(lit. m p. 141°)[7], (Found; C, 83.70; H, 10.00; $C_{36}H_{50}O_2$ reqd. C, 83.73; H, 10.07 %); reduction (100 mg of genin + 100 mg Pt catalyst and 20 ml glacial AcOH, shaken with H_2 for 10 hr), m.p. 142–44°, (lit. m.p. 143°)[7], (Found, C, 83.60; H, 12.48; $C_{29}H_{52}O$ reqd; C, 83.63; H, 12.50 %); oppenauer oxidation [100 mg of genin + 5 ml C_6H_{12} + 120 mg $(Me_2CHO)_3$ Al + 10 ml Ph-Me], m.p. 76–80° (lit. m.p. 80°)[7], (Found; C, 84.88; H, 11.20; $C_{29}H_{46}O$ reqd; C, 84.87; H, 11.21 %); ozonolysis (100 mg of genin + 10 ml gl AcOH + O_3 ca 2 %, as usual) followed by p-NO_2-Ph-NH-NH_2 treatment gave α-ethylisovaleraldehyde, m.p. 85–87° (dec.) [lit. m p. 85–88° (dec.) and Co-TLC][7]. (Found; C, 62.40; H, 8.00; N, 16.82; $C_{13}H_{20}N_3O_2$ reqd; C, 62.40; H, 8.00; N, 16.80 %).

Permethylation and hydrolysis of the saponin

The saponin (100 mg) was methylated by Hakomori's method as usual which afforded a methylated saponin, m.p. 130–32°. The methylated saponin was hydrolysed with acid (7 % H_2SO_4) and worked up as usual which gave poriferasterol (m.p., m.m.p. and Co-TLC) and 2,3,4,6-tetra-O-methyl-D-glucose (RG 1.00 in *n*-BuOH: EtOH: H_2O, 5:1:4, lit. RG 1.00 *in n-BuOH: EtOH:* H_2O, 5:1:4).

Periodate oxidation of the saponin

A solution of saponin (30 mg) in ethanol (15 ml) was treated with 0.1 M $NaIO_4$ solution. The periodate consumed and formic acid liberated were estimated by standard procedure which corresponded to 2 and 1 mol respectively.

Enzymatic hydrolysis:

The saponin (100 mg) in ethanol (20 ml) was treated with almond enzyme solution. The liberation of D-glucose was detected by paper chromatography (Co-PC).

The authors express their gratitude to Director, CDRI, Lucknow for spectral data and microanalysis. MS is also thankful to UGC, New Delhi for the award of a followship.

31 December 1984

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CLASTIC DYKE AND THE ASSOCIATED ZEOLITE VEINS IN TALCHIR DEPOSITS, SARGUJA DISTRICT, MADHYA PRADESH

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WHILE working on Talchir deposits of Madhaya Pradesh, the authors came across a clastic dyke in Gungatta river, about 15 km south of Ambikapur town. It is exposed on the left bank of the river, 1.5 km downstream from Shayam Gungatta dam site. It cuts across the sandstone and shale beds of basal Talchir Group (figure 1). The trend of the dyke is 312° with a dip about 90°. The maximum width is about 1.5 m and it extends over a distance of 15 m and both the ends are covered by soil.

The sandstone and shale beds on either side of the dyke are undisturbed and do not show any sign of deformation. The dip and strike directions of the beds are 15° NW and 225°, respectively. The dyke consists of sandy material but the grain size is finer than the associated sandstone beds.

The clastic dykes have been reported earlier from India[1,2] and other parts of the world[3–6] but the remarkable feature of this clastic dyke is the occurrence of zeolite veins penetrating throughout the body of the dyke. The major zeolite veins run parallel to the strike of the dyke but small and thin veins cut the dyke at 90°. On both sides, the dyke is bounded by thick zeolite veins. The thickness of the veins generally decreases downward. In the upper part of the dyke, the thickness is about 15 cm; however, in the lower part it

Figure 1. Sand dyke cutting across the sandstone and shale beds of basal Talchir Group, Gungatta River, Sarguja district, M.P.

decreases to few millimeters. The associated sedimentary beds are devoid of any zeolite veins.

The study leads to the conclusion that the fissures for the formation of dykes might have developed by earthquake shocks during deposition. The occurrence of earthquake during the rock deposition is also indicated by the presence of pseudomud cracks on the downstream side of Gungatta river[7] and penecontemporaneous folding in Talchir shales which are exposed in adjacently lying Lotma and Barnai rivers[8]. The occurrence of earthquakes during the Talchir sedimentation indicates that the processes responsible for the faulting in the Gondwana basins of Peninsular India had been initiated during the Talchir period.

The clastic dykes are generally formed in two ways. Firstly, by the intrusion of clastic material from some underlying source layer under abnormal pressure and secondly, by filling of material from above. In the present case, the overlying beds have already been eroded, and the distinguishing features related to the latter process are not found. Therefore, it is difficult to conclude whether the material was forced from some underlying source or simply filled from above.

The unusual occurrence of zeolite veins in the clastic dyke needs special attention. Zeolites generally occur as filling of amygdales, fissures and openings in basic igneous rocks, alteration of aluminium silicates[9].

The downward thinning of zeolite veins, in the clastic dykes indicates that the solutions for zeolite crystallization might have come from an overlying source. The possible source of the solutions may be Deccan Traps which are found at the top of Bunderkot hill (760 m) in the vicinity (about 10 km). Further, towards the south, laterized Deccan Traps occur extensively as cap rock, on the top of the Mainpat ridge (1127 m), almost throughout its length. Therefore, the possible source of zeolite veins may be traced to these flows which in the past, might have extended upto Gungatta river. However, detailed work is needed to get a meaningful conclusion about the mechanism and physico-chemical conditions of their formation.

The authors thank Professor S. H. Rasul and Professor N. Ahmad for their help and encouragement.

27 July 1984; Revised 28 January 1985

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ISOPEROXIDASE IN RELATION TO MICROSPORE DIFFERENTIATION IN *DIOSCOREA COMPOSITA*

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THE shift from vegetative to reproductive phase of life involves a series of changes in the meristem of flowering plants. During recent years, the change over has been found to involve sex specific macromolecules