

***Epilobocera wetherbee*, a new species of freshwater crab
(Decapoda: Brachyura: Pseudothelphusidae)
from Hispaniola**

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Abstract.—*Epilobocera wetherbee*, a new species of pseudothelphusid crab, is described from the Dominican Republic. The species can be easily distinguished from other species of *Epilobocera* by its small size, absence of anterolateral spinulation and characters of the first male gonopods. SEM microphotographs of the first and second male gonopods of *E. wetherbee*, *E. sinuatifrons*, *E. haytensis* and *E. gertraudae* are provided. The apex of the second male gonopod in all species of *Epilobocera* studied is hollow, transversely truncate, with a prominent internal rib provided with spines. These characters distinctly separate *Epilobocera* from species in the subfamily Pseudothelphusinae where the gonopodal apex is spoon-shaped and provided with long setae. The new observations are incorporated into amended diagnoses of the subfamilies Epilobocerinae and Pseudothelphusinae.

The genus *Epilobocera* Stimpson, 1860, comprises six species of freshwater crabs restricted to the Greater Antilles and some nearby islands: *E. sinuatifrons* A. Milne Edwards, 1866, inhabits Puerto Rico and Saint Croix Island; *E. haytensis* Rathbun, 1893, is confined to Hispaniola; Cuba has three species, *E. armata* Smith, 1870, *E. cubensis* Stimpson, 1860, and the troglitic *E. gertraudae* Pretzmann, 1965; *E. gilmani* (Smith 1870), possibly conspecific with *E. cubensis*, has been described from Isla de Pinos. One species, *E. granulata* Rathbun, 1893, was described from an immature male labeled “West Indies” and the first male gonopod was not illustrated. Chace & Hobbs (1969) stated that “the material is now virtually macerated” and suggested that “In view of the immaturity of these specimens and the lack of specific type-locality, the species may remain a species *inquirenda* indefinitely un-

less it can be shown to be a synonym of *E. armata*.” The genus has been the object of recent revisions by Chace & Hobbs (1969), Pretzmann (1972) and Rodríguez (1982).

Due to the accessibility and small area of the Greater Antilles, their freshwater fauna is fairly well known. For this reason it has been noteworthy to find a new species of freshwater crab in the material recently collected by Dr. David Wetherbee during his explorations of the Cordillera Central of Hispaniola.

Materials and Methods

The materials used for the description of *Epilobocera wetherbee* were collected as two separate lots. The first lot included the male holotype and one juvenile specimen collected on 2 Oct 1990, and sent to the junior author in the National Museum of Natural

History, Smithsonian Institution, Washington (USNM). The specimens were received in semi-dry condition, and the coloration was carefully noted at the time of reception (see "Color"). The specimens were subsequently placed in alcohol and shipped to the senior author for further study. The second lot was collected on 12 Jul 1991, at the type locality, and was shipped to the senior author by Dr. Wetherbee. The lot included two males and five ripe or ovigerous females. These specimens were in poor condition and almost all pereopods and some carapaces have become dislocated. The specimens are deposited at the USNM and the Reference Collection of the Instituto Venezolano de Investigaciones Científicas, Caracas (IVIC).

Other abbreviations used are cb for carapace breadth, and cl for carapace length.

For comparative purposes we have studied the first and second gonopods of other species of *Epilobocera* deposited in IVIC, namely *E. sinuatifrons*, 1 male, cl 55.6 mm, from El Yunque, Coca Falls, Luquillo, Puerto Rico, collected 5 Feb 1972; *E. haytensis*, 1 male cl 43.2 mm, from Barahona, Dominican Republic, collected 3 Feb 1967; *E. gertraudae*, 1 male cl 31.5 mm, from Cueva Superior Majaguas, Sierra de San Carlos, Pinar del Rio, Cuba, collected 2 Aug 1977.

The first and second gonopods of the holotype of *E. wetherbeeii* and all the species recorded above were dried, coated with platinum, and photographed on a scanning electron microscope Hitachi S-500. Point-drying was not used due to the extreme brittleness of the material. For the gonopods of *E. armata* and *E. cubensis* we have relied on drawings and notes made on the material already reported by Rodríguez (1982).

Subfamily Epilobocerinae Smalley, 1964

Genus *Epilobocera* Stimpson, 1860

Epilobocera wetherbeeii, new species

Figs. 1, 2A, B, 3A, 4A

Material.—Rio Magua, tributary of Rio Mao, Sierra Platicos, northern slopes of the

Cordillera Central, near the water divide, Provincia Santiago, Dominican Republic, at waterfall, 2300 m alt., 2 Oct 1990, leg. David Wetherbee, 1 male holotype, cl 16.5 mm, cb 26.6 mm, 1 juvenile (USNM).—Same data, 12 Jul 1991, 1 male paratype, cl 15.0 mm, cb 23.5 mm (IVIC), 1 male, broken carapace, cl approximately 12.5 mm, cb approximately 20.1 mm; 4 ovigerous female paratypes, cl 14.7, 15.5, 16.1 and 16.8 mm, cb 24.6, 25.8, 25.7 and 28.1 mm, 1 adult female broken carapace cl 14.2 mm, cb approximately 24.0 mm (USNM).

Description.—Carapace wide (cb/cl = 1.61 in holotype), strongly convex on antero-posterior axis. Cervical groove absent, only in female cl 15.5 mm indicated by thin line on left side of carapace. Antero-lateral margin without conspicuous depression behind antero-external angle, entire or slightly festooned on anterior portion, with occasional small papillae in holotype and male paratype, smooth or with 12 to 16 poorly-defined papillae in females. Postfrontal lobes absent, their position indicated only by rounded scars; median groove thin and shallow, obsolescent. Front lacks upper border, but surface of carapace in this area rounded off to lower margin. Lower margin clearly visible in dorsal view, slightly arched; strongly sinuous in frontal view. Surface of carapace smooth and polished, with regions not marked. No tooth present at aperture of efferent branchial channel.

Largest cheliped elongated, ischium overreaching by $\frac{3}{4}$ of its length margin of carapace. Palm moderately inflated, lower margin of palm and fixed finger sinuous; fingers arched, widely gaping. Walking legs slender, ischium of third pair 4.7 as long as wide. Third maxilliped with merus wide, antero-lateral border evenly rounded; exopod devoid of flagellum, overreaching ischium of endognath, its tip rounded, provided with plumose setae.

First male gonopod long and slender. Margin (sensu Smalley 1964a) progressively twisted dextrally, its middle portion direct-

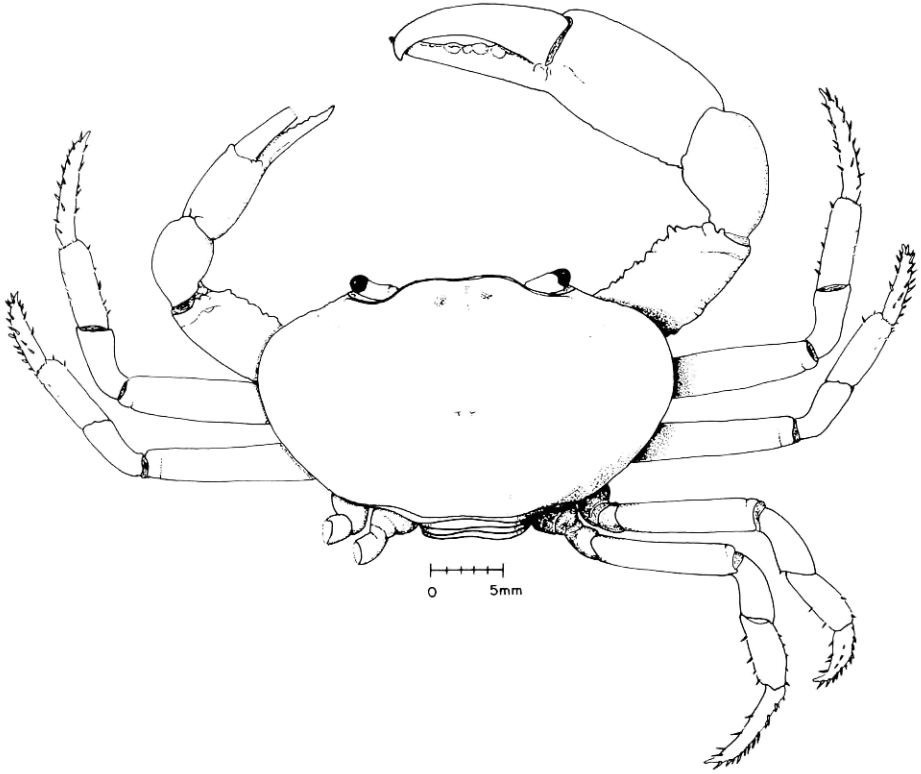


Fig. 1. *Epilobocera wetherbeeii*, new species, holotype male, dorsal view of carapace and pereiopods.

ed mesially and its apical portion directed to cephalic side. Margin developed distally into strong recurved mesial lobe. Apex club shaped; bulging lateral process ("globulus" sensu Pretzmann 1972) with 7 strong hooked spines; finger-like caudal process ("nasus" sensu Pretzmann 1972) devoid of spines, apex with crenulations on inner side; mesial process ("caudaler Kamm" sensu Pretzmann 1972) consists of 5 spines disposed in comb-like structure directed externally; intermediate plate ("Quer-kamm" sensu Pretzmann 1972) with 5 slender spines; cephalic margin with few tiny proximal papillae, ending mesially in acute angle (broken in our SEM illustration of Fig. 3a). Second male gonopod straight, apex hollow, transversely truncate, prominent internal rib provided with spines.

Color.—According to field notes taken by

the collector, the color in live specimens "varies from brown in some to orange. Orange specimens have maroon (reddish purple) walking legs and white claws." In the holotype specimen preserved in alcohol the color is as follows. Overall color carapace salmon pink. Walking legs lighter. Chelipeds still lighter, buff, articular membranes between merus and carpus, between carpus and propodus, and at base of dactyl, salmon pink and contrasting with buff of articles; membrane at either end of carpus darker than those at base of dactyl; membranes of major right chela darker than those of minor (left).

The fifth left leg is detached; articular membranes not colored on this or any other of the walking legs. Underside of the walking legs only slightly lighter in color than other sides.

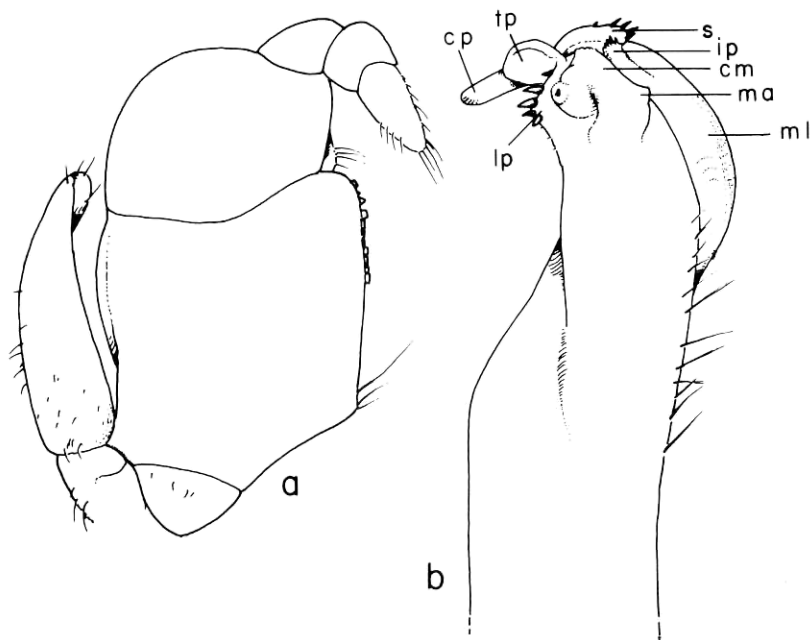


Fig. 2. *Epilobocera wetherbeeii*, new species, holotype male: a, third maxilliped, right; b, apical portion of left first gonopod, cephalic view. ml, mesial lobe; lp, lateral process; cp, caudal process; s, spines of mesial process; ip, intermediate plate; cm, cephalic margin; ma, mesial angle of cephalic margin; tp, terminal process.

Underparts of body lighter than dorsum, but flush of salmon pink on sternal plate between chelipeds and third maxillipeds, with similar color on exposed articles of third maxilliped, pterygostomian and subhepatic regions. Abdomen not salmon pink, but of somewhat darker hue than adjacent sternites to each side.

Size.—The species is small for the members of the genus. Our largest male has a cl 26.6 mm, and females reach maturity at cl 24.6 mm.

Remarks.—The small size distinguishes this species from all others in the genus; in fact *Epilobocera sinuatifrons* and *E. haytensis*, are among the largest Pseudothelphusidae on record (cb 103.3 mm and 100.4 mm, Rodríguez 1982). The largest specimens recorded for *E. armata* and *E. cubensis* have a cb of 85.2 mm and 84 mm, respectively (Rodríguez 1982). The specimen of *E. gertraudae* examined by us has a cb of 53.8 mm. The absence of teeth on the

antero-lateral margin and the smoothness of carapace characteristic of *E. wetherbeeii* are only observed in *E. cubensis*, but while in this last species the margin has some rudimentary papillae, in *E. wetherbeeii* it has none. The coloration observed in this species has not been reported for other *Epilobocera*.

The characteristic tooth present at the aperture of the efferent branchial channel in other species of *Epilobocera* (see Rodríguez 1982, fig. 3h–l), and which can be clearly seen through the channel aperture, is missing in this species.

The most important differences from other species are found in the apex of the first gonopods, as can be observed by the illustrations of the appendages of other species presented in figure 3 and the illustrations of the gonopods of *E. armata* and *E. cubensis* given by Chace & Hobbs (1969) and Rodríguez (1982). The strong mesial lobe of *E. wetherbeeii* is found also in *E. gertraudae*.

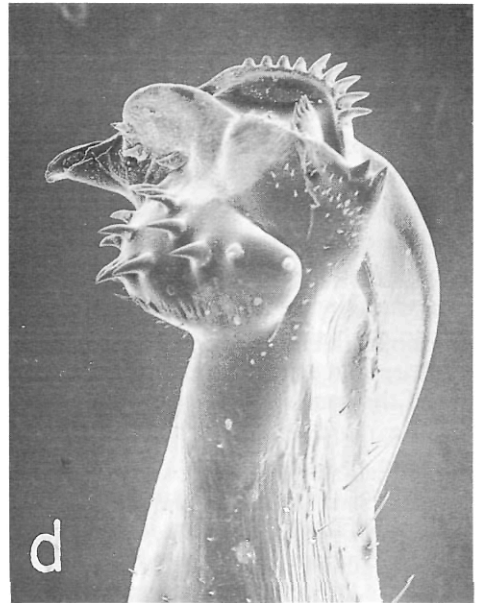
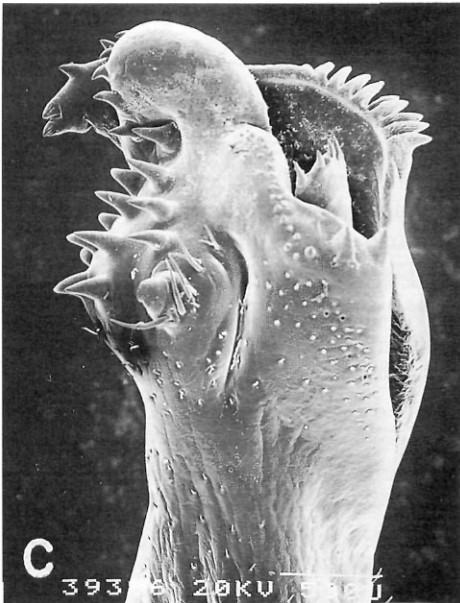
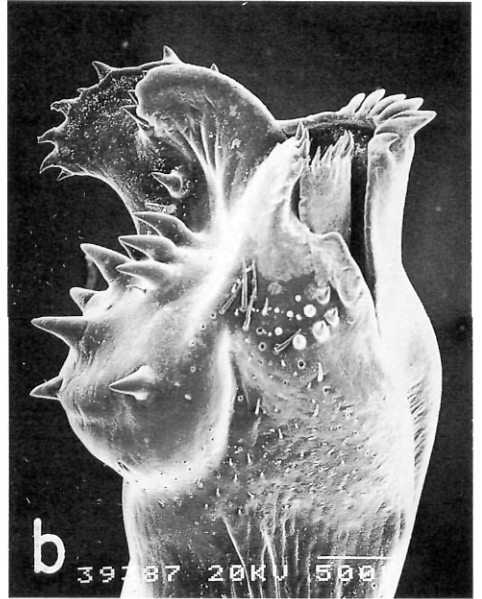
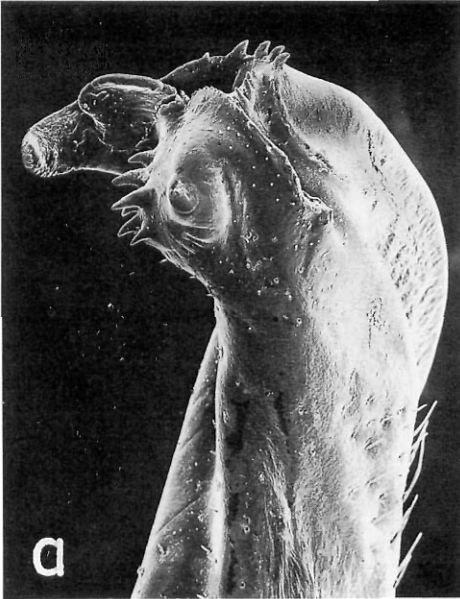


Fig. 3. Apical portion of left first gonopod: a, *Epilobocera wetherbeeii*, new species, holotype; b, *E. sinuatifrons*; c, *E. haytensis*; d, *E. gertraudae*. d at same scale as c.

The number of strong spines on the bulging lateral process of the different species are: in *E. wetherbeeii* 7, *E. sinuatifrons* 14–16, *E. haytensis* 12, *E. armata* 13–14, *E. cub-*

ensis 8, and *gertraudae* 12. The finger-like caudal process is devoid of spines in *E. wetherbeeii*, but armed with strong spines in *E. sinuatifrons* and *E. haytensis*, and with

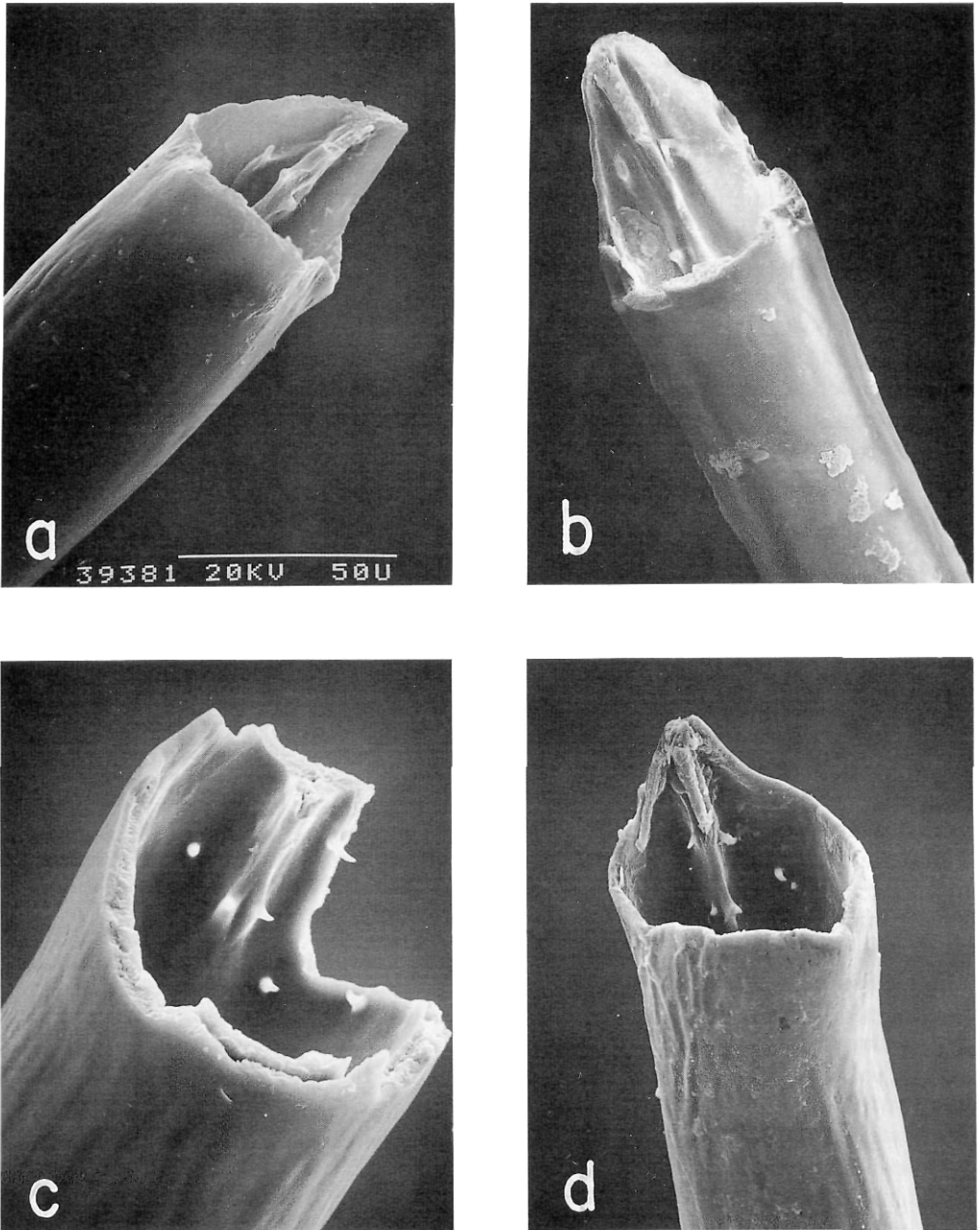


Fig. 4. Left second gonopod, detail of apex: a, *Epilobocera wetherbeeii*, new species, holotype; b, *E. sinuatifrons*; c, *E. haytensis*; d, *E. gertraudae*. b, c, and d at same scale as a.

small spines in *E. armata*, *E. cubensis* and *E. gertraudae*. The number of spines on the mesial process in the different species are: in *E. wetherbeeii* 5, *E. sinuatifrons* 7, *E. haytensis* 9, *E. armata* 9, *E. cubensis* 6, *E. ger-*

traudae 9. The terminal process has more than 3 spines in *E. sinuatifrons* and *E. haytensis*; in *E. armata*, *E. cubensis* and *E. gertraudae* there are only 2 or 3 spines on the cephalic side; in *E. wetherbeeii* the process

is devoid of spines. The intermediate plate has approximately the same form and number of spines in all the species. The cephalic margin in *E. wetherbeeii* has a few tiny papillae proximally; in *E. haytensis* these papillae are stronger, disposed in a double row which extends through the length of the margin, in *E. armata*, *E. cubensis*, and *E. gertraudae* there are a few small spines; and in *E. sinuatifrons* this margin is produced into 6 long spines. The mesial angle of the cephalic margin is unarmed in *E. wetherbeeii*; while it has two strong spines in all other species.

The apex of the second male gonopod in all species of *Epilobocera* is hollow, transversely truncate, with a prominent internal rib provided with spines. In some specimens can be observed a very thin membrane which prolongs the apex and which is lost during preparation of the appendage for scanning microscopy. The morphology of the apex of *Epilobocera* distinctly differs from all other species of Pseudothelphusidae where the gonopodal apex is spoon shaped and provided with long setae (Rodríguez & Suárez 1994). This character should be incorporated into the diagnoses of the subfamilies Epilobocerinae and Pseudothelphusinae, as follows.

Epilobocerinae Smalley, 1964b (caract. emend.): Pseudothelphusidae with apex of first gonopod bearing both a group of apical spines surrounding aperture of spermatoc channel, and also large scattered spines; apex of second male gonopod hollow, transversely truncate, with prominent internal rib provided with spines.

Pseudothelphusinae Ortmann, 1893 (caract. emend.): Pseudothelphusidae with apex of first gonopod armed with a distinct group of apical spines surrounding aperture of spermatoc channel; apex of second male gonopod spoon shaped and provided with long spines.

Etymology.—The species is named in honor of Dr. David K. Wetherbee, who collected the type material.

Common name.—The species is locally known as "Piñita."

Acknowledgments

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