

GLOTTOLEPIS RUGOSA GEN. ET SP. NOV. FROM TRIASSIC BEDS OF NIDPUR

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ABSTRACT

Glottolepis rugosa gen. et sp. nov. is based on some tongue shaped scale-leaves collected from Nidpur, Sidhi district, Madhya Pradesh. The cuticle of *G. rugosa* is very tough and is hypostomatic. Stomata are sparsely distributed and concentrated more towards base.

INTRODUCTION

AMONGST the various specimens of *Dicroidium*, collected from Nidpur (24°7' : 81°54'), Sidhi district, Madhya Pradesh, quite a few isolated scale-leaves have been found. Most of them are tongue shaped and have very tough cuticle. Besides the detached scales, three specimens have been collected where a few scales are seen grouped together (PL. 1, FIG. 6). In these specimens the scales are arranged in a spiral. In addition to these specimens a large number of detached scales have been obtained by bulk maceration as well. Cuticular preparations have been made out of these specimens and the cuticle has been found to be quite distinct from all the scale-leaves known so far. These scale-leaves are here described under a new genus *Glottolepis*.

Genus — *Glottolepis* gen. nov.

Diagnosis — As for the only species, *Glottolepis rugosa* sp. nov.

Glottolepis rugosa sp. nov.

Diagnosis — Spirally arranged, thick, tongue shaped or ovate-lanceolate scale-leaves; measuring 2.1-4 cm. in length and 1.1-1.8 cm. in breadth; base truncate; apex obtuse or rounded. Surface of scale-leaves rugose, margin usually entire.

Cuticle on both surfaces tough but upper slightly thinner than lower. Stomata present only on lower side. Cells on upper side usually polygonal, sometimes much longer than broad; without any definite arrangement, at places tending to be serially

arranged. Anticlinal walls thick, straight; periclinal walls generally smooth or mottled, at times finely striated, sometimes slightly thickened. Cells on lower side polygonal, much longer than broad, irregularly arranged but sometimes more or less serially placed. Anticlinal walls thick and straight; periclinal walls mottled or finely striated, sometimes cells near base slightly thickened with narrow thin strip running in longitudinal direction. Near base and apex cells commonly with a large circular or oval thinly cutinized area. Stomata sparsely distributed, scattered, concentrated more towards base, thinning gradually from base to apex; longitudinally orientated. Subsidiary cells 5-9, mostly 5 or 6, rarely 8 or 9; sometimes forming a ring; cell outline straight, surface-wall towards stomatal pit mostly thickened, at times papillate; papillae not so well developed. Guard cells mostly not preserved, sunken. Encircling cells occasionally present, unspecialized, mostly with mottled surface.

Holotype — No. 33981 of the Birbal Sahni Institute of Palaeobotany, Lucknow.

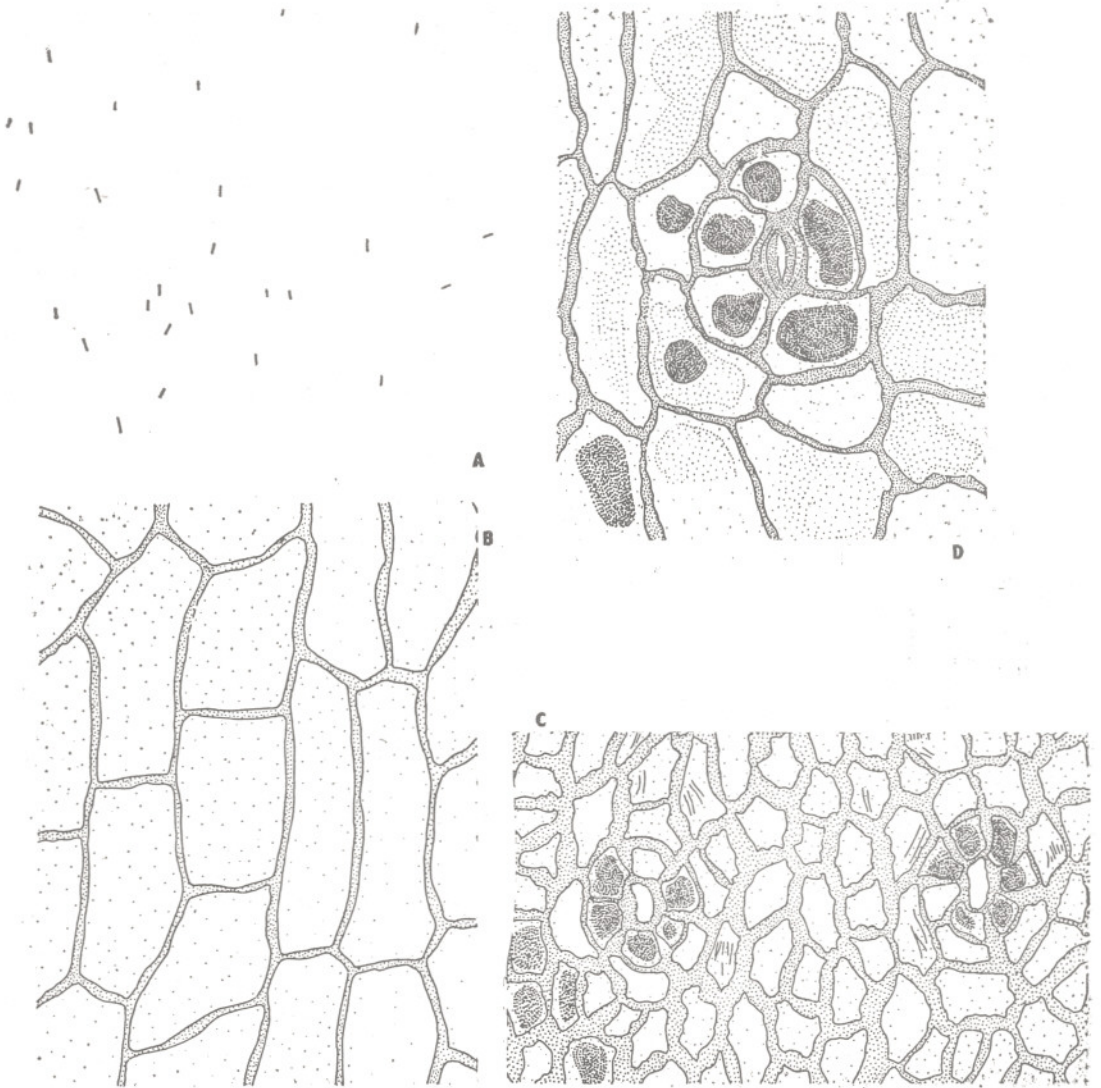
Locality — Nidpur, Sidhi district, M.P., India.

Age — Lower Triassic.

COMPARISON AND DISCUSSION

Glottolepis rugosa gen. et sp. nov. is tongue shaped and has a very tough cuticle. It is hypostomatic and its stomatal apparatus comprises 5-9 subsidiary cells but they are mostly 5-6 in number. In its tough nature of cuticle and stomatal apparatus it may be compared with some of the species of *Dicroidium* collected from Nidpur. In all these species the stomatal apparatus is amphicyclic and the subsidiary cells are mostly 5-6 in number. But *G. rugosa* differs from the Nidpur *Dicroidium*s in being hypostomatic.

The cuticle of *G. rugosa* differs markedly from the species of *Cycadolepis* Saporta (1875) in having haplocheilic type of stomata.



TEXT-FIG. 1—*Glottolepis rugosa* gen. et sp. nov.—A, lower surface, showing distribution of stomata; slide no. 34011-1, $\times 40$. B, upper $\times 500$. C, a few stomata and cells from lower surface; slide no. 34012-1, $\times 500$.

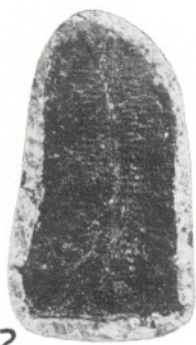
nov.—A, lower surface, showing distribution of stomata; slide no. 33983-1, $\times 250$. D, a single stoma from lower surface; slide no. 33984-1, $\times 500$.

From *Deltolepis* Harris (1942, 1964) the present genus can be distinguished by its mere shape because while *Deltolepis* is broadly triangular in shape, *G. rugosa* is tongue shaped. Moreover, the cuticle of *Deltolepis* is much thinner than *G. rugosa* and also in the former species stomatal apparatus is monocyclic, whereas, in the latter species they are occasionally dicyclic.

Among the Palaeozoic scale-leaves, some of the scale-like leaves of *Glossopteris*, viz. *Squama forma integerrima* Seward & Sahni (1920) may be compared with *G. rugosa* in general shape. But all such scales have net venation. *Walikalia* Høeg & Bose (1960) differs markedly from *G. rugosa* in being much larger in size and also it is oval or circular in shape.



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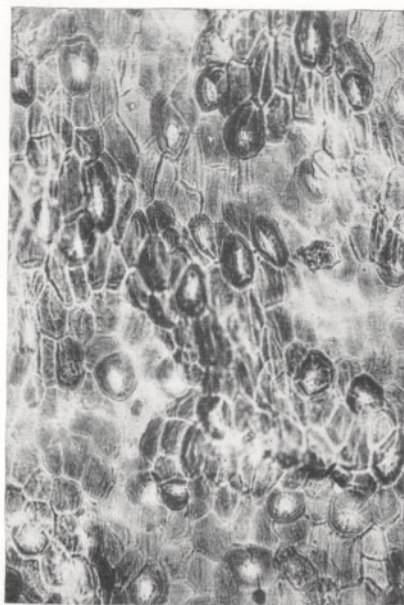
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EXPLANATION OF PLATE 1

Glottolepis rugosa gen. et sp. nov.

1. Specimen no. 33977. $\times 1$.
2. The above magnified. $\times 2$.
- 3-5. Specimen nos. 33978 (Fig. 3), 33982 (Fig. 4), 33979 (Fig. 5). $\times 1$.
6. Holotype no. 33981. $\times 1$.
7. Lower cuticle showing cells with circular or oval thinly cutinized areas; slide no. 33985-1. $\times 150$.
8. Lower cuticle, showing stomatal distribution; slide no. 33984-1. $\times 150$.
9. A stoma from lower surface; slide no. 33985-1. $\times 500$.