Synchronous spawning of *Acropora* in the Red Sea

Fig. 1 a Setting of gamete bundles in *Acropora gemmifera*, b *Chaetodon austriacus* feeding on egg-sperm bundles released from *Acropora lamarcki*

Multi-specific synchronous spawning is a reproductive strategy used by scleractinian corals that has now been described from coral reefs in 23 locations globally (Baird et al. 2009). While high multi-specific synchrony in the reproductive condition of *Acropora* colonies has been documented in the Red Sea in April and/or May (Hanafy et al. 2010), multi-specific synchronous spawning has not been directly observed. In April 2011, mature oocytes were found in a high proportion of colonies in numerous species of *Acropora* on reefs near Thuwal, Saudi Arabia (22°18'19.26"N, 38°57'56.66"E). On the night of April 16 2011, two nights before the full moon, egg-sperm bundles were first observed in *Acropora* polyps at 20:30 h (Fig. 1a). Between 22:30 and 23:45 h, 43 colonies from 10 out of 13 surveyed *Acropora* species released egg/sperm bundles (Fig. 1b), including three species that had not been observed to spawn previously (*A. plantaginea*, *A. parapharaonis*, and *A. lamarcki*). This is the first documented multi-specific synchronous spawning event in the Red Sea, demonstrating that the asynchronous spawning pattern at Eilat in the Gulf of Aqaba (Shlesinger and Loya 1985) is not representative of the Red Sea, and providing further support for the prediction that these events are characteristic of all speciose coral assemblages (Guest et al. 2005).

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References

- Baird AH, Guest JR, Willis BL (2009) Systematic and biogeographical patterns in the reproductive biology of scleractinian corals. *Ann Rev Ecol Evol Sys* 40:551–571
- Guest JR, Baird AH, Goh BPL, Chou LM (2005) Seasonal reproduction in equatorial reef corals. *Invertebr Reprod Dev* 48:207–218
- Hanafy MH, Aamer MA, Habib AB, Baird AH (2010) Synchronous reproduction of corals in the Red Sea. *Coral Reefs* 29:119–124
- Shlesinger Y, Loya Y (1985) Coral community reproductive patterns: Red Sea versus the Great Barrier Reef. *Science* 228:1333–1335

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