Naturalista sicil., S. IV, XXXIX (2), 2015, pp. 97-103

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LIPOPHRYS HEUVELMANSI CHAROUSSET, 1986 (*Pisces Blenniidae*): HISTORY AND IDENTITY OF A FISH

SUMMARY

In 1986, a new species of the genus *Lipophrys*, *L. heuvelmansi*, was described by the ichthyologist François Charousset. On the basis of two sampled specimens from the Adriatic Sea (Croatia), the author made a detailed description of the new species. From the author's description, we noticed a striking resemblance between this species and *Microlipophrys canevae* (Vinciguerra, 1880). In order to eliminate any doubt about the identity of this fish, we analyzed the paratype preserved at the Zoological Museum of Lausanne (Switzerland) and compared it with a male specimen of *Microlipophrys canevae* sampled in the Tyrrhenian Sea (Italy). From this comparison, we can establish that *Lipophrys heuvelmansi* Charousset, 1986 should be considered junior synonym of *Microlipophrys canevae* (Vinciguerra, 1880).

Key words: Blenniidae, combtooth blennies, *Microlipophrys canevae*, junior synonym.

RIASSUNTO

Lipophrys heuvelmansi: storia e identità di un pesce. Nel 1986, una nuova specie appartenente al genere *Lipophrys*, *L. heuvelmansi*, fu descritta dall'ittiologo François Charousset, sulla base di due esemplari raccolti in Mar Adriatico (Croazia). Dalla descrizione dell'autore, abbiamo notato una notevole somiglianza tra questa specie e la Bavosa gote gialle *Microlipophrys canevae* (Vinciguerra, 1880). Allo scopo di eliminare ogni dubbio inerente l'identità di questo pesce, abbiamo analizzato il paratipo conservato al Museo di Losanna (Svizzera) e lo abbiamo confrontato con un esemplare maschio di *Microlipophrys canevae* campionato nel Mar Tirreno (Italia). Da questo confronto è stato possibile stabilire che *Lipophrys heuvelmansi* Charousset, 1986 è sinonimo junior di *Microlipophrys canevae* (Vinciguerra, 1880).

Parole chiave: Blenniidae, blennidi, *Microlipophrys canevae*, sinonimo junior.

INTRODUCTION

In Italy, 20 species in all of combtooth blennies are reported (RELINI & LANTERI, 2010). They belong to the following 9 genera: *Aidablennius* (1 species), *Blennius* (1 species), *Coryphoblennius* (1 species), *Hypleurochilus* (1 species), *Lipophrys* (1 species), *Microlipophrys* (4 species), *Parablennius* (7 species), *Salaria* (3 species) and *Scartella* (1 species). Most species are widespread in all Italian seas and prefer inhabit within the first meter of depth and some of them prefer inhabit in the intertidal (TIRALONGO, 2015). Only *Salaria fluviatilis* (Asso, 1801) inhabit fresh waters (lakes, streams and rivers). CHAROUSSET (1986), on the basis of two sampled specimens from the Adriatic Sea (Croatia), described a new species, *Lipophrys heuvelmansi*, dedicated to Bernard Heuvelmans, a famous zoologist "father" of cryptozoology (BALROY, 2007). They were caught in the Zelena Laguna (Istria) and had a total length of 6.9 cm (holotype) and 6.4 cm (paratype). In 2005, on the basis of molecular data, the genus *Microlipophrys* was described (ALMADA *et al.,* 2005). Currently it includes 7 species, 4 of which are present in the Mediterranean and Italian seas: *M. adriaticus* (Steindachner et Kolombatovic, 1883), *M. canevae* (Vinciguerra, 1880), *M. dalmatinus* (Steindachner et Kolombatovic, 1883) and *M. nigriceps* (Vinciguerra, 1883). From the previously 5 Italian species belonging to the genus *Lipophrys*, actually, only *L. trigloides* (Valenciennes, 1836) remained in the same genus, while the previously mentioned 4 species were transferred from the genus *Lipophrys* to the genus *Microlipophrys*. In the present paper, we clarify the history and the identity of *L. heuvelmansi*, that for all this time remained a mystery.

MATERIALS AND METHODS

Morphological analysis was conducted on the paratype of *Lipophrys heuvelmansi* (cod.#MZL21212) preserved in alcohol in the Museum of Lausanne (Musée Cantonal de Zoologie). Reading the paper of CHAROUSSET (1986), where the species was carefully depicted (see Fig. 1), we found much similarity with a male specimen of *Microlipophrys canevae*, and consequently we compared the paratype of *L. heuvelmansi* with a male specimen of *M. canevae*, sampled in the Tyrrhenian Sea on 18th June 2015 and preserved in formalin (#EFMM180615, Zoological Collection of Ente Fauna Marina Mediterranea).

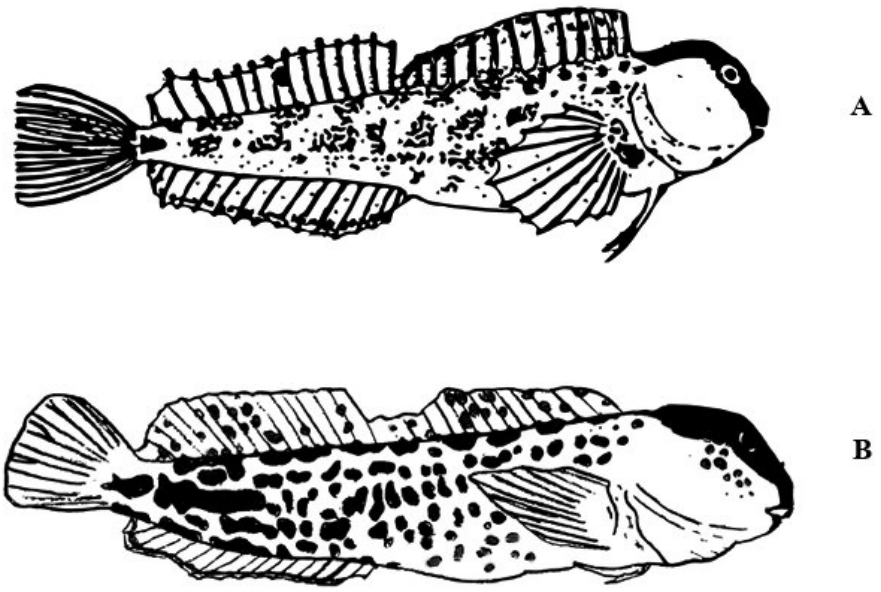

Fig. 1 — Lipophrys heuvelmansi/Microlipophrys canevae drawings comparison. A: *L. heuvelmansi* after the original drawing of CHAROUSSET (1986). B: *M. canevae* drawing of the specimen preserved in the Zoological Collection of Ente Fauna Marina Mediterranea

RESULTS AND DISCUSSION

After nearly 30 years the paratype of *L. heuvelmansi* (Fig. 2b) appears very dehydrated and with a very rigid and inflexible body. The background color of the body is quite evenly orange. Nevertheless, all fins were well stretched and the generic body pattern clearly distinguishable (Fig. 2a). This enabled us to easily verify and compare the characteristics of the fish with those of *Microlipophrys canevae*. Meristic characters reported by CHAROUSSET (1986) were: D = XIII + 14; A = II + 15; P = 12, V = I + 2, C = 16. Reviewing them, we found some differences: dorsal soft rays are not in number of 14 but 15, as in *M. canevae*. Furthermore, also pelvic fin rays meristic formula is I + 3 and not I + 2 and anal fin formula is II + 16 and not II + 15. In all cases, although more rarely, the dorsal fin of *M. canevae* may have 14 soft rays and also 15 anal soft rays, while, pelvic rays have been always reported as I + 3 and never as I + 2 (WHITEHEAD *et al.*, 1986; ALMADA *et al.,* 1993; TIRALONGO, 2015). Meristic features of the dorsal, anal, pectoral and pelvic fins of our specimen of *M. canevae* (Fig. 2c) were: D = XIII + 15; A = II + 16; P = 12; V

Fig. 2 — *Lipophrys heuvelmansi/Microlipophrys canevae* picture comparison. A: paratype of *Lipophrys heuvelmansi* (cod.#MZL21212); B: paratype in the sample container; C: Male specimen of *Microlipophrys canevae* (#EFMM180615)

= I + 3, exactly as in the Blenny of Heuvelmans. A marked notch was present between the anterior (spiny rays) and the posterior part (soft rays) of the dorsal fin, at about half of its length. It was not possible to count the pores in the head because, after 30 years of preservation in alcohol, they were closed and not clearly visible. Anterior nostrils showed the presence of a very short and simple cirri. Concerning the color of the fish, it was also accurately described by CHAROUSSET (1986). We report the main points of his description: background color mainly brownish; dark bars on the upper side of the body; lower side of the body of beige color; a longitudinal black margin in the anal fin. Furthermore, the presence of a black spot between the 7th and the 8th soft ray of the dorsal fin is reported for the paratype (this spot is instead between the 8th and the 9th soft ray of the dorsal fin, not as reported by the author). The head shows the typical color pattern of the mature male during breeding season (colors are attenuated because the fish was preserved in alcohol for a long period of time) and were supposed to look like this in the fresh specimen: cheeks and the ventral part are bright yellow while the remaining part of the head (snout and dorsal area) are black. Furthermore, in both compared specimens it was clearly visible another important secondary sexual character: the presence of club-like glands on the tip of the soft rays of the dorsal fin (WHITEHEAD *et al.*, 1986). All chromatics and morphological characteristics of the 2 compared specimens of *L. heuvelmansi* and *M. canevae* were identi-

Comparative analysis of the main morphological and meristic characters of the paratype of Lipophrys heuvelmansi *(cod.#MZL21212) and a male specimen of* Microlipophrys canevae *(#EFMM180615)*

	Lipophrys heuvelmansi	***Lipophrys heuvelmansi***	***Microlipophrys canevae***
Authors	CHAROUSSET(1986)	(present paper)	(present paper)
specimen	#MZL21212	#MZL21212	#EFMM180615
total length	6.4 cm	6.4 cm	5.8 cm
dorsal	III + 14	III + 15	III + 15
anal	II + 15	II + 16	II + 16
pectoral	12	12	12
pelvic	I + 2	I + 3	I + 3
dorsal fin shape	marked notch at about half of its length	marked notch at about half of its length	marked notch at about half of its length
cirri on the anterior nostrils	simple and very short	simple and very short	simple and very short

cal (with the exception of the black spot in the dorsal fin present in the Blenny of Heuvelmans). A scheme of all major morphological characteristics examined in our specimen of *M. canevae* and in the paratype of *L. heuvelmansi* are summarized in the Table 1.

During the breeding period the mature males of *M. canevae*, as the others of the genus *Microlipophrys*, take a typical color with a yellow and black head ("reproductive mask"). Indeed, the specimens of *L. heuvelmansi* were sampled in June, in the reproductive period (April-August) in which males show this typical chromatic feature. In his dichotomous key, CHAROUSSET (1986) reported as first character to identify his species the presence of a "bright yellow head with the exception of a black stripe that extends from the level of the lower edge of the jaw to the first ray of the dorsal fin" (Fig. 1a). This character is also present in all the other Mediterranean mature male specimens of the genus *Microlipophrys*. In addition, in the sampling area where *L. heuvelmansi* specimens were captured, among several species of blennies, CHAROUSSET (1986) reported the presence of 2 specimens of *M. canevae* (sub *Lipophrys canevae*). Probably they were females and did not show the yellow and black "reproductive mask" typical of the mature males of the species. The presence of 13 spiny rays in the dorsal fin is typical of *M. canevae*, while the other Mediterranean species of the genus (*M. adriaticus*, *M. dalmatinus* and *M. nigriceps*) show typically only 12 spiny rays. Concerning the soft part of the dorsal fin, this commonly have 15 soft rays (although more rarely they can be 14); however, in the case of *L. heuvelmansi* the presence of 14 rays was a mistake of the author because the specimen has 15 rays, as *M.*

canevae. As reported above, in the paratype, CHAROUSSET (1986) reported the presence of a black spot between the 7th and the 8th soft ray of the dorsal (Fig. 1a). We can confirm this particularity (absent in the holotype) but the spot is placed between the 8th and the 9th soft ray (Fig. 2a). As the paratype has a break at the level of the 7th soft ray (tip is lacking) of the dorsal fin, we believe that probably this ray missed the attention of the author. This would justify the underestimation in the dorsal soft rays count as well as the incorrect description about the position of the black spot. However, also the meristic characters of the anal and of the pelvic fins were not correctly reported. Despite his experience with blennies, Charousset fell into a misunderstanding. The causes of this mistake probably lie in the poor and slow circulation of information among ichthyologists in the '80 of the past century. Indeed, CHAROUSSET (1986), in all probability, was not aware of the paper of ZANDER (1975) (in his paper Charousset cited only two papers of Zander, published in 1969 and 1972), where he described the male secondary sex characters of Blennioid fish, that could have been of fundamental importance for the author. In conclusion, all general and specific morphological and chromatic features here reported for the paratype of *L. heuvelmansi* clearly refer to a mature male specimen of *M. canevae* and consequently *L. heuvelmansi* must be considered synonymous of *M. canevae*. CHAROUSSET (1986) probably did not differentiate males from females of blenny species, thus he considered male specimens as *L. heuvelmansi* and female specimens (and probably immature males) as *M. canevae* (sub *L. canevae*). On the basis of these results, we can establish the following synonymy: *Lipophrys heuvelmansi* Charousset, 1986 = *Microlipophrys canevae* (Vinciguerra, 1880).

Acknowledgements — We are grateful to Dr. Olivier Glaizot of the Musée Cantonal de Zoologie in Lausanne for his kind acceptance at the museum and to Dr. François Charousset for his kind collaboration in providing us additive information about his sample and the permission to utilize his drawing.

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