

Introduction to the Cape Range Symposium

The Cape Range peninsula forms the western 'hip' of Australia and lies just within the arid tropics (c. 22°S). The peninsula, often referred to as North West Cape, which forms only 0.07% of Western Australia, is dominated by Cape Range, a 330 m high anticline of Miocene limestone running the length of the peninsula. About one third of the peninsula is included in Cape Range National Park which abuts the Ningaloo Marine Park on the west coast.

The purpose of this symposium is to bring together what specialised knowledge is available on the biogeography and related topics of the Cape Range peninsula. It will provide the foundations on which to assess the biogeographic significance of the area so that any debate about land use can proceed with the best available biological information. Hopefully, this symposium will draw attention to areas of particularly high scientific interest, areas known to be or potentially of special sensitivity and, perhaps, will indicate areas where our knowledge is crucially deficient.

In many ways the symposium is premature because few concentrated studies have focused on the peninsula and even those have occurred only recently. However, because of the immediacy of the land use debate, it is preferable that the information that is available be synthesized at this stage and without prejudice in the deliberate context of a meeting on biogeography rather than in a resource and conservation debate as advocated by some. This more wide ranging and probably more contentious debate needs to proceed when there is a better balance between the information available on the geological and the biological resources of the area *vis-à-vis* other areas with similar geological resources.

Recommendations that Cape Range National Park be extended to include most of the physiographic unit, which would indeed make it an unusual National Park, were endorsed by Cabinet in 1975 but this endorsement was rescinded by Cabinet in 1979. This brief history implies that there are competing claims for land use on the Cape Range peninsula. While these claims relate partly to pastoral and tourist interests, the main debate is likely to be related to the essence of the range itself and its structure - high grade limestone, karst, petroleum, scenery, water and wilderness. Overlaying all land use proposals is a Temporary Reserve for Limestone (*TR5980H*) lying mostly within Cape Range National Park and its proposed extensions; this Reserve includes most of the known highly cavernous part of the Cape Range.

The stimulus for this symposium is the rich subterranean fauna that occupies both the terrestrial and aquatic habitats of the Cape Range peninsula. In the fifteen years following 1945 the essence of the aquatic (stygo-) fauna was described (two species each of fish and shrimps), but the rich terrestrial (troglobitic) fauna has been examined only since 1988. Both faunas contain a high proportion of endemic species and genera and many of the taxa show a high degree of adaptation to underground life; both attributes suggest that the peninsula should be considered in a time-frame greater than heretofore.

The troglofauna of this now arid area contains many elements that are markedly disjunct from appropriate habitats and hence from possible ancestral stock. In part it is relictual from more humid times and has elements characteristic of the moist closed forest communities now occurring on the eastern seaboard of Australia. By contrast, many components of the stygofauna are related to taxa only known from other continents, usually a hemisphere away. Together these raise questions as to the uniqueness of the area, whether it has any special

qualities to consider from a biogeographic perspective, and whether it has any peculiar attributes in need of special consideration. As a first step in this process it is necessary to determine whether the surface flora and fauna of this poorly known area are equally as distinct.

The subterranean fauna of Cape Range is remarkable, and in its composition are echoes of local eustatic events, climatic change, and of past connections with other parts of Australia, eastern Gondwana and even Pangaea. Is this reflected in other aspects of the Cape Range biota? How relevant is such an area? Does it rate in importance, for example, with places such as Aldabra Atoll, recognised internationally as important for both its scientific and conservation values?

The range of topics covered in the symposium reflects the state of knowledge of the area - in particular the 'lower plants' and many groups of terrestrial invertebrates are not considered. While this is due to a number of causes it primarily reflects the lack of collections from surface habitats; there has been no biological survey or even a major faunal collection in Cape Range, other than the biospeleological collections. Other taxa are not covered owing to the incomplete state of work in progress on the Cape Range fauna (Amphipoda, Isopoda, Diplura, Archaeognatha, Thysanura, Psocoptera, Orthoptera, some Coleoptera); lack of appropriate taxonomists or systematic base (Annelida, Copepoda, Ostracoda, Collembola, Diplopoda: Polyxenida and Polyzoniida, Diptera: Mycetophilidae) and inadequate stages in collections (Hemiptera: Cixiidae).

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