

Publication

A geotraverse through the northern coastal branch of the Damaran orogen west of Sesfontein, Namibia

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The Pan-African Damaran orogen of Namibia is subdivided into an ENE trending inland branch and a NS trending coastal branch. In the northern coastal branch, Damaran metasediments and metavolcanics are exposed together with pre-Damaran basement. The pre-Damaran consists of paragneisses, granitic augengneisses, migmatic gneisses, metagranodiorites and amphibolites. The Damaran Supergroup starts with the Nosib Group conglomerates and meta-arenites, followed by the Swakop Group, which is subdivided into the Ugab Subgroup (siliciclastics, marbles and amphibolites) and the Khomas Subgroup including the Chuos Formation (glaciogenic diamictites and banded iron formations), the Karibib Formation (marbles), and the Kuiseb Formation (siliciclastics and amphibolites). D-1 is the oldest of three deformation phases and developed a bedding-parallel foliation and isoclinal folds. D-2 was the main deformation phase where thrusting (top-to-east) was accompanied by the formation of N-S trending, east-verging isoclinal folds and E-W stretching lineations. Additionally, there is evidence for concurrent NNW-SSE left-lateral displacement, suggesting transpressive kinematics during D-2. D-3 represents a final deformation phase and is the least intense. Pre-Damaran metamorphism attained P-T conditions of the upper amphibolite to granulite fades with widespread formation of migmatites. In contrast, the grade of the Damaran metamorphism (synkinematical with D-2) is much more variable and shows a marked increase from greenschist fades in the east to granulite facies in the west.

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