First record of asexual reproduction of *Holothuria* (*Mertensiothuria*) *hilla* in a fringing reef at Reunion Island, western Indian Ocean

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Holothuria hilla — a relatively rare species on Reunion Island — has been observed under blocks of rubble on the reefs at Saint Leu and Etang Sale during the day (Conand and Mangion 2002; Conand et al. 2003). This species, formerly from the subgenus *Thymiosycia*, has been changed to *Mertensiothuria* (Samyn and Massin 2003).

Around 10 species of holothurians are known to be naturally fissiparous, and several belong to the genus *Holothuria* (*H. atra*, *H. leucospilota*, *H. edulis* and *H. parvula*). This note reports on the observation of asexual reproduction in *Holothuria hilla* at Reunion. Evidence of natural fissiparity had been previously observed in this species in June 2001, with an anterior specimen regenerating the posterior end (weight 22 g) and a posterior one regenerating with an anterior end (weight 32 g). Only one specimen of the species was observed at this date.

We report here the observations made in January 2008 at Etang-Sale, Reunion Island (21°16′10″S, 55°20′00″E). Despite the sampling effort (on a 100 m-transect on coral debris with coarse sand), only 12 specimens were found, and these were located in the first 30 minutes. The survey revealed only two specimens showing recent fission out of the 12 "normal" specimens found. These two specimens were found together under the same rock. One showed regeneration of the posterior part and the other of the anterior part (Figs 1B and C).

Because this species is usually rare, it is likely that the species has proliferated on this site by asexual reproduction from a few specimens. The size-frequency distribution shows the absence of juveniles and a unimodal shape (Fig. 2). Further genetic studies should help us to identify the possible founder effect (settlement of a new population) and the functioning of this low density population.

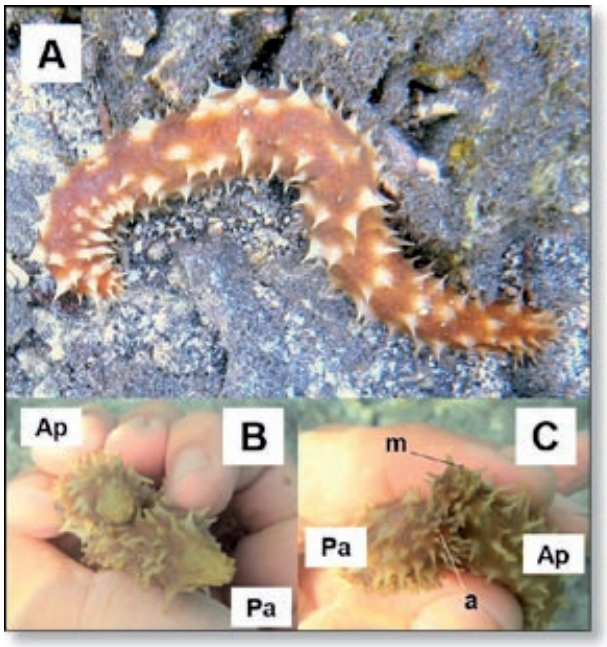

Figure 1

1A. *H. hilla* observed on the fringing reef of Etang-Sale (Reunion Island);
1B. Regenerating parts of the two specimens after fission;
1C. Conserved parts of the two individuals after fission.
(Ap: Anterior individuals displaying regeneration of the posterior part; Pa: Posterior individuals displaying regeneration of the anterior part; m: mouth; a: anus).

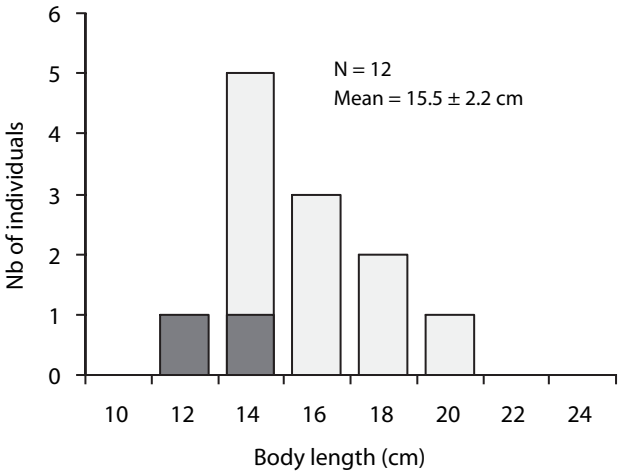

Figure 2. Length-frequency distribution of *H. hilla* on the fringing reef of Etang-Sale (Reunion Island); the dark part of the bars indicates the two regenerating individuals.

References

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