# A NEW POLLEN, *ARCICOLPITES HIRPURENSIS* GEN. ET SP. NOV., FROM HIRPUR FORMATION (LOWER KAREWA), KASHMIR VALLEY, INDIA

During the course of pollen analysis of sediments from Hirpur Loc. I, III and Ningle Nullah of Hirpur Formaton (33°41'N, 75°41'E), Lower Karewa, Kashmir, an unidentifiable pollen taxon was encountered. At Hirpur Loc. I the frequency of this taxon is to the tune of 10% of the total vegetation which slowly decends upwards lowering to 4% at Loc. III and confined to the bottom samples only and thereafter, it disappears in the vertical range. However, at Ningle Nullah, it is present throughout the profile but in a very low frequency.

This pollen has been considered as an important marker for stratigraphical correlation as well as age determination in this intermontane basin (Gupta *et al.*, 1984a). In view of the above facts it was deemed necessary to designate this form to the status of a new genus and species. Earlier it was informally designated as Type-1 pollen for all purposes (Dodia *et al.*, 1982; Gupta *et al.*, 1984a, 1884b).

Genus—*ARCICOLPITES* gen. nov.

Type species—*Arcicolpites hirpurensis* gen. et sp. nov.

Fig. 1

*Derivation of name*—The generic name *Arcicolpites* is derived from unique pollen character where colpi form an arch. The specific name *hirpurensis* is after Hirpur village where Hirpur Formation has been geologically established (Bhatt, 1975).

## Diagnosis

Pollen grains dicolpate, subprolate-prolate, 25.0×17.0-31.0×19.0 μm. Colpi 26.0 μm long and 5.0 μm wide at the centre, crassimarginate, apocolpium 2.0—3.0 μm; mesocolpium 5.0 μm, one end of the colpi merges forming an arch while in other it remains separate. Sexine pattern generally psilate and sometimes obscure but exine configuration indiscernible under light microscopy. Exine tenuimarginate, measuring about 1.0 μm, sexine and nexine not distinguishable, tegillate, margins uneven. *Holotype*—Fig. 1, PRL Project collection Slide no. 9556/Pollen no. 1.

*Type locality*—Hirpur Loc. III along Rembiara River in front of Hirpur village, Kashmir valley.

*Comparison*—In order to trace the possible affinities of the fossil pollen recovered from Lower Karewa, Kashmir, published descriptions, photographs and pollen key were consulted (Erdtman, 1952; Ikuse, 1956; Faegri & Iversen, 1975; Nair 1965; Rao & Shukla, 1975; Moore & Webb, 1978 and Gupta & Sharma, 1986). Though two colpate condition is very rare in angiosperms, a few taxa such as *Eucryphia cordifolia*, *E. lucida*, *E. moorei* (Eucryphiaceae), *Hydnora africana* (Hydnoraceae), *Spigelia anthelmia S. loganioides*, *S. marylandica* (Loganiaceae, Spigelieae), *Atherosperma moschata*, *Doryphorea sasfras*, *Lurelia aromatica*

Figure 1—*Arcicolpites hirpurensis* gen. et sp. nov. (× 2200): Proximal view.

(Monimiaceae), *Forsythia suspensce* (Oleaceae), *Hypeconum leptocarpum*, *H. pendulum* (Papaveraceae), *Helleborus niger* (Ranunculaceae), *Capraria biflora*, *Hyobanche sanguinea*, *Pedicularis hirsuta* (Scrophulariaceae), *Sericostoma albidum* (Boraginaceae), *Pringlea antiscorbutica* (Brassicaceae), *Crypteronia paniculata* (Crypteroniaceae), *Euryale ferox*, *Nymphaea* sp. (Nymphaeaceae), *Calla* sp. (Araceae), *Tofieldia* (Liliaceae) and *Tamus* sp. (Dioscoreaceae), have dicolpate pollen grains with colpi free at both the ends. The pollen grains of *Eucryphia cordifolia*, *E. lucida*, *E. moorei*, *Helleborus niger* and *Pedicularis sanguinea* are disyncolpate.

The affinities of the present fossil pollen in question does not cohere with any extant taxon. Hence, it is proposed to give it an artificial name, i.e., *Arcicolpites hirpurensis* gen. et sp. nov.

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