Dharmsalasporis, a new spore genus from the Dharmsala Group of Kangra District, Himachal Pradesh

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A new spore genus, *Dharmsalasporis*, is recorded from the Dharmsala sediments of Mcleodganj-Dharmsala Road section in Kangra District, Himachal Pradesh. The genus is monotypic and is characterized by its very large size and exceptionally short laesurae, never exceeding one-sixths of the spore radius.

Key-words- Pteridophytic spore, Dharmsala Group, Himachal Pradesh (India).

THE Dharmsala Group, developed in Kangra District of Himachal Pradesh, is made up of fine to medium grained, grey to purple, compact and jointed sandstones intercalated with maroon, red, purple, grey and green clays and sandy clays. It overlies the Subathu Formation and is succeeded by Siwalik Group (or Nahans). Stratigraphically, it is considered equivalent to the Dagshai and Kasauli formations of Simla Hills and Murree Group of Jammu. The geology of these sediments has been studied by Nautiyal *et al.* (1962), Raiverman (1964), Gupta and Thakur (1973), Karunakaran and Rangarao (1979), etc. Palynological information from these sediments, though scanty, has been published by Ghosh *et al.* (1963), Venkatachala (1972), Mathur and Venkatachala (1979), Dogra *et al.* (1985) and Saxena and Bhattacharyya (1990).

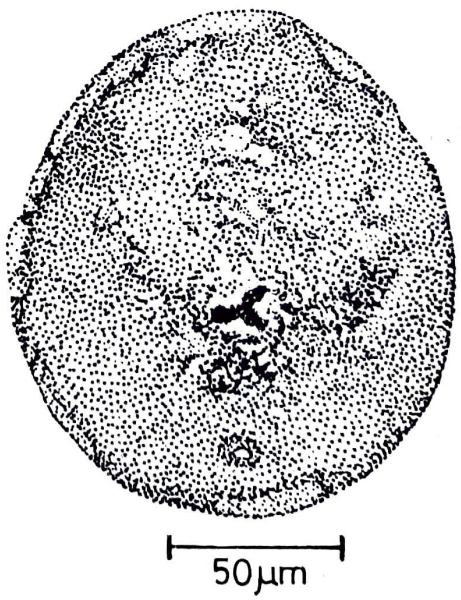
The Dharmsala Group is well exposed along Mcleodganj-Dharmsala Road, north of Dharmsala Town (Lat. 32° 13′ N: Long. 76° 19′ E). Eightyseven samples were collected from this section for palynological study. The palynoflora recovered includes algal and fungal remains, pteridophytic spores and gymnospermous and angiospermous pollen. In this assemblage, the spore genus *Dharmsalasporis* is new, as it could not be assigned to any of the known spore genera. A description of this genus is given below:

Genus - *Dharmsalasporis* gen. nov.

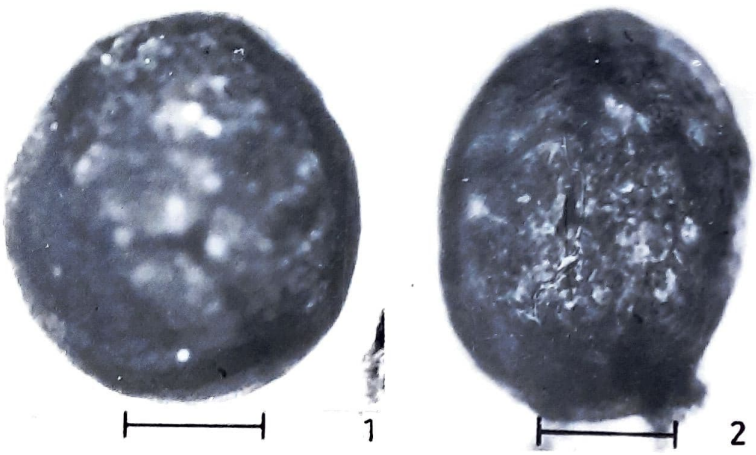
Type species - *Dharmsalasporis indicus* gen. *et* sp. nov.

Diagnosis - Spores circular-subcircular, oval or subtriangular; very large sized; trilete, rays well defined, very short, extending less than one sixth of the spore radius; exine psilate to punctate.

Comparison - The present genus compares with *Todisporites* Couper (1958) in its circular-subcircular shape but the latter differs in being much smaller in size and having longer laesurae. *Lygodiumsporites* Potonié *et al.* (1950) ex Potonié (1956) also differs by its smaller size and longer trilete rays. *Intrapunctisporis* Krutzsch (1959) can be differentiated by having intrapunctate exine,



Text-figure 1.-*Dharmsalasporis indicus* gen. *et* sp. nov. (Holotype).



Figs 1 & 2. *Dharmsalasporis indicus* gen. *et* sp. nov. (Bar scale = 50 µm).

longer laesurae and smaller size. *Calamospora* Schopf *et al.* (1944), recorded from the Late Palaeozoic sediments, differs in having a thin, granulose to rugose exine with characteristic short taper-point folds of variously crescentic or narrowly lenticular outline. Moreover, *Calamospora* has an inner body and trilete rays longer than those in the present genus. *Dharmsalasporis* gen. nov. differs from all the spore genera in its exceptionally large size and short laesurae.

Dharmsalasporis indicus sp. nov.

Figs. 1-2, Text-fig. 1

Holotype -Fig. 1, text-fig. 1, size 138 x 128 µm, slide no. BSIP 11117/9, Repository - Birbal Sahni Institute of Palaeobotany, Lucknow.

Type Locality -Mcleodganj-Dharmsala Road section, north of Dharmsala, Kangra District, Himachal Pradesh.

Type Horizon - Dharmsala Group (Miocene).

Description-Spores mostly circular-subcircular but may also be oval or subtriangular. In subtriangular spores, interapical margins are convex and apices broadly rounded. Size range 128-175x113-145 µm. Trilete, rays extending one-tenth to one-sixth of the spore radius, exine of the laesurae region thicker and darker than rest of the exine. Exine 1.5 to 4 µm thick, psilate to faintly punctate, sometimes degraded imparting pseudo-ornamentational patterns.

Remarks - *Todisporites* sp. described by Singh (1977, p. 191, pl. 1, fig. 25) closely resembles with the present species. The specimen recorded by Singh (1977) is 100-112 µm in size and has laevigate-weakly intrastructured exine and trilete rays extending less than one-fourths spore radius.

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