

Microfacies analysis and depositional environment of carbonate rocks of Birmania basin, western Rajasthan, India.

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The Birmania basin host the repetitive sequences of carbonate, siliciclastic and phosphorite facies. It is considered as isolated remanant of Eocambrian Nagaur basin. It is floored with Malani rhyolite (745 \pm 10 M.Y.). The field and laboratory investigation of carbonate rocks indicate that vertically they represent three gradational sequences and can be grouped into three distinct microfacies; (A) microsparitic dolostone, (B) micritic dolostone and (c) calcrete dolostone. The microfacies A composed of equent grains of dolomicrosparite showing xenotopic and fenestral fabric with lenses of sparite representing subtidal environment. The microfacies B comprises structureless homogenous mass of dolomicrite which grades upward into clotted dolomicrite. It is composed of circular clots and lumps of micrite. The structureless micritic dolostone representing subtidal conditions while clotted micritic dolostone denoting moderately agitated water conditions of high intertidal milieu. The micritic dolostone grades upward into microfacies C, comprises angular to subangular silty quartz coated with micrite and some spherical to ooidal carbonate bodies. The microfacies C is an indicator of subaerial, semiarid climate and supratidal environment. It is envisaged that they represent cyclic sedimentation and shallowing upward sequences formed under subtidal to supratidal setting.