Release of eggs from tentacles in a Caribbean coral

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Fig. 1 **a** *Stephanocoenia intersepta* colony, **b** detail of colony surface releasing (fertilized) eggs through its tentacles (indicated by arrows), **c** close-up of polyp releasing two (fertilized) eggs (indicated by arrow) from a slit in the open tentacle

During the fall coral spawning in Curaçao, Netherlands Antilles, at depths between 10 and 60 m, we observed 18 colonies of *Stephanocoenia intersepta* (Fig. 1a) releasing eggs from their tentacles between 22:30 and 23:30 h (Fig. 1b, c). Spawning polyps held between 1 and 5 eggs in each tentacle, with a slit extending over the length of each tentacle (Fig. 1c), so that the eggs were exposed (for up to 10 min) to the ambient seawater prior to release. Male colonies ($n = 12$) released sperm 0–30 min prior to the observed release of eggs. Individual eggs were then released from the tentacles over the course of approximately 20 min, and eggs were never observed in the mouths of any polyps. Eggs collected immediately on release from female *S. intersepta* colonies show extremely high rates of fertilization (Hagman et al. 1998), suggesting that these colonies release embryos rather than unfertilized eggs.

The release of planulae or embryos through a polyp's tentacles has been described for several Caribbean coral species with internal fertilization ("brooders"): *Eusmilia fastigiata* (de Graaf et al. 1999), *Favia fragum* and *Siderastrea radians* (Duerden 1902), but to the best of our knowledge, this is the first time such behavior has been observed for a broadcasting scleractinian species.

The strategy described here could increase fertilization success by using "open" tentacles rather than a polyp's mouth to maximize the number of eggs that can be fertilized simultaneously. High fertilization rates upon release (Hagman et al. 1998) suggest that females only release their eggs once fertilization has occurred. Intratentacular fertilization in the synchronous release of fertilized eggs by a single coral represents a previously undescribed reproductive strategy for Caribbean scleractinian corals.

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