

—brackish to lagoonal deltic environment, where the sun's light penetrated and facilitated oxidation resulting in absorption of dissolved mineral substances. The deposition in the continental margin of the Fe-Mg and sulphide mineral matter had the schistose and gneissose precambrian terrain as its provenance.

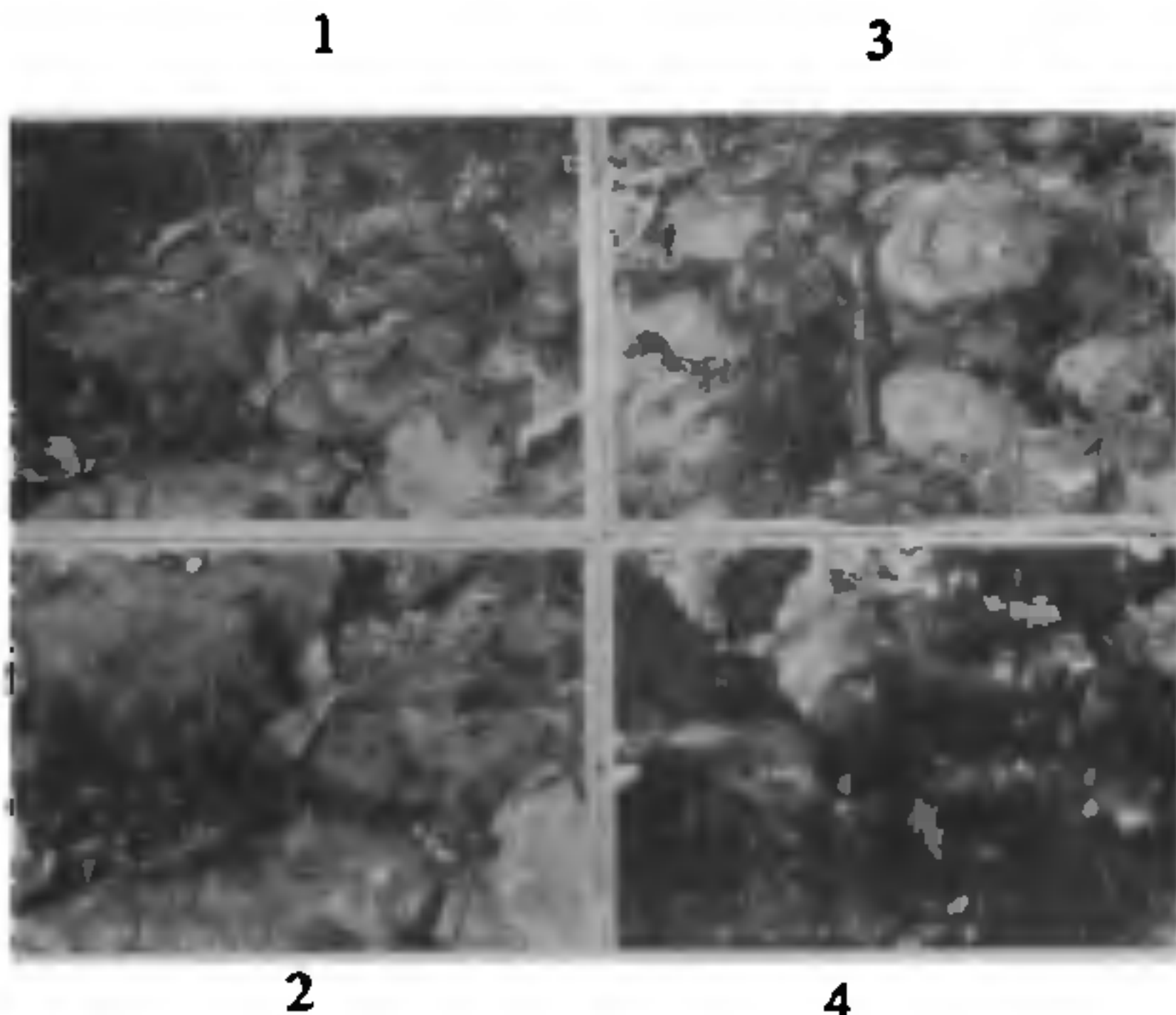
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PAHOEHOE TOES IN THE BASIC VOLCANIC FLOWS OF THE BIJAWAR GROUP, KURRAT AREA, LALITPUR DISTRICT, UTTAR PRADESH

This note records well preserved pahoehoe toes in the basic volcanic flows which occur at Kurrat and form Kurrat Member of the Sonrai Formation of the Bijawar Group (Figs. 1-4). These volcanic flows have



FIGS. 1-4. Pahoehoe toes in the basic volcanic flows of the Bijawar Group, Kurrat area, Lalitpur District, Uttar Pradesh.

been referred to as pillowed basalts and are considered as possibly forming the youngest lithostratigraphic member of the Sonrai Formation (Prakash *et al.*²). The occurrence of pahoehoe toes is of great significance because it establishes the contemporaneity of the basic volcanic activity during Bijawar sedimentation and also distinguishes any other post-Bijawar igneous activity from these basic rocks.

The pahoehoe toes show hummocky appearance. These are circular to elliptical in outline and are generally interconnected. The size ranges from 10 to 100 cms in diameter. The maximum height is about 30 cms. The vesicles and amygdales are not seen. Megascopically the rock appears quite fresh and dark greenish black in colour without any visible foliation or lineation. The rock is aphanitic. However, the granularity near the upper surface increases. This increase in the granularity has been ascribed to the development of actinolite needles due to low grade of metamorphism to which the rocks of the Bijawar Group have been subjected. In thin section, the rock is an amphibolite in which very thin slender laths of actinolite are anastomosingly arranged in a cryptocrystalline matrix. A few grains of ilmenite are also seen. Small granules of calcite are sparingly distributed. The rock is completely recrystallised and no relict structure is recorded.

It appears that the original rock must have been a microcrystalline or cryptocrystalline basic lava. The absence of vesicles and amygdales, and radial symmetry distinguishes the pahoehoe toes from the pillow structure (Macdonald)¹. The pahoehoe toes indicate that the eruption of the lava must have taken place on the land in the vicinity of the Bijawar basin. These structures also suggest that the volcanoes must have been much nearer to the sedimentation basin. There is much mineralisation in the Bijawar Group (Prakash *et al.*)². It is suggested that the occurrence of pahoehoe toes in the Kurrat volcanic flows must be taken into consideration for preparing any working model for the discovery of minerals in the Bijawar Group.

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