“MORBAKKA” SYNDROME: FIRST REPORT OF ENVENOMATION BY CUBOZOA (CNIDARIA) IN BRAZIL

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ABSTRACT The first case of envenomation by box-jellyfish is reported in Brazil occurred in the São Sebastiâo Channel, southeastern coast of the country. The symptomatology of the victim is described and compared to the “morbakka” syndrome reported in Australia.

KEYWORDS Envenomation, Brazil, Tamoya, Cubozoa

Envenomation by cubozoans are frequently reported in tropical and subtropical waters, sometimes causing from severe injuries or even the death of the victim (Halstead, 1988). The cubozoan fauna is poorly known in Brazil. The only reports dealing with the group are F. Müller (1859, describing Tamoya haplonema and Chiropsalmus quadrumanus) and Vannucci (1954, 1957, reporting the same two species). In a study on the distribution of cubozoans on the Brazilian coast, we have found three species: T. haplonema, occurring from São Paulo to Santa Catarina State; C. quadrumanus, from Pernambuco to Santa Catarina State; and a third species first recorded in Brazil, Tripedalia cystophora, in Pará State (Salinópolis mangrove, near the mouth of the Amazon River, cnidarian collection of MNRJ 1025; unpublished data).

Even with this wide distribution along the Brazilian coast, and sometimes with an apparently high demographic rate (e.g. for C. quadrumanus in the southern Bahia State, unpublished data), there is no report of envenomation caused by cubozoans in Brazil.

On July 15, 1995, while swimming in shallow water (1.5 m depth) of the Cabelo Gordo de Dentro beach, São Sebastiâo channel, São Paulo State, a 23-year-old healthy male (E.M.M.), weighing c. 80 kg, was stung in his right arm (Figure 1) by a mature specimen of Tamoya haplonema (15 cm high, 7 cm wide, contracted tentacles 20 cm long, posteriorly identified in the laboratory).

The sting was felt as sequenced pin-pricks and burning. The region was immediately washed with vinegar, in an attempt to inactivate the undischarged nematocyst capsules (following Fenner et al., 1985; Fenner, 1991). Ten minutes later, the affected region was painful, becoming swollen and whitish, surrounded by red burn (flare) of the skin. The victim was medicated with 2ml of promethazine hydrochloride (Fenergan) intramuscularly, which provoked a deep sedation. One day later, the burning had stopped and it started itching, and the symptom persisted for the next 7 days. The region of the injury has a permanent scar.

Southcott (1985) and Fenner et al. (1985) described an envenomation called “morbakka” syndrome, referring to the “Moreton Bay Carybdeid” (also known as “hikurage”), from the region of Queensland, Australia. At that time, the offending jellyfish had no confirmation on its identification, but the authors considered the medusa possibly Tamoya sp.. In the Brazilian case, we were able to identify the medusa correctly as Tamoya haplonema. The general symptomatology
of the case is similar to the one described by Fenner et al. (1985), except by the cough, backache and tightness in the throat felt by their patient, a 12-year-old girl.

The nematocysts of the tentacles of another specimen of *T. haplonema* were identified as microbasic mastigophores, the same type found by Fenner et al. (1985) in the skin of the victim.

Concerning the two other Brazilian cubozoans, *T. cystophora* is a small medusa (up to 1 cm in height) with short tentacles, and was never recorded envenoming man. The other species, *C. quadrumanus*, is bigger (around 6.5 cm in height), and it was recorded to provoke death in Texas (United States) (Fenner et al., 1996). One of us was lightly stung by *C. quadrumanus* in Bahia State (Brazil) and had a burning followed by itching, but with no longer effects (unpublished data). Another species of the genus, *C. quadrigatus*, can also cause death, as reported in the Philippines, Malaya, Borneo, Indo-China, Papua New Guinea and Japan (cf. Fenner et al., 1996).

Some of the others box-jellyfishes causing injuries to man are the lethal *Chironex fleckeri* (responsible for over 50 deaths in Australia), *Carukia barnesi* (almost lethal) and *Carybdea rastoni*, known to cause the “Indringa”, “Irakandji” and “Jimble” syndromes, respectively (Fenner et al., 1985; Fenner, 1991). These species has never been recorded in the Atlantic Ocean.

Concluding, accidents with box-jellyfish, such as those with other cnidarians (e.g. the siphonophore *Physalia physalis* (Freitas et al., 1995), hydroids like *Pennaria* and *Macrorhynchia*, the hydromedusa *Olindias sambaquisensis*, the hydrocorals *Millepora* spp., and the sea anemone *Alicia mirabilis*), are probably underestimated in Brazilian waters. General precaution must be followed at least in places where these animals were recorded, such as in São Sebastião region, specially during the winter season, when *T. haplonema* reaches the shallow coastal waters. After an accident, in view of the potential lethal effects of some stings, rapid identification of the offending jellyfish may be critical (Fenner, 1991).

**Figure 1.** Stung arm of the victim of *Tamoya haplonema* from the São Sebastião Channel. (the photo is a courtesy of L.H.S. Guimarães)