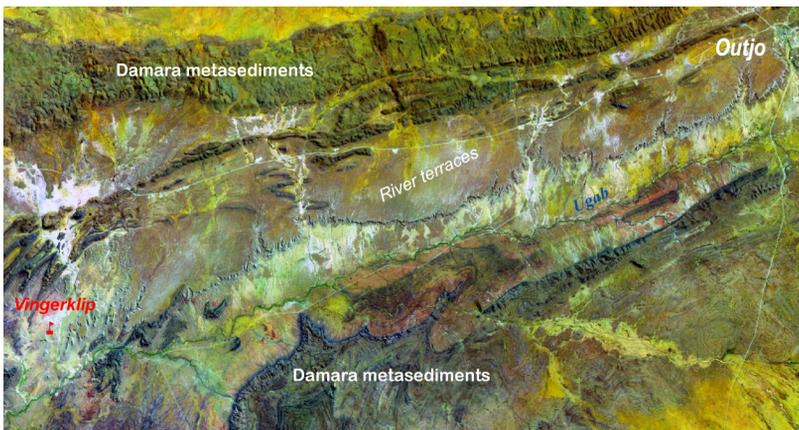


VINGERKLIP & UGAB TERRACES

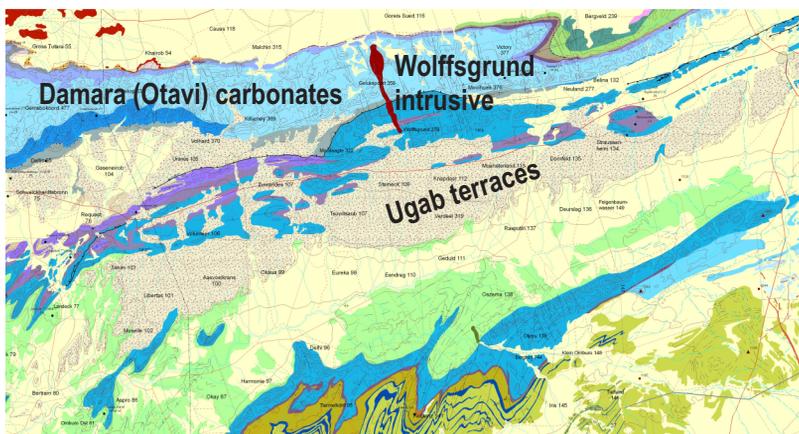


Source: *Roadside Geology of Namibia*

After the collapse of Mukorob in 1988, Vingerklip, which is situated some 80 km southwest of Outjo and 45 km west of Khorixas, has become the probably best-known erosional rock formation in Namibia, ranking high amongst its geological attractions. With its prominent spout resembling a water kettle or coffee pot as much as a finger, it is part of the Tertiary main terrace of the westward-flowing ephemeral Ugab River, whose remnants are dotted about the present-day Ugab Valley. From the elevated vantage point of Vingerklip one has a magnificent view of the eroded terraces - also known as the "Monument Valley of Namibia" - stretching away into the distance.



Satellite image (above) and geological map (below) of the Ugab terraces



Vingerklip is a 30 m-high erosional remnant of the main terrace, which is best preserved on the northern side of the valley. Boulders in the conglomerate are derived from Damara schists, marbles and quartzites (~600 mill. years), as well as from gneisses of the Huab Metamorphic Complex (~ 1.6 mill. years) outcropping in the Ugab catchment area. The intercalation of conglomerate and sandstone layers give an indication of changing fluvial discharge rates and depositional conditions over the last 40 million years.



Vingerklip

From its source in eastern Damaraland, the Ugab River follows a southwesterly to westerly course to the coast, having incised a broad valley into the Early Tertiary land surface. Due to a steep gradient in its upper reaches, it succeeded in cutting down through older terraces during periodical flash floods; between Outjo and Vingerklip three successive terrace levels are exposed.

Standing 160 m above the present-day river, the main terrace rests on an Eocene (56 - 45 million years) surface and consists of more than 100 m of sand and sandy, calccrete-cemented conglomerate, capped by calcareous sandstone. A second, Lower to Middle Pleistocene (5 - 0.2 million years) terrace is located 30 m above the present river; in turn this was succeeded by an Upper Pleistocene wet phase, when increased fluvial discharge caused erosion below the present floodplain. Subsequently deposited sandy alluvium contains Middle Stone Age tools.



Carbonate-cemented Ugab conglomerate

The comparative resistance to erosion, which marks the Ugab terraces and has facilitated their survival to this day, is due to the carbonate matrix of the capping, which derives from the ridges of the Damara-age Otavi dolomite to the north. Accordingly, the less indurated valley fill on the southern side of the Ugab River has succumbed more easily, leaving little to be seen. Distinct cavities at the broad base of Vingerklip, however, prove that erosion is doing its slow but persistent work even on the hardened rock, and that it is only a matter of time before the "Rock Finger" will be no more.