. It is, however, desirable that the specimen described above should not be referred to the old genus *Williamsonia*, which was originally instituted by Carruthers for a flower whose outer covering of bracts was associated with fronds of the *Williamsonia gigas* type (SEWARD, 1917). But the specimen described shows not only the bracts but also the fruit inside, and could thus be more accurately referred to the non-committal fruit genus *Bennetticarpus* (HARRIS, 1932 & 1935).

Bennetticarpus sp. B. (Pl. 1, Fig. 2)

(Specimen No. K.B.12)

This is an oblique compression of an incomplete (possibly) fruit, measuring 3.25 cm by 2.5 cm and collected at Khairbani. The central area shows perhaps the receptacle broken off and exposing the transversely cut stalks of the ovules and interseminal scales (iss). In many of these there is a single central depression (Pl. 1, fig. 2) which is evidently the vascular supply running into the stalk. Towards the margin of the compression can be seen the longitudinal impression of the striated stalks. The older seminiferous scales are 0.5 mm broad and 0.7 mm long and are covered by longitudinal ridges. The seed (se) is narrow, elongate, slightly flattened, 1 mm × 7 mm in size. The surface of the receptacle is weathered and so the usual mosaic of the interseminal scales and micropyles are not clearly seen. Nor can the relative arrangement of these be made out. No perianth or any organ suggesting microsporophyll can be seen. In association with this compression are found leaves comparable to *Ptilophyllum acutifolium*. This impression too is being referred to the genus *Bennetticarpus* without any specific determination in view of paucity of data.

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EXPLANATION OF PLATE 1

1. *Bennetticarpus* sp. A—enlarged view of an impression of a Bennettitalean fructification showing the partly exposed receptacle. ×21.
 2. *Bennetticarpus* sp. B—enlarged view of an oblique compression of an incomplete female flower. A seed is seen attached to the stalk. ×5.8.
- (brt—bract; iss—interseminal scale; mi—micropylar rim; re—receptacle; se—seed).