

SPECIFIC IDENTIFICATION OF THE GUTTIFEROUS LEAVES FROM THE TERTIARY OF RAJASTHAN

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ABSTRACT

Of the Guttiferous remains described in 1951 by Lakhanpal and Bose from the Fuller's earth bed at Kapurdi, Western Rajasthan, the leaf impressions have been assigned to two new species, *Mesua tertiara* and *Garcinia boroohii*, giving their precise description and numbers of the type specimens.

INTRODUCTION

IN 1951 Lakhanpal and Bose described some fossil leaves and fruits of the Guttiferae from the Fuller's earth bed at Kapurdi, Western Rajasthan. They were identified only up to the generic level although in most of them the details of preserved characters enabled fairly reliable comparisons with some modern species of the Guttiferae. It is now felt that the available structural details are sufficient, at least in the case of the leaf-impressions, to assign them to some definite species instead of just describing them as *Mesua* sp. and *Garcinia* sp., as was done previously. Hence, the present paper is published, giving the specific identification of the two types of leaves.

DESCRIPTION

As described originally (LAKHANPAL & BOSE, 1951), all the specimens were impressions on soft yellowish clay known as Fuller's earth dug out of wells at Kapurdi, (25° 54' 30" N: 70° 22' 30" E), a village about 12 miles north of Barmer in Rajasthan. The age of this Fuller's earth bed is regarded as Middle Eocene.

Thirteen of the specimens were leaf-impressions assignable to *Mesua* and two were leaf impressions representing *Garcinia*. Besides, there were three types of fruit impressions possibly belonging to *Calophyllum*, *Garcinia* and Guttiferae in general respectively. The leaves of *Mesua* are described here under a new species *Mesua tertiara* and those of *Garcinia* under *Garcinia boroohii*, a new species named after

Mr. S. K. Borooh who first collected plant fossils from Kapurdi and sent them to Prof. B. Sahni for investigation. Of the fossil fruits, those of *Garcinia* are also referred to this species, because it is quite probable that the leaves and fruits occurring in the same bed might have belonged to the same species.

The specimens selected as types have been photographed again to illustrate the present paper.

FAMILY — GUTTIFERAE

Genus *Mesua* L.

Mesua tertiara sp. nov.

Pl. 1, Figs. 1-4

Leaves elliptic oblong to lanceolate; varying in size from about 6 × 2.5 cm. to 10.5 × 1.5 cm.; apex bluntly acuminate or tapering to a point in lanceolate leaves; base broadly obtuse to acute; petiole small, 0.5 to 1.25 cm. in length; venation pinnate reticulate, unicostate; midrib prominent, firm, may be slightly curved; secondaries, thin, numerous, closely placed, parallel, running subtransversely to the margin; tertiaries forming a close network of quadrangular or polygonal meshes; margin entire; texture firm.

As stated earlier the fossil species shows close resemblance with the modern *Mesua ferrea*.

Collection — Syntypes, B.S.I.P. Museum Nos. 680, 685 & 686. (Previous numbers, K₉, K₈ & K₂ respectively).

Genus *Garcinia* L.

Garcinia boroohii sp. nov.

Pl. 1, Figs. 5 & 6

Leaf lanceolate; about 7 × 1.6 cm.; apex? acuminate (not preserved in the specimens observed); base acute; petiole

small, about 0.6 cm. long; venation pinnate, reticulate, unicostate; midrib fairly stout, slightly curved; secondaries 8 or 9 pairs, very slender, arising alternately at about 40°, running rather irregularly, curving up near the margin to meet the next higher secondary; tertiaries still finer, running irregularly and branching frequently to form very fine polygonal meshes; margin entire; texture thinly chartaceous.

Of the three types of fruits reported from the same deposit, there is one (LAKHANPAL & BOSE, 1951, PL. 10, FIG. 10) with a globose shape and thick outer wall. It shows resemblance with the fruits of many species

of *Garcinia* and may as well be referred to *G. boroohii*. However, in view of the present insufficient state of our knowledge about this type of fossil fruits, it would not be advisable to assign it definitely to this species.

In the previous paper it was mentioned that this fossil resembles the leaves of two modern species, *G. cowa* and *G. lanceaefolia*. However, on further consideration there appears to be closer resemblance with *G. lanceaefolia* in size and in the number of secondaries.

Collection — Holotype, B.S.I.P. Museum No. 684 (Previous number, K₁₆).

REFERENCE

- LAKHANPAL, R. N. & BOSE, M. N. (1951). Some Tertiary leaves and fruits of the Guttiferae from Rajasthan. *J. Indian bot. Soc.* **30** (1-4): 132-136.

EXPLANATION OF PLATE 1

1-3. *Mesua tertiar*a sp. nov. × 1. Syntypes. B.S.I.P. Museum Nos. 680, 685 & 686 respectively.

4. A portion of specimen No. 680 (Fig. 1) magnified 5 times to show the details of finer venation.

5. *Garcinia boroohii* sp. nov. × 1. Holotype. B.S.I.P. Museum No. 684.

6. A portion of specimen No. 684 (Fig. 5) magnified 5 times to show the details of venation.



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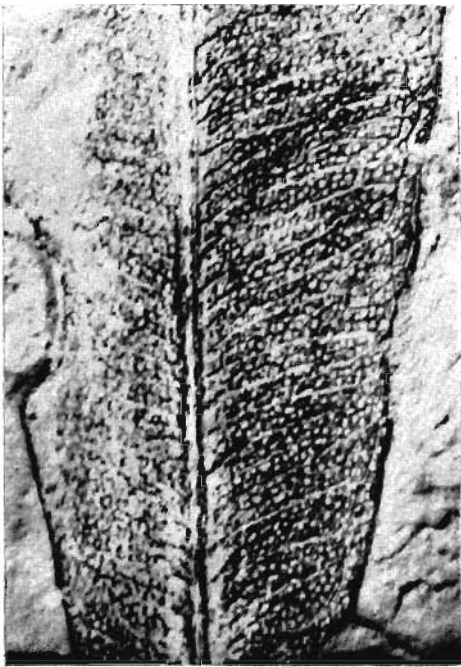


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