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The Scythe Butterflyfish, *Prognathodes falcifer* (Pisces: Chaetodontidae), Observed as a Facultative Cleaner

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Cleaning behavior in fishes is a well-documented phenomenon and involves a number of teleostean families (Limbaugh 1961; Deloach 1999). This behavior is expressed especially well in tropical gobies (Gobiidae), wrasses (Labridae), and butterflyfishes (Chaetodontidae).

While surveying fish and invertebrate populations using SCUBA at Islas San Benito, Baja California, Mexico (ca. lat. 28°18.7′N, long. 115°32.6′W) we observed cleaning behavior by the scythe butterflyfish, *Prognathodes falcifer* (Hubbs & Rechnitzer, 1958). This, to our knowledge, is the first report of cleaning behavior by this species; the nature of its cleaning also appears to be unique within the Chaetodontidae.

On 9 August 2001 at ca. 0820, at San Benito del Este, the easternmost of the three San Benito islands, we observed a large kelp bass, *Paralabrax clathratus,* and several scythe butterflyfish, at a depth of ca. 17 m in a relatively small horizontal cave. The dimensions of the cave (or large horizontal crevice) were ca. 2 m in length, 1 m deep, and 0.75 m in height.

The kelp bass was inside the cave and oriented horizontally and essentially parallel to the cave opening. Initially, we were impressed by its unusually large size, ca 600 mm total length. Several scythe butterflyfish were also noticed in the cave but at each end and not in close association with the kelp bass. The kelp bass then appeared to become rigid in posture and lower (or drop) its pectoral fins. Almost immediately, three butterflyfish (all ca. 150 mm total length) swam to the sides of the kelp bass, took diagonal positions, and appeared to start cleaning the larger serranid; we assumed they were picking external parasites (Fig. 1). One butterflyfish took a position to the anterioventral portion of the host kelp bass while the other two butterflyfish took posteriorventral positions on the body, one fish on each side. We observed this behavior for ca. 30 seconds.

The prolonged snout and jaw structure of the scythe butterflyfish appears to be preadapted for cleaning (Ferry-Graham et al. 2001). The barberfish, *Johnrandallia nigrirostris,* another eastern Pacific chaetodontid, is a well-documented cleaner (Hobson 1965, 1969; Burgess 1978; Allen 1979; Thomson et al. 2000).

The majority of butterflyfishes exhibiting cleaning behavior appear to clean their host while it is positioned up in the water column, perhaps making themselves more visible to the cleaners (Burgess 1978). In the example we observed, the host took a position in a somewhat secluded situation that harbored several

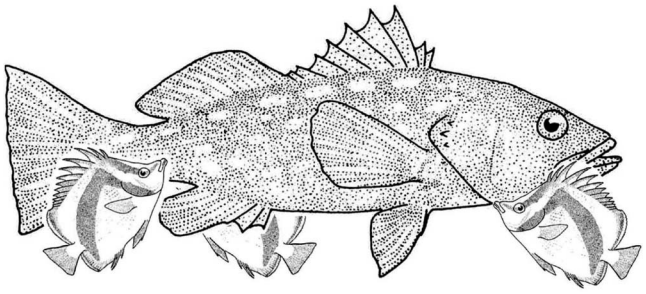

Fig. 1. Depiction of scythe butterflyfish cleaning a kelp bass at Islas San Benito on 9 August 2001.

scythe butterflyfish, one of the more secretive species of chaetodontids. In the case of *Prognathodes falcifer,* it is likely that cleaning is a non-obligate and infrequent mode of behavior. In over one hundred dives by us at the San Benito islands, covering an 18-year period, this is the first instance of cleaning by the scythe butterflyfish that we have witnessed. John McCosker of the California Academy of Sciences (pers. comm., April 2002), in many years of diving at the Galapagos Islands has never noted this species to be involved in cleaning. Perhaps secretive or clandestine cleaning is a more common mode of behavior than realized in chaetodontids. Additional observations of cleaning behavior by other cave- and crevice-dwelling species may be noted as a result in the future.

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