

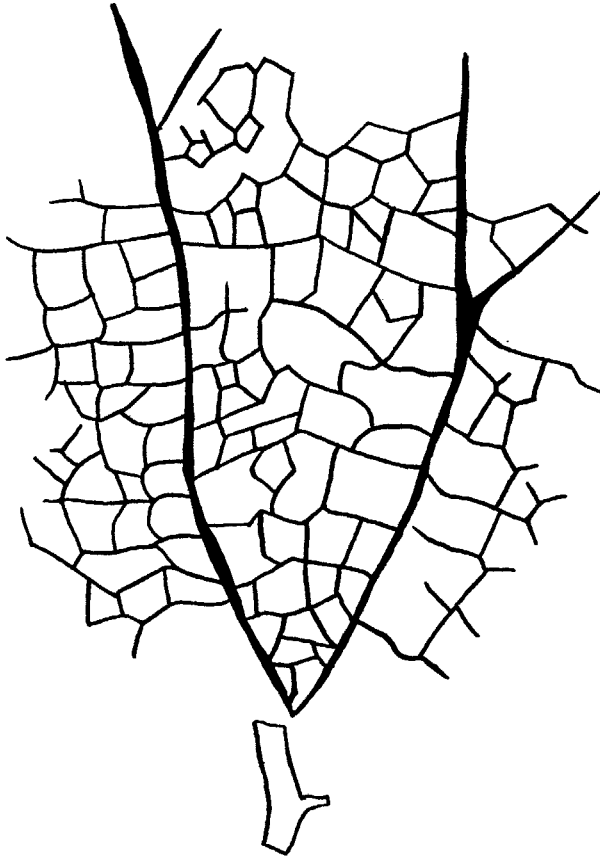
HAUSMANNIA INDICA SP. NOV. GUPTA, A DIPTERIDACEOUS
LEAF FROM THE JURASSIC OF RAJMAHAL HILLS,
BIHAR (INDIA)

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(Communicated by P. Maheswari, F.N.I.)

(Received April 6; approved for reading on August 5, 1955)

The family Dipteridaceae is well represented in the Indo-Malayan flora and the genus *Dipteris* is commonly found in North India (Seward, 1914). The family, however, has not been recorded in India in the fossil condition, except for an undoubted specimen of *Hausmannia* discovered by the author several years ago at the now well known locality Nipania in the Rajmahal Hills, Bihar (Gupta, 1936). The present note is based on that material.



TEXT-FIG. 1. Camera lucida drawing of part of the leaf of *Hausmannia indica* sp. nov. Gupta showing reticulate venation, characteristic of the Dipteridaceae. \times ca. $9\frac{1}{2}$.

Hausmannia is a characteristic fern of the Jurassic and extends downwards into the Triassic and upwards into the lower Cretaceous (Halle, 1921; Seward, 1941). This typical fossil fern is believed by common consent to belong to the family Dipteridaceae (Seward, 1914) and known to occur all over the world including the Far East and south, namely Japan and Australia. It is also comparable to the living genera *Neocheiropteris* and *Cheiropleuria* but agrees more closely with *Dipteris*. The size of the leaves in different species of *Dipteris* varies greatly in area but they are essentially similar in their plan of construction; so also is the position in the few species that have been assigned to the fossil genus *Hausmannia*.

The new species from the Indian Jurassic, *Hausmannia indica* is represented by a single specimen in two counterparts (K/192 and K/193 Sahni Coll., Lucknow Univ.). The leaf is fragmentary and measures ca. 25 × 15 mm. (Pl. XV, Fig. 1). The venation is clearly preserved (Pl. XV, Fig. 2, text-fig. 1). There are two pairs of bifurcating veins which seem to converge at a point below in relation to an axis; but this convergence is not complete in the specimen. From these veins arise a number of secondary veinlets at almost right angles; these latter again give rise to tertiary branches which are still finer and join to form small rectangular areas, approximately 1 × 2 mm. in size.

The present specimen is undoubtedly referable to the genus *Hausmannia* in the wider sense in which it is used by Richter (1906) including both the Wealden species on which Dunker (1846) founded the genus and the Jurassic species on which Andrae (1885) founded the genus *Protoripis* (Andrae, 1885; Richter, 1906). Our specimen is sterile and too fragmentary to give a clear idea of the entire shape and size of the leaf and hence it is not possible to compare it with the Indian species of *Dipteris* (Beddome, 1892) or with the abnormal leaves of *Pleopeltis simplex* (Kashyap and Mehra, 1934). However, it can be compared with species of *Hausmannia* like *H. crenata* and *H. integrifolia* (Richter, 1906) as well as *H. ussuriensis* (Kryshtofovich, 1923; Kryshtofovich and Prynada, 1932). But it is rather difficult to compare with the eastern species described by Ôishi from the Rhaetic of Nariwa, Japan, such as *H. nariwaensis* and *H. dentata* (Ôishi, 1932) and *H. wilkinsi* Walkom from Cape York (Walkom, 1928). It has, however, some resemblances in the venation of leaves described by Carpentier from China (Carpentier, 1934), although it differs in size and presumably in its entire shape. The Rajmahal specimen is very fragmentary. However, in view of its rarity in the Indian rocks it seems advisable to give it provisionally a new specific name.

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TOP FIG. K/192 Sahni Coll. *Hausmannia indica* sp. nov. Gupta from the Jurassic of India. Impression of the leaf on the rock characteristic of the Rajmahal Series showing bifurcating veins and reticulum of veinlets. Almost natural size.

BOTTOM FIG. Same enlarged $\times 3$.