

FROM WEIRDNESS TO THE MODERN WORLD – 538 MILLION YEARS AGO ON OUR PLANET

Namibia has been a key region for understanding Ediacaran palaeontology since early days of the 20th century. Geologist Paul Range first reported strange fossils from here. The first formal name for a complex Ediacaran fossil from Namibia, *Rangaea schneiderhoehni*, an enigmatic, cm-scale frond from the Dabis Formation. *Rangaea* Gürich 1930, predated Sprigg's (1947) description of *Dickinsonia* from the Flinders Range in Australia and Ford's (1958) description of *Charnia* from Charnwood Forest in England. This Namibian fossil was not a simple disc, but a frond covered with features so complex that Gürich assumed *Rangaea* must be Cambrian in age. Nearly 90 years later, *Rangaea* and other core Ediacaran forms have become bellweather taxa for our changing interpretations of the Ediacara biota, a late Neoproterozoic group of large, multicelled organisms. *Rangaea*, originally regarded as a primitive member of an extant phylum, perhaps a primitive ctenophore or cnidarian, was removed from the Animalia, regarded as a core taxon of the kingdom 'Vendobionta' and designated as the type genus of a key Ediacaran division of life, the Rangeomorpha. A clarifying result of more than a decade and a half intensive field work of IGCP Projects 493, 587 and 673, has been discovery of three-dimensional specimens preserved in shallow marine gutter-casts of late Neoproterozoic successions that have allowed reconstruction of *Rangaea* as a six-vented multifoliate frond with an expanded basal bulb which acted as a weight-belt situated on, or perhaps in sediment. And beyond that has been the precision dating as well as sedimentological and geochemical characterization of the changing shallow marine environments and events at the end of a Supereon, a time of major biotic change on Earth, revealed, not only to the research community but for the public in a series of publications, exhibitions and documentaries.

An intriguing question posed by palaeontologists taking part in these UNESCO IGCP projects is what happened to the last of these first complex and large organisms that developed on Earth? Recent discoveries and ongoing work by IGCP673 continue to inform about the environmental conditions faced by the last of the Ediacarans around 538 million years ago. In future, such knowledge will assist hopefully in our understanding of what happened to the Ediacarans and the dynamics of the dramatic biotic change at the beginning of the Cambrian..... and perhaps give some guidance on planning the future of humanity!