



Scientific Note

Partial xanthism in a specimen of Acapulco major, *Stegastes acapulcoensis* (Teleostei: Pomacentridae), from the Tropical Eastern Pacific

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Abstract. This paper reports the first record of partial xanthism in a specimen of the Acapulco major, *Stegastes acapulcoensis*, collected in shallow rocky reefs of Acapulco Bay, Mexico. This is the first partial xanthism case known for pomacentrids. Morphometric and meristic data are presented.

Key words: xanthism, abnormal pigmentation, Pomacentridae

Resumen. Xantismo parcial en un espécimen de la damisela Acapulco, *Stegastes acapulcoensis* (Teleostei: Pomacentridae) del Pacífico Oriental Tropical. Se presenta el primer registro de xantismo parcial en un ejemplar de la damisela Acapulco, *Stegastes acapulcoensis*, colectado en los arrecifes rocosos de la bahía de Acapulco, México. Este registro representa el primer caso de xantismo en pomacéntridos. Se presentan datos morfométricos y merísticos.

Palabras clave: xantismo, pigmentación anormal, Pomacentridae

Damselfishes (Pomacentridae) are one of the most diverse and abundant fish families in tropical and subtropical seas of the world (Allen 1991). Globally, there are 389 recognized species grouped among 28 genera (Nelson 2006, Eschmeyer & Fong, 2012). In the Tropical Eastern Pacific (TEP), the genus with the highest species richness is *Stegastes*, which is represented by eight species (Allen & Woods 1980): *S. acapulcoensis*, *S. arcifrons*, *S. baldwini*, *S. beebei*, *S. flavilatus*, *S. leucorus*, *S. rectifraenum*, and *S. redemptus*.

The Acapulco major, *Stegastes acapulcoensis* (Fowler 1944), is the most widely distributed species in TEP with a distribution that spans from the southern Gulf of California to the Lobos de Afuera island, Peru (Chirichigno & Vélez 1998). The Acapulco major is an omnivorous territorial species, abundant in shallow rocky reefs of Acapulco Bay, Mexico (Palacios-Salgado 2005). The normal pigmentation of adults is brown, slightly

lighter over the anterior half of the body (Fig. 1a). Most scales have blackish margins, the upper pectoral rays are white and are useful diagnostic characters; normal-colored specimens also have a prominent white band across the base of pectoral fin rays on the outer surface (Robertson & Allen 2008).

On 11 January 2008, during rocky reef fish evaluation in Acapulco Bay (San Lorenzo Islet: 16°51'N, 99°53'W), a partially xanthic specimen of the Acapulco major was observed then collected using dip nets at 2 m depth. The abnormal specimen was deposited in the Fish Collection of the Unidad Académica de Ecología Marina, in Acapulco, under the catalog number UAEM-CI-416.

The collected specimen was an 80 g mature male that measured 149mm total length (Table I). The anterior half of the body and the posteriormost part of all fins were yellow, with similar but lighter coloration on the head. The anal fin base and caudal peduncle were brown (Fig. 1b).



Figure 1. External appearance of Acapulco major, *Stegastes acapulcoensis*. (a) Typical adult coloration, (b) a specimen exhibiting partial xanthism (UAEM-CI-416).

Xanthism is a genetic pigmentary anomaly (Dunham & Childers 1980), characterized by a partial or predominant yellow skin or integument color that affects small parts of populations of some species (Smith 1971, Béarez *et al.* 2006). These type of anomalies are relatively common in freshwater species such as the Cyprinodontiformes (Turner & Liu 1977); in marine fishes it has been recorded for several species, especially in groupers of the genus *Epinephelus* (Moe 1963, Smith & Bullock 1979, Nemtzov *et al.* 1993).

Xanthic pigmentation is an uncommon variant in coastal fish of the TEP. Among nearly 1300 species in the region, only 8 recorded xanthic specimens have been documented: *Arothron meleagris* (Tetraodontidae), *Rhinoptera steindachneri* (Myliobatidae), *Aulostomus chinensis* (Aulostomidae), *Kyphosus lutescens* (Kyphosidae), *Anisotremus davidsonii* (Haemulidae), *Bodianus eclancheri* (Labridae), *Mycteroperca olfax*, and *M. rosacea* (Serranidae), (Hulquist 1967, Béarez *et al.* 2006, Robertson & Allen 2008). Worldwide, no recorded xanthic specimens of Pomacentridae have been previously reported (Dawson 1964, 1966, 1971, Dawson & Heal 1976) and the only report of an abnormal pigmentation in this family is that of semi-albino specimens of *Chromis multilineata* from Saint Paul's Rocks, tropical Atlantic (Feitoza *et al.* 2003). The present report provides the first documented case of partial xanthism in a damselfish.

Table I. Morphometric measurements (in mm) and meristic counts of a xanthic specimen of Acapulco major, *Stegastes acapulcoensis*, caught in Acapulco Bay, Mexico (UAEM-CI 416)

Characteristics	Specimen
Meristic	
Dorsal fin	XII, 15
Anal fin	II, 13
Pectoral fins	21
Scales in lateral line bearing tuber	20
Gill rakers on lower limb of first branchial arch	12
Morphometric	
Total length	149
Standard length	127
Pectoral fin length	31
Pelvic fin length	32
Maximum body height	61
Caudal peduncle height	17
Head length	36
Interorbital distance	15
Weight (g)	80

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