

First data on the genital anatomy of the genus *Jeanneretia* (Helicoidea: Cepolidae), endemic of the western region of Cuba



Maike Hernández Quinta¹ & Thierry Backeljau^{2,3}

¹Institute of Ecology and Systematics, Carretera Varona Km 3 1/5, Capdevila, Havana, Cuba

Email: maike@ecologia.cu

²Royal Belgian Institute of Natural Sciences, Vautierstraat 29, B-1000 Brussels, Belgium

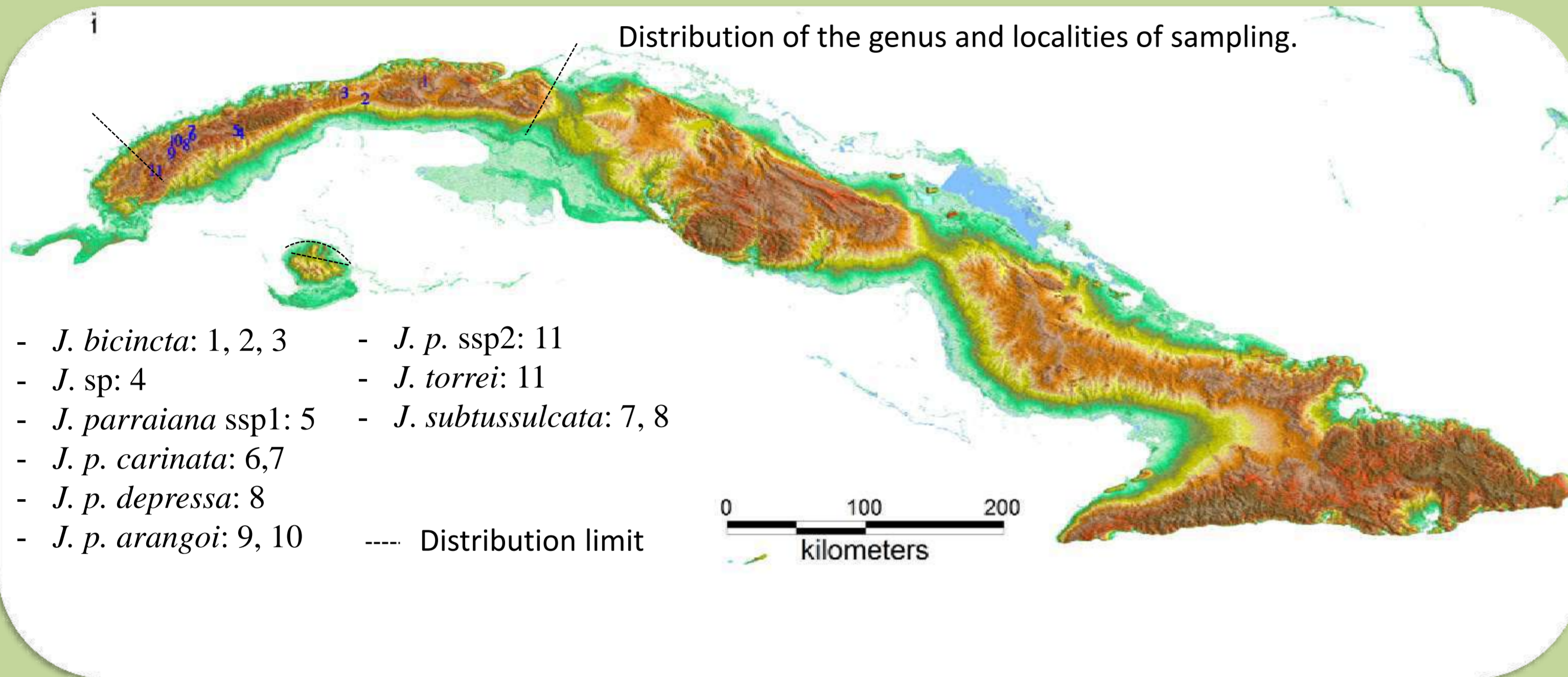
Email: Thierry.Backeljau@naturalsciences.be

³Evolutionary Ecology Group, University of Antwerp, Groenenborgerlaan 171, B-2020 Antwerp, Belgium



Introduction

The genus *Jeanneretia* Pfeiffer, 1877 (Stylommatophora, Helicoidea: Cepolidae) is an endemic taxon in western Cuba (Province of Matanzas to the Province of Pinar del Rio, and on the Isle of Pines). It comprises two subgenera, viz. *Jeanneretia* s.s. (4 species) without and *Guladentia* (5 species) with a gular fold (fig. 9c). However, all *Jeanneretia* species were described on conchological features only (1), so that the taxonomy of this genus needs to be consolidated. As such, we provide here the very first anatomical data of several *Jeanneretia* species, representing the two subgenera.

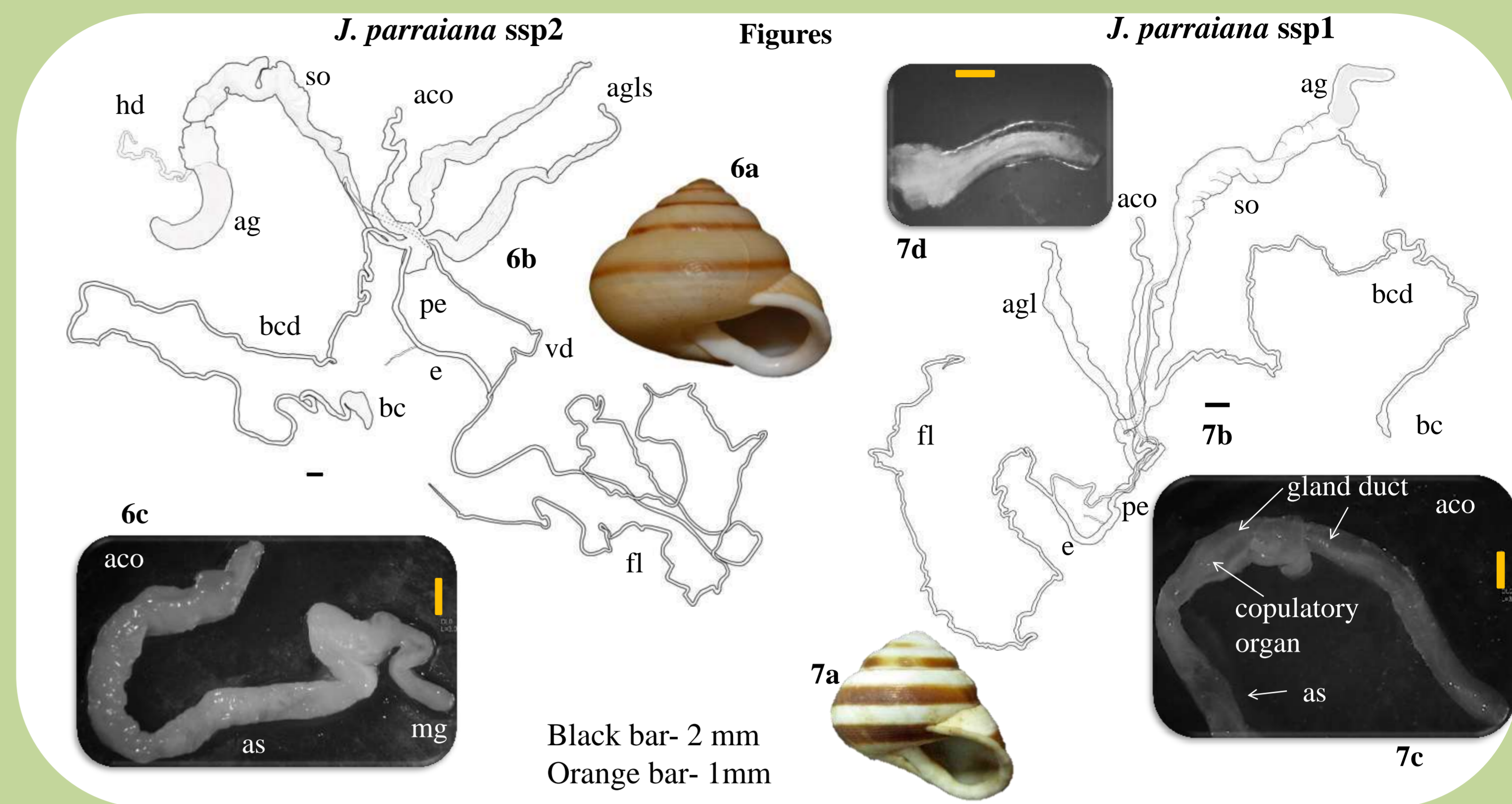
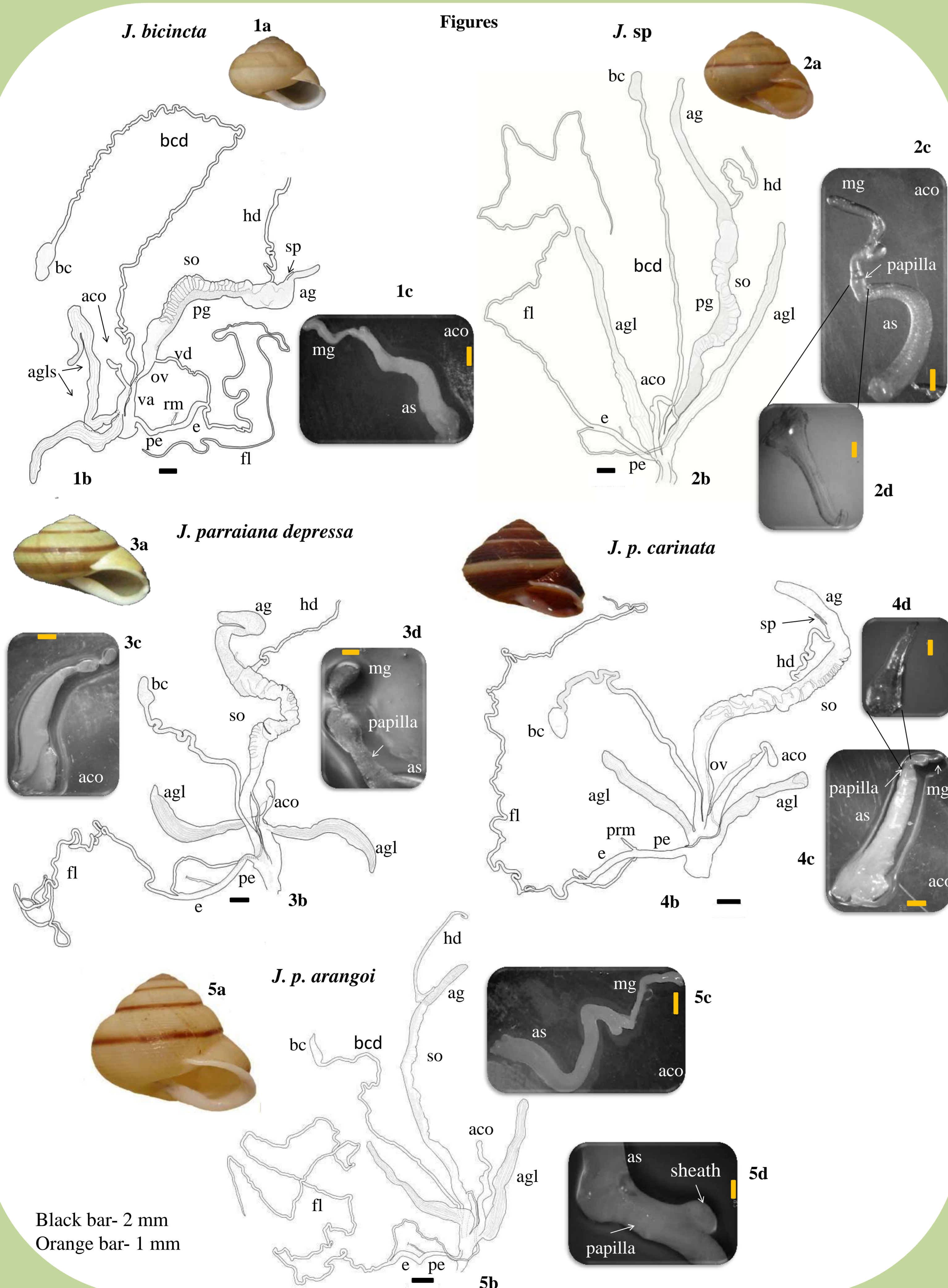


Materials y methods

Jeanneretia species were fixed in 70% ethanol. Adult specimens were dissected and the genital anatomy was studied using a Carl Zeiss Stereomicroscope. Subsequently, the reproductive organs were drawn from photographs taken with a Canon camera and a Dino-Eye Digital Microscope Eyepiece Camera.

Results

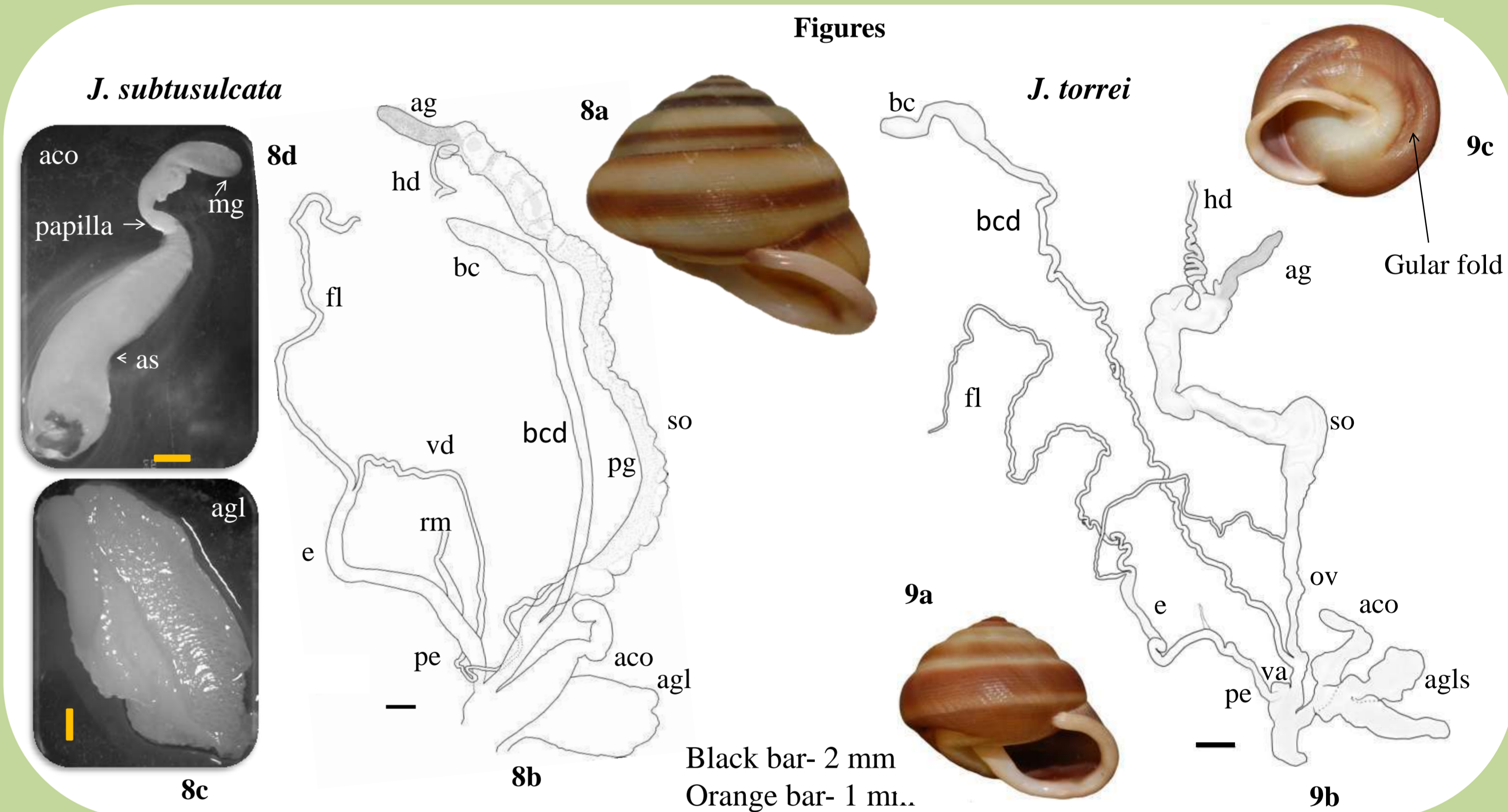
The subgenus *Jeanneretia* has a long, slender penis (pe) and a cylindrical epiphallus (e) with a weak retractor muscle (rm). The distal tip of the epiphallus splits into a long flagellum (fl) (fig. 1-7) and the vas deferens (vd). The vagina (va) is short and gives rise to the duct of the bursa copulatrix (bcd) and the oviduct (ov). The bursa copulatrix is elongated and the duct is longer than the spermooviduct (so), but (most often) shorter than the flagellum (fig. 1-7). The carrefour presents a fertilization pouch and single, long spermathecal tube (sp) (fig 5b). The auxiliary copulatory organ (aco), unlike the rests of the cepolids, consists of (1) an elongated gland (mg) inserted apically on a muscular papilla, (2) a dart-like structure (covered by a sheath, fig. 7d), and (3) a two accessory tubular glands (agls) inserted in the base of the atrial sac (ac). The dissected individuals did not show a dart, while their duct of the mucus gland was connected directly with the muscular papilla (fig. 7c), which continues with a similar structure to a dart (fig. 2d).



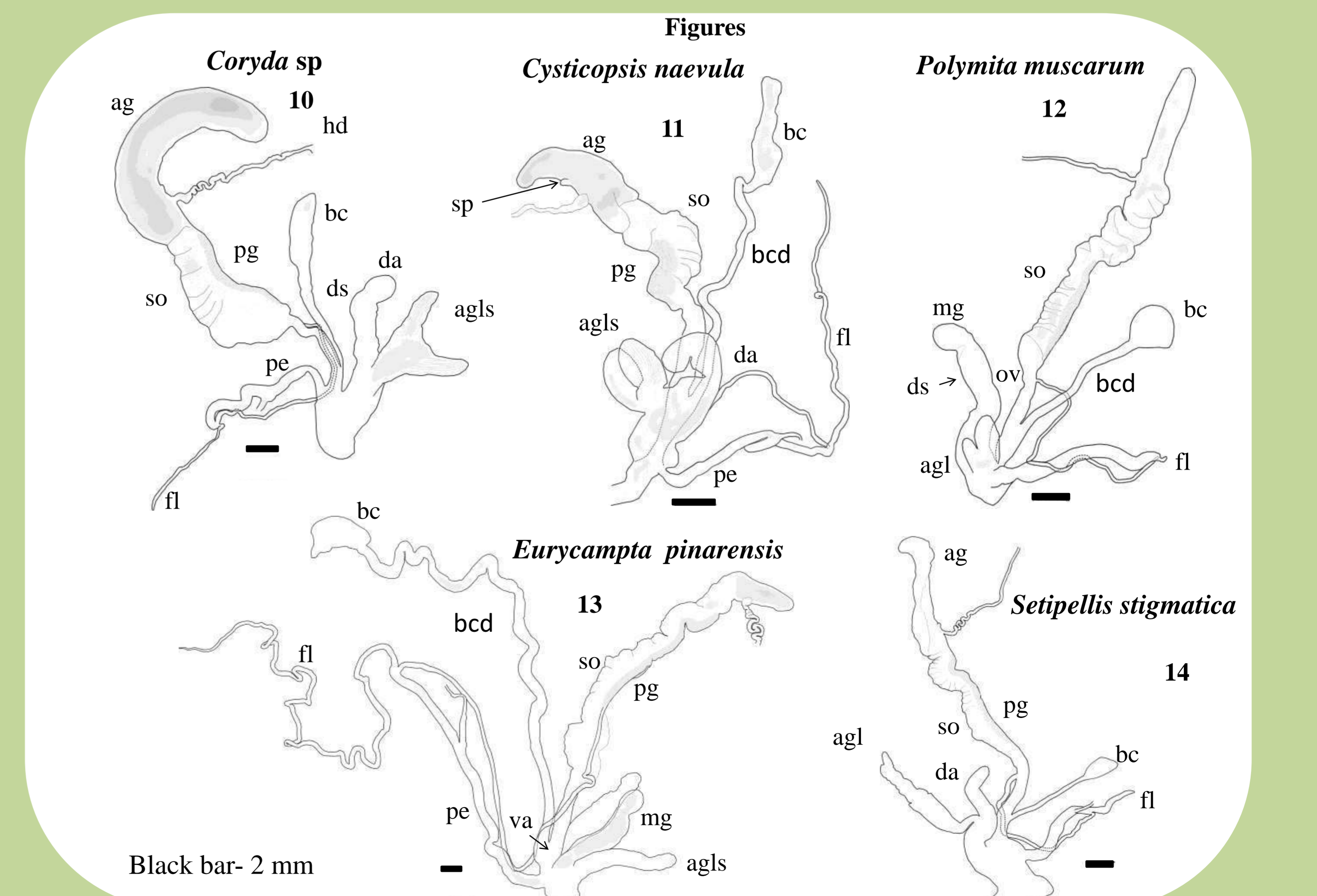
Measurements of the morphological variables of the reproductive organs in *Jeanneretia* species.

Length (mm)	<i>J. bicincta</i> (7)	<i>J. p. carinata</i> (8)	<i>J. p. depressa</i> (13)	<i>J. p. arangoi</i> (3)	<i>J. p. ssp2</i> (1)	<i>J. p. ssp1</i> (1)	<i>J. sp.</i> (13)	<i>J. subtussulcata</i> (3)
	$\bar{X} \pm SD$	$\bar{X} \pm SD$	$\bar{X} \pm SD$	Min - Max			$\bar{X} \pm SD$	Min - Max
fl	78 ± 18	64 ± 11	77 ± 27	85 - 98	260	95	90 ± 8	23 - 25
pe	5 ± 1	7 ± 1	7 ± 1	6 - 7	14	7	7 ± 1	6 - 9
ep	4 ± 1	4 ± 1	4 ± 1	4	13	4	4 ± 1	10 - 15
aco	12 ± 5	8 ± 3	8 ± 1	11 - 15	22	20	11 ± 2	11
agl	17 ± 4	13 ± 3	14 ± 3	18 - 25	30	18	25 ± 4	6 - 9
bcd	56 ± 23	44 ± 13	37 ± 15	29 - 59	80	80	44 ± 12	23 - 33
so	17 ± 3	22 ± 5	25 ± 5	20 - 21	38	-	20 ± 4	35 - 40

The genitalia of the subgenus *Guladentia* are similar to those of *Jeanneretia*. The flagellum and the bursa copulatrix duct can be short or long. The epiphallus is longer than the penis (fig. 8b, 9b). This subgenus can have an only alveolar gland (8c) or a gland formed by two cylindrical lobes (9b).



Jeanneretia ss. differs much from other cepolid subgenera, the main difference being the absence of a dart apparatus (da) typical of the family (fig. 10-14). Other cepolids lack a dart sac (ds) and/or a dart (2). The accessory glands are the longest in the family, and they are not joined as the remainder genus (except *Eurycampta*) where they can be joined in the base (fig. 11), unit for a common duct (10), bilobed (12) or an unique gland (fig. 9b, 14). The presence of a flagellum and a duct of the bursa long copulatrix distinguish the subgenus.



References

- (1) Clench J.W. and Aguayo, C. G. (1951): The Cuban genus *Jeanneretia*. Revista de la Sociedad Malacológica "Carlos de la Torre". 7 (3): 81-92.
- (2) Méndez, A. 2009. Variabilidad del dardo en especies de moluscos de la familia Cepolidae: implicaciones para la selección sexual. Thesis Master. B.Sc. Dissertation. 65 pp.