AN OVERVIEW OF CAVE AREAS AND THE INVERTEBRATE CAVE FAUNA IN TASMANIA

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ABSTRACT

There are 141 recorded cave areas included in the ASF Karst Index for Tasmania. Forty-one (41) of these are non-karst cave areas: principally in quartzite, sandstone, mudstone, metamorphic rocks, granite, dolerite or basalt; the remaining one hundred (100) are karst cave areas in limestone, dolomite or magnesite. Although there are estimates suggesting that there are 4,000 caves in Tasmania, presently (at November 2004), there are 2,800 documented caves: 150 non-karst caves and 2,650 karst caves. In addition there are another 161 documented karst features including poljes, blind valleys, swallets, springs and

The major karst areas are: Junee-Florentine: 655 caves; Mole Creek: 509 caves; Ida Bay: 274 caves; Mount Cripps: 231 caves; and Gunns Plains: 151 caves. Invertebrates have been recorded from about 20% of the known karst and non-karst caves in Tasmania. Approximately 1040 species of invertebrate fauna have been recorded from these caves, based on records collated in a database commenced in 1997 (Clarke, 1997a) and subsequently updated and listed in a student (MSc) database (Clarke, 2005). It includes around 6,800 occurrence records based on collections and observations from 551 caves and another 14 efflux spring or mound spring sites in Tasmania. Just over 21% of the known invertebrates are aquatic species. The greatest species diversity amongst the aquatic invertebrates is found in hydrobiid snails, crangonyctoid amphipods, syncarid shrimps, phreatoicids and aquatic isopods.

As might be expected in cool temperate cave areas, the major terrestrial species are the spiders, harvestmen, mites, pseudoscorpions, beetles, cave crickets, springtails, isopods, millipedes, oligochaete worms and land snails. Many species remain undetermined or undescribed. The karst bio-space (Clarke, 1997b) in Tasmania is complex with a variable development of aquatic and terrestrial habitats. Analysis of the karst bio-space in Tasmania (in November 2004) reveals several areas of high species diversity reflecting in part the intensity of study of those karsts: Ida Bay: 291 spp., Mole Creek: 195 spp., Hastings: 191 spp., Bubs Hill: 190 species, Junee-Florentine: 175 spp., Gunns Plains: 134 spp., Franklin River: 127 spp., Loongana: 114 spp., and Precipitous Bluff: 109 spp.

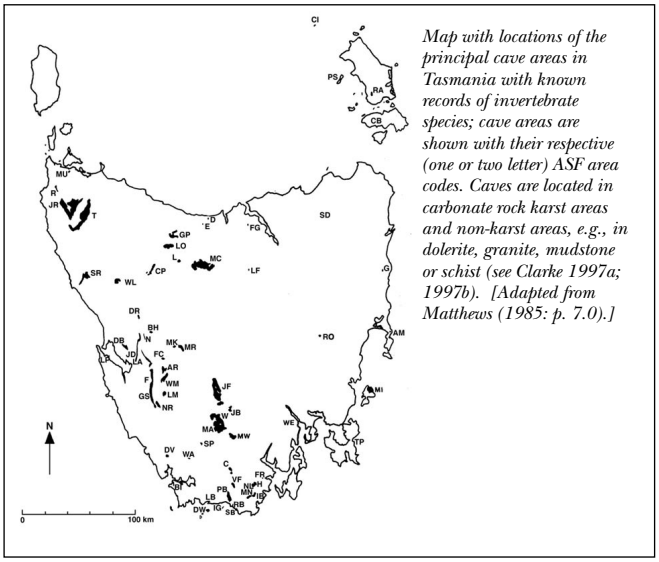
The number of species recorded from different karst areas does not only reflect the varying development of karst bio-space, but to some extent is also dependent on the degree or intensity of study. At present, the greatest numbers of troglobitic (cave obligate) species are recorded from the Ida Bay, Mole Creek, Loongana, Precipitous Bluff, Junee-Florentine and Flowery Gully karst areas (Clarke, 1997a). ■

PHOTO: ARTHUR CLARKE

Fungivorid mycetophiloid gnat on agaric fungus in cave at North Lune, Tasmania. Photo Competition First Prize for a Print in the Scientific category.

PHOTO: ARTHUR CLARKE

Cave adapted Anaspides *(Tasmanian Mountain Shrimp) Photo Competition Second Prize for a Print in the Scientific category.*



Map with locations of the principal cave areas in Tasmania with known records of invertebrate species; cave areas are shown with their respective (one or two letter) ASF area codes. Caves are located in carbonate rock karst areas and non-karst areas, e.g., in dolerite, granite, mudstone or schist (see Clarke 1997a; 1997b). [Adapted from Matthews (1985: p. 7.0).]

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