The late-stage larvae of Caribbean gobies, eleotrids, and microdesmids: identification guide and patterns of size and age at settlement.

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The late-stage larvae of most of the shallow-water genera of Caribbean gobioids are identified from collections in Panama. Most species occur in nearshore waters only at their specific settlement sizes and many specimens have begun transition in body form and markings. The size and age at settlement vary greatly, encompassing much of the range exhibited by all reef fishes. Size at settlement for goby species ranges from around 5 mm SL in *Bathygobius curacao* to almost 30 mm SL for *Sicydium (antillarum)*, with most species settling around 6-10 mm SL. Pelagic larval durations for different gobioid species range from about two weeks to many months. I found notable variation in melanophore patterns within larval types as well as a remarkable range of morphologies and markings in larvae undergoing transition, making identifications from simple keys and literature difficult. The number of photographs required to describe accurately this variation necessitates a web-based guide I have prepared at www.coralreeffish.com. In general, transition from larval melanophore patterns to juvenile markings begins in a subset of individuals while larvae are still pelagic and continues into the first few days after settlement, thus providing an invaluable missing link for larval identifications. Morphological changes in transitional larvae include marked changes in eye shape, head morphology, and the acquisition of complex patterns of head neuromasts. Most larvae were identified to species by meristics or transitional missing links, however for several genera with numerous similar species (*Lythrypnus spp., Sicydium spp.,* and the cleaner gobies *Elacatinus spp.*) DNA sequence analysis studies are underway or planned.