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New occurrences of Permian stromatolites near Purros and Orupembe, Kunene Region, NW Namibia

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Previous studies of Palaeozoic sediments in northwest Namibia have focused on the Permian sediments of the so-called Huab Basin, immediately to the south of the Etendeka Plateau in northwest Namibia. This paper presents the description of new occurrences of Permian stromatolites near Purros and Orupembe, in the Kunene Region.

Near Purros isolated, 50 centimetres (cm) to 2 metre (m) wide and 30 to 50cm high, domal stromatolites were observed within a sequence of thinly to moderately bedded silty sandstone with small scale sigmoidal cross-bedding. Internally the stromatolites display 2 to 10 millimetre thick laminae with undulating to plane parallel surfaces. The sequence is cut by Cretaceous diabase dykes and overlain by recent fluvial deposits along the southwest border of the Khumib Block.

Figure 1: 1m wide domal stromatolite within fine-medium grained silty sandstone

At Orumpembe some 80 kilometres (km) north of Purros, a 160m high vertical section was described. At the base of the section, Permian sediments, possibly equivalent to the Huab Formation (Fm.), contain isolated, 30cm to 1m wide and 30 to 50cm high, domal stromatolites within a sequence of thinly bedded to laminated fine grained sandstones, siltstones and calcareous mudstones. The Permian sediments are overlain by fluvial and aeolian sandstones of the Twyfelfontein Fm., including minor conglomerates. These sediments of the Twyfelfontein Fm. often occur as interflow deposits between vesicular basalt lava flows of the overlying Etendeka Group.

The Permian stromatolites described in this paper occur some 250km north-west of known occurrences of isolated domal stromatolites and extensive stromatolite bioherms within the Huab Formation in the Khorixas region of northwest Namibia [1]. This suggests that the Huab Basin extended further to the north than previously defined [2], or that a separate basin existed in the Orupembe-Purros region, with similar shallow marine sedimentation during the early Permian.

Stromatolites of Permian age have also been described within the Assistência Member of the Irati Fm. in the Paraná basin close to Santa Rosa de Viterbo, São Paulo [3]. Accumulations of reworked Mesosaurus ribs and vertebrae are associated with these domal stromatolites often in layers similar to the bone beds of the Huab Fm. [1,3]. The new occurrences of Permian stromatolites in northwest Namibia, reinforce the correlation between Paleozoic sedimentary sequences of Brazil and Africa.

References:

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