



## ***Malo kingi*: A new species of Irukandji jellyfish (Cnidaria: Cubozoa: Carybdeida), possibly lethal to humans, from Queensland, Australia**

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### **Abstract**

Irukandji stings may be lethal to humans, and yet, until late 2005, only one of the many suspected Irukandji stingers had been formally named and classified. This paper describes *Malo kingi*, n. sp., which is apparently responsible for a recent fatality. This species differs from all other cubozoans in having halo-like rings of tissue encircling the tentacles, with club-shaped Type 4 microbasic mastigophores inserted end-on around the periphery of the rings. It further differs from its only current congener, *Malo maxima*, in having: a much smaller, more rounded body; different tubule winding patterns in the undischarged nematocysts; spines confined to the distal-most portion of the shaft in the discharged nematocysts; relatively broader pedalia; somewhat less well defined rhopalial horns; and perradial lappets with a greater number of nematocyst warts and nipple-like terminal extensions. Much additional work is needed to better understand the general biology of this and other dangerous species so as to prevent further fatalities, debilitating illnesses, and threats to the tourism industry resulting from the marine stinger problem. Treatment of envenomations, management issues regarding sting prevention, and the related implications for tourism, all rely on being able to consistently and accurately identify public health hazards. The need still exists for an aggressive awareness campaign aimed at residents and visitors regarding education and prevention of Irukandji stings.

**Key words:** Cnidaria, Cubozoa, Carybdeida, Tamoyidae, Irukandji Syndrome, Great Barrier Reef, Queensland, Australia, taxonomy, fatal stinging

### **Introduction**

Irukandji Syndrome comprises a dreadful suite of symptoms that follow envenomation by certain types of jellyfishes throughout tropical and temperate regions of the world's oceans. It was named after the local Aboriginal tribe near Cairns, Australia, where the Syndrome was first recognized (Southcott and Powys 1944; Flecker 1952). The symptoms typically necessitate hospitalization. About 30% of cases in 1999 had some form of heart failure (Fenner and Carney 1999), a percentage typical in other years as well (unpublished data). Approximately 20% of victims suffer life-threatening complications including pulmonary oedema, requiring life support (Herceg 1987; Fenner *et al.* 1988; Martin and Audley 1990; Williamson *et al.* 1996; Fenner 1997; Fenner and Heazlewood 1997; Fenner and Carney 1999; Mulcahy 1999; Little *et al.* 2001; Taylor *et al.* 2002; Little *et al.* 2003; Anonymous 2004; Macrokanis *et al.* 2004). In 2002 the syndrome proved lethal to two tourists (Fenner and Hadok 2002; Huynh *et al.* 2003).

*Carukia barnesi* Southcott, 1967 has routinely been referred to colloquially as “the Irukandji.” This has created considerable confusion, ranging from *C. barnesi* being reported on the basis of sting reports in localities where it apparently does not occur, to identification criteria for *C. barnesi* erroneously being widened to