A NEW MONOSACCATE POLLEN GENUS FROM KAMTHI FORMATION OF GODAVARI GRABEN, ANDHRA PRADESH, INDIA

The Kamthi Formation of Godavari Graben has yielded a number of genera including trilete, monolete spores and monosaccate and disaccate pollen grains. The study of palynofossils of these sediments has revealed a new association of morphographic characters which has been described in the present paper under the genus *Kamthisaccites* gen. nov.

The study is based on the material recovered from a bore hole GJ-6 from Bhopalpalli area of Godavari Graben, Andhra Pradesh, India.

Systematic Description

Anteturma —*Varigerminates* Potonié 1975
Turma —*Saccites* Erdtman, 1947
Subturma —*Monosaccites* Chitaley, 1951
Infraturma —*Taeniaesaccites* inf. nov.
Infraturma diagnosis—Monosaccate pollen bearing taeniae on central body.

GENUS—*KAMTHISACCITES* gen. nov.
Type species—Kamthisaccites kamthiensis sp. nov.

Generic Diagnosis—Subcircular to circular, monosaccate pollen with taeniae on proximal side. Saccus attachment equatorial on proximal side and subequatorial on distal side.

Generic Description—Pollen grains monosaccate, subcircular to circular in shape. Central body distinct, thin, conforming to the saccus outline, circular to subcircular. Taeniae present on proximal face, distinct and separated from each other. Exine on taeniae thin, finely intramicroreticulate. Saccus attachment equatorial on proximal side and subequatorial on distal side without folds. Saccus intrareticulations fine to medium, radially oriented, muri well defined.

Comparison—It is evident from the above description that the genus is characterised by the presence of proximal taeniae on central body in monosaccate condition. No such monosaccate genus has been described so far from the Lower Gondwana sediments of India. *Striomonosaccites* Bharadwaj (1962) and *Distriomonosaccites* Bharadwaj (1962) from Raniganj Formation of India have similar shape and saccus attachment as *Kamthisaccites* gen. nov. but differ in having striations instead of taeniae. *Crustaesporites* Leschik (1956) from the Zechstein of Neuhof (Bei Fulda) bears taeniae on the central body but is a trisaccate pollen grain having folds present at the base of saccus attachment. Jansonius (1962) emended the generic diagnosis of *Crustaesporites* considering it to be a taeniate monosaccate pollen grain and described his own specimens from the Lower Triassic of Canada under the genus *Crustaesporites* (Leschik). However, *Crustaesporites* is distinctly trisaccate and not monosaccate as interpreted by Jansonius and hence pollen grains described by Jansonius (1962, pl. 12, figs. 1 & 2) do not find place under the genus

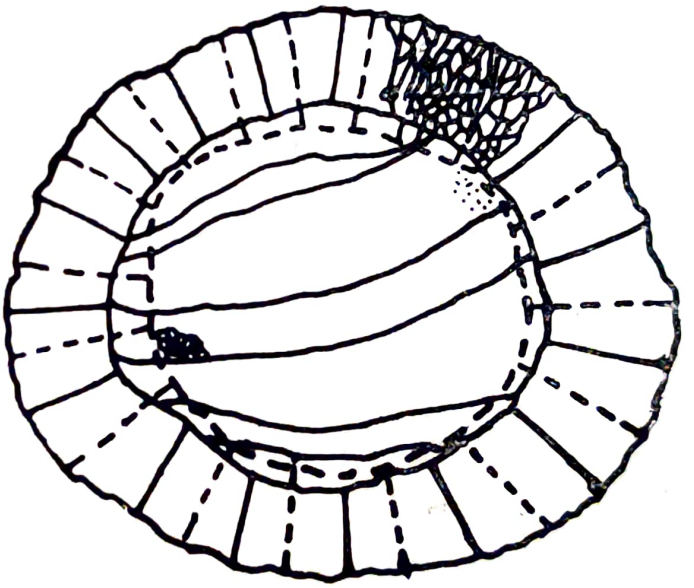
Crustaesporites Leschik since they are typically monosaccate in nature. The specimens ascribed to *Kamthisaccites* gen. nov. compare with the specimens of Jansonius in being taeniate monosaccate but they differ from latter in the absence of folds on the distal side at the zone of saccus attachment which is very well present in the latter. Presence or absence of folds along the saccus attachment has been taken as an important character in generic circumscription and hence, the presently described specimens are distinctly different from those described by Leschik (1956) and Jansonius (1962).

Thus, the taeniate monosaccates so far known are restricted to late Permian and in this respect *Kamthisaccites* gen. nov. is stratigraphically significant.

Kamthisaccites kamthiensis sp. nov.

Pl. 1, Figs. 1-6

Holotype—Pl. 1, Fig. 1; Size 135 x 152.5 μm; BSIP slide no. 9480, Text-fig. 1.



Text-fig. 1—*Kamthisaccites kamthiensis* gen. et sp. nov.—holotype showing taeniae and nature of saccus attachment ×500.

Type Locality—Bore hole GJ-6, depth 258 m, Bhopalpalli area, Godavari Graben, A. P., India.

Horizon & Age—Kamthi Formation, late Permian, Lower Gondwana.

Diagnosis—Monosaccate pollen, subcircular to circular with distinct, thin central body having 3 taeniae on proximal side. Exine finely microreticulate. Saccus attachment equatorial on proximal side and subequatorial on distal side.

Description—Pollen grains monosaccate, subcircular to circlar in overall shape. Size range 81 to 180 μm. Central body distinct, thin, subcircular to circular, 65 to 140 μm in size. Exine finely intramicroreticulate, without any mark. 3 taeniae present on proximal face of central body, taeniae widely separated. Proximal attachment of saccus to central body equatorial, distal attachment subequatorial, distal overlap ¼ body radius. Saccus fine to mediumly intramicroreticulate, meshes fine, radially oriented.

References

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JANSONIUS, J. (1962). Palynology of Permian and Triassic sediments, Peace River area, Western Canada. *Palaeontographica*, **B 110** : 35-98.

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Explanation of Plate

(All magnifications × 450 except Fig. 3. × 500)

1 to 6. *Kamthisaccites kamthiensis* gen. et sp. nov.

3. *Kamthisaccites kamthiensis* gen.. et sp. nov., Holotype; B. S. I. P. slide no. 9480, Negative No. 27/20 Transmitted light.

2, 4, 5 & 6. *Kamthisaccites kamthiensis* gen' et sp. nov. Specimens under differential interference contrast showing taeniae. B. S. I. P. slide nos. 9481, 9481, 9482, 9483 respectively. Negative No. 42/10, 42/11, 42/8, 42/2 respectively.

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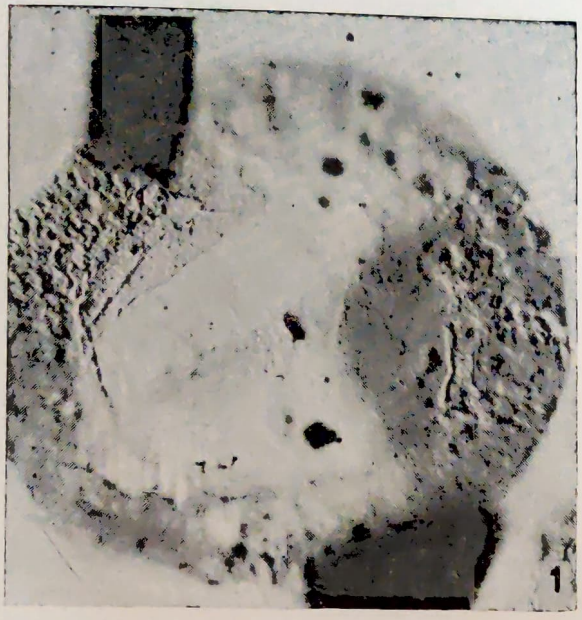
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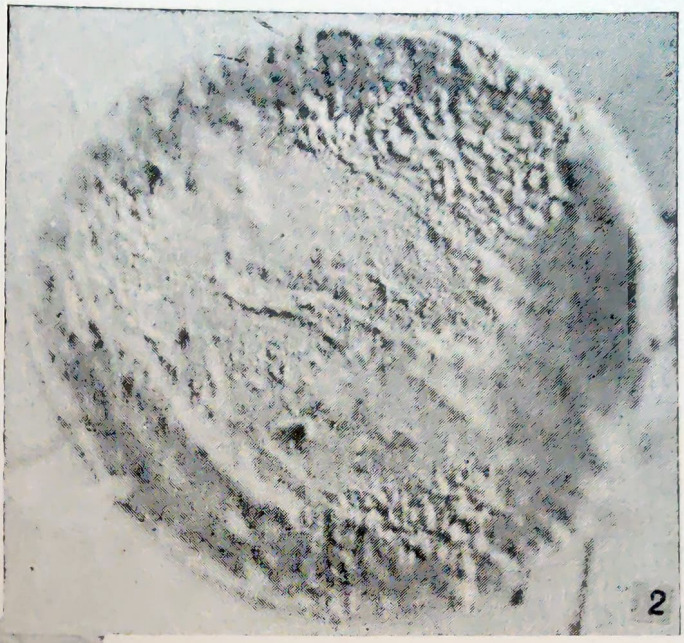
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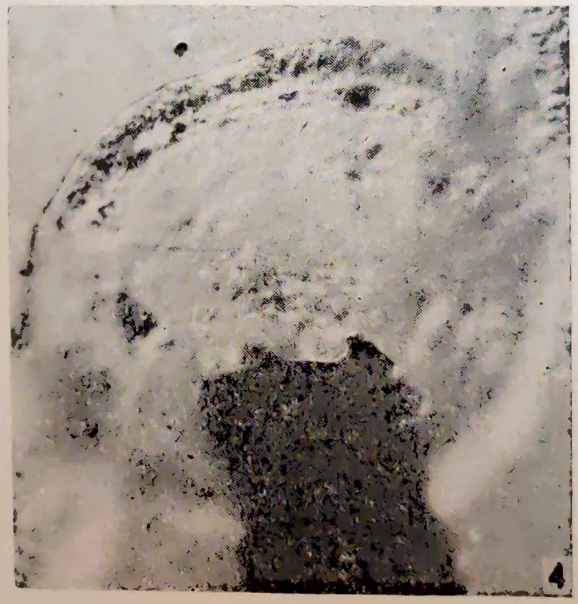
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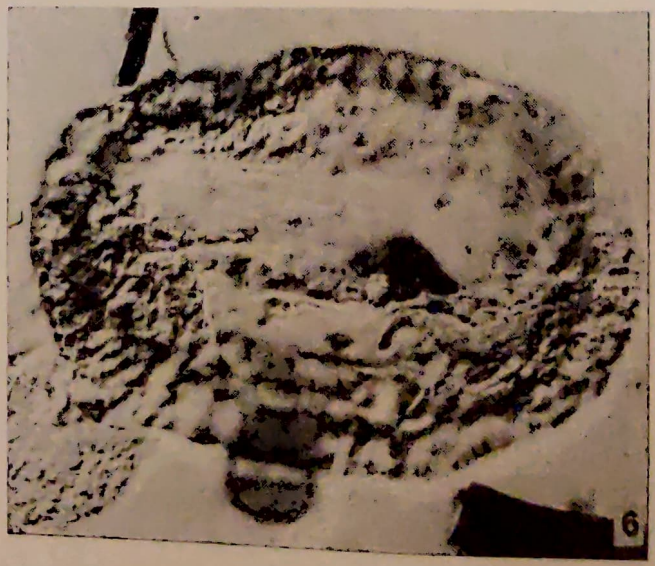
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