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Are melanic coney *Cephalopholis fulva* getting common?

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Here we report the second and third known specimens of Cephalopholis fulva *with partial melanic coloration, photographed at Fernando de Noronha Archipelago and Camamu Bay, south-western Atlantic. While the species exhibits a wide range of colorations, the melanic pattern is an aberration only recently reported. Since* C. fulva *is common within its area of distribution and is of importance to fisheries, increasing records of melanism can either result from higher frequency than previously thought or, alternatively, that this condition is becoming more common.*

Keywords: colour abnormality, melanism, Brazil

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Albeit coney *Cephalopholis fulva* (Linnaeus, 1758) presents a range of colour variations (the red phase, the uniformly brown or bicoloured phase and the xanthic phase), only recently abnormal pigmentation has been reported in this species from a single individual displaying melanism on the posterior half of the body (Simon *et al.*, 2009). To this anomalous specimen captured in 2006 by angling on the inner continental shelf of south-eastern Brazil are now added two underwater records of possible melanic individuals at locations 800 km and 2000 km north–north-east of the first. One 23 cm specimen was photographed at Fernando de Noronha Archipelago (03°50′25.3″S 32°24′40.7″W) at a depth of 4 m in September 2008 (Figure 1A) and another 15 cm specimen was photographed at Camamu Bay (13°55′16.4″S 38°56′07.7″W) at a depth of 12 m in April 2007 (CLS Sampaio, personal communication; Figure 1B). The melanic portion of both individuals was restricted to the head (Figure 1 A, B). General morphology, body condition and swimming mode were normal. Other coneys observed in the same sites had normal coloration (Figure 2).

The coney is a species abundant in the tropical and subtropical western Atlantic and it has been heavily exploited along the Brazilian coast in the past years (Klippel *et al.*, 2005). Fishing has been held responsible for reduction in abundance, modification in the bathymetric distribution and alterations in the social structure of some Brazilian populations of coney (Coelho, 2001) but what causes melanism in this species is unknown. This abnormality appears to be either more common than previously thought or, alternatively, is becoming more common.

However, because the two anomalous individuals share an extremely similar colour pattern, a third hypothesis is the existence of an undescribed colour phase distinct from (or intermediate between) the uniformly dark brown phase and the bicoloured phase. In fact, the transition between these two colour phases is known to occur due to excitement or normal diel changes (Nemtzov *et al.*, 1993) but has never been recorded.

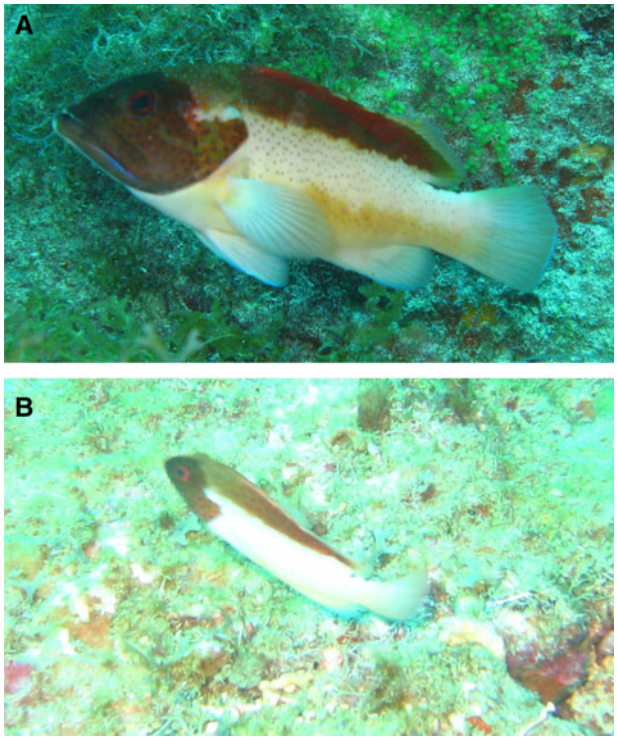


Fig. 1. Melanic *Cephalopholis fulva* at Fernando de Noronha Archipelago (A) and at Camamu Bay (B), Brazil. Photographs by J.L. Gasparini (A) and C.L.S. Sampaio (B).

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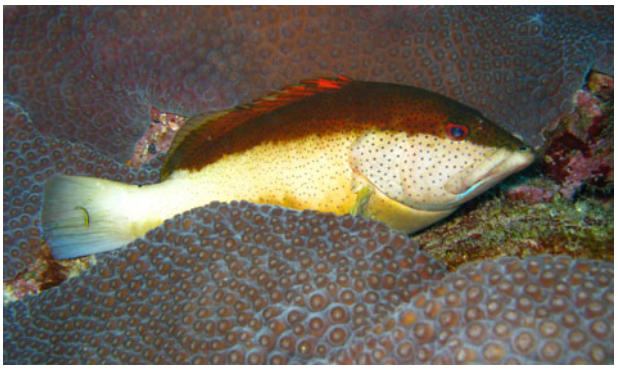


Fig. 2. A normally pigmented *Cephalopholis fulva* in the bicoloured phase photographed at Fernando de Noronha Archipelago. Photograph by J.L. Gasparini.

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REFERENCES

Coelho F.N. (2001) *Distribuição, abundância e biologia reprodutiva da garoupinha*, Cephalopholis fulva *(Linnaeus, 1758) (Perciformes, Serranidae, Epinephelinae), na costa central do Brasil*. MSc thesis. Universidade Federal Fluminense, Niterói, Brazil.

Klippel S., Martins A.S., Olavo G., Costa P.A.S. and Peres M.B. (2005) Estimativas de desembarque da pesca de linha na costa central do Brasil (estados do Espírito Santo e Bahia) para um ano padrão (1997–2000). In Costa P.A.S., Martins A.S. and Olavo G. (eds) *Pesca e potenciais de exploração de recursos vivos na região central da Zona Econômica Exclusiva brasileira*. Rio de Janeiro: Museu Nacional, pp. 71–82.

Nemtzov S.C., Kajiura S.M. and Lompart C.A. (1993) Diel color phase changes in the coney, *Epinephelus fulvus* (Teleostei, Serranidae). *Copeia* 1993, 883–885.

and

Simon T., Joyeux J.C. and Macieira R.M. (2009) First record of partial melanism in the coney *Cephalopholis fulva* (Perciformes: Epinephelidae). *Brazilian Journal of Oceanography* 57, 145–147.

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