

Orzolina thalassophila n. gen., n. sp., a new *Bembidiinae* from
the intertidal zone in Lanzarote, Canary Islands
(Coleoptera, Carabidae)

By Antonio Machado

*Orzolina*¹ n. gen.

Type species: *Orzolina thalassophila* n. sp.

¹ The name *Orzolina* is derived from Orzola, a village in Lanzarote, in whose vicinity this new genus was discovered. Its grammatical sense is feminine.

Description

Size small, form like a bomb, convex abdomen, tegument glabrous, microreticulated; wingless.

Head normal; antennae long; no frontal furrows; mandibles short, apically curved, pointed; eyes normal.

Pronotum narrower than elytra; lateral margins little curved; anterior angles protruding; no basal fovea; transversal impression obsolete; posterior marginal seta in forward position (but less than in *Zecillenus* Lindroth); lateral beads deep, very conspicuous.

Elytra oval, striae obsolete, more than five dorsal punctures in 3rd interval; lateral beads deep, very conspicuous; apically with a short plica starting at margin and running inwards at 7th interval.

Legs slender; first two protarsomeres in male slightly dilatated, with smooth internal "spine".

Penis "Bembidion"-like, with several internal sclerotized pieces; parameres with two terminal setae; spermathecae sclerotized, with very short anex gland, conductus short, laterally and terminally inserted, no vaginal plate at the union with the bursa copulatrix.

Diagnosis

Size small, body like a bomb, conspicuously microreticulated, glabrous, apterous. Mandibles short, pointed. Pronotum much narrower than elytra; both with U-like lateral beads, very conspicuous. Elytra oval, no shoulders, striae obsolete, more than 5 dorsal punctures in 3rd interval; a carinated plica in apical fourth of 7th interval.

Orzolina thalassophila n. sp. (Fig. 1)

Type locality: Orzola, Lanzarote, Canary Islands, Spain.

Description

Length 3-3.5 mm; head 0.7×0.7 mm, antennae 1.9 mm, pronotum 0.7×0.9 mm; elytra 2.12×1.45 mm. Body slender, form like a bomb,

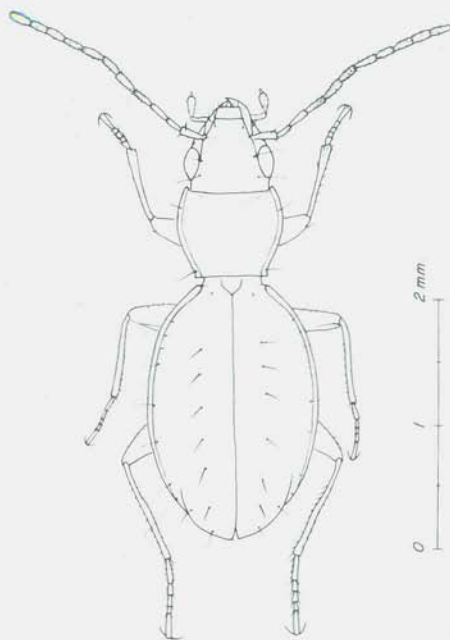


Fig. 1 Imago of *Orzolina thalassophila* n. gen., n. sp.

abdomen very convex, much broader than head and pronotum. Legs slender. Wingless.

General colouration rufo-piceous, blackened in elytra and head; legs, palpi and base of antennae testaceous, latter infuscated from 4th article onwards. Teguments smooth, glabrous, subnitidous, with polygonal isodiametric reticulation, stronger in head, conspicuous, slightly transversal in disc of pronotum.

Head small, antennae long, pubescent from 4th antennomere on (inclusive); eyes big, convex but moderately protruding; temporae slightly oblique, with hairs; front flat, with no furrows, a feeble oblique impression between clypeus and distal end of lateral margins; front-clypeal sulcus shallow, clypeus with seta at each side; mandibles short, curved at apex, sharp-pointed; mentum and submentum fused (Fig. 2C), with single tooth and 6 setae, labial palpi polichetous.

Pronotum slightly transversal, a little broader than head, little convex; lateral margins moderately curved, straight and convergent in basal half; greatest width about middle; hind-angles almost right, sharp; front-angles shortly protruding; lateral bead u-like, deep and broad, uniformly reflexed, partially with metallic tint; posterior marginal setae moderately displaced in forward position (less than in *Zecillenus* Lindroth); anterior and posterior margins not bordered; base slightly depressed, its margins straight; no

lateral fovea, no transverse basal impression; median and anterior impression feeble.

Elytra completely oval, without shoulders, very convex, with base depressed and disk subconvex; lateral beads like in pronotum forming a continuum, very conspicuous, broad in the basal third and narrower towards the apex, disvanished at level of 8th umbilical pore; apical angles rounded, slightly separated from each other. Marginal line curves inwards at level of 7th interval generating form to a characteristic short carinated plica; striae obsolete (intervals sometimes notable because of their slight convexity; umbilical series of 8 pores (4+4). Six (or 7 as unilateral aberration) stout setae in the 3rd interval (sic!); apical and subapical setae present. The last (6th or 7th) setae of the dorsal series is placed as a preapical setae (vide ANTOINE 1955, p. 125, fig. 25), but is truly in the 3rd interval (observed with transmitted light) and its structure is the same as the other dorsal setae, instead of that more weak of the apical and subapical ones.

Ventral parts rufo-testaceous; thoracic sternites with short and disperse pilosity; abdominal sternites with a row of a dozen pre-marginal setae; metaepisternites short, romboidal; posterior trochanter normal.

Legs slender, metatibiae slightly curved ventrally; anterior tibiae and tarsi pubescent; apex of latter with a slight cut in the internal angle (Fig. 2D); claws simple. The two first tarsomeres in ♂♂ slightly broadened, with internal angle little protruding as typical in the group.

Aedeagus (Fig. 2A) with straight median lobe, its point thumb and high; internal sac with two dorsal sclerotized pieces, the distal one much bigger and bent backwards, placed in the middle; two more pieces centered, the first of them like an openended ring (twisted); parameres with two apical setae. In most males the tip of the penis is seen sticking out, when dead.

Female terminal stylomere (Fig. 2E) with two or three spines in the outer margin and one in the internal; two pre-apical setae placed together. Spermathecae (Fig. 2B) digitiform, narrower towards its proximal end, anex gland very reduced, shorter than the width of spermathecae; hyalin conduction laterally inserted at the end and connected to bursa copulatrix without vaginal plate.

Diagnosis

Size 3–3.5 mm; body slender, form like a bomb, subnitidous, glabrous, wingless. Colouration rufo-piceus, blackened in head and elytra, not metallic; legs, palpi and antennae testaceous; latter long, infuscated and pubescent from 4th article on. Pronotum much narrower than elytra, no basal foveas, transverse impression obsolete; marginal beads of elytra and pronotum continuous, deep and broad, u-like. Elytra completely oval, no shoulders, very convex but base depressed; plica of 7th interval notorious, slightly protruding backwards; 6 (7) dorsal proes at 3rd interval.

Material

Holotype: Orzola (intertidal zone) 1 ♂, V-1986 Machado leg!. Paratypes 28 ♂♂ and 15 ♀♀, same locality, Machado leg! and A. Aguiar leg!. Holotype in my collection, paratypes in the Museo Insular de Ciencias Naturales (Santa Cruz de Tenerife, 18 exx), Museo Nacional de Ciencias Naturales (Madrid), British Museum (Natural History), Institute Royal des Sciences Naturelles de Belgique (Bruxelles), Rijksmuseum van Natuurhistorie (Leiden), Museum de Histoire Naturelle (Paris) and in the private collections of some colleagues (J. Mateu, C. Jeanne, R. Sciaky and G. Israelson).

Discussion

The genus *Orzolina* nov. is very well characterized by its bomb-like habitus (no shoulders), obsolete basal impressions of pronotum, more than 5 dorsal setae in elytra, striae completely obsolete (unique in *Bembidiini*), development of an apical plica in the 7th interval, form of spermatheca and absolute lack of wings.

The only known *Bembidiinae* with more than 2 dorsal setae in elytra belong to the group of *Cillenus* s. l. („Cillenus type“ in LINDROTH, 1980) and do live also in the intertidal zone. Besides the peculiar body form of *Orzolina* n. gen., which clearly differs from the more parallele „Cyllenus type“, one could think of a close relation with latter group, but there are other characters which isolate its position placing it somewhere between the typical „Bembidion“ and *Zecillenus* Lindroth.

PERRAULT (1981) completed an interesting study that presented a scheme of clearly separated genus in the complex of *Bembidiini* s. str. He used, among others, the female spermatheca as discriminant character for the generic level, as also proposed by SCHULER (1971). The spermatheca of *Orzolina* n. gen. differs from all illustrated by PERRAULT (o. c.) in having a very reduced anex-gland and the latero-terminal implantation and thickness of the hyaline conduct. Its connection to the bursa copulatrix is simple, with no vaginal plate, as in *Synechosticus* s. l.

It is likely that Perrault did not have time enough to know about Lindroth's description of *Zecillenus* for a group of neozelandese species, segregated from *Cillenus* Samouelle (dealt as subgenus of *Bembidion*) which show at least 3 dorsal setae in elytra. Lindroth supports this separation in the structure of the internal sac of edeagus, which has a flagellum instead of the "basal brush" characteristic to *Bembion* "sensu latissimo", and in the position of the posterior setae of pronotum. In *Zecillenus* it is not placed as in *Cillenus* in the hind-angle, but in the lateral margin in a forward position. The posterior setae of *Orzolina* n. gen. takes exactly an intermediate position between that of *Cillenus* and that of *Zecillenus*.

I do not know the spermatheca of latter genus, but the characteristic flagellum of the endophallus is not present in *Orzolina* n. gen.

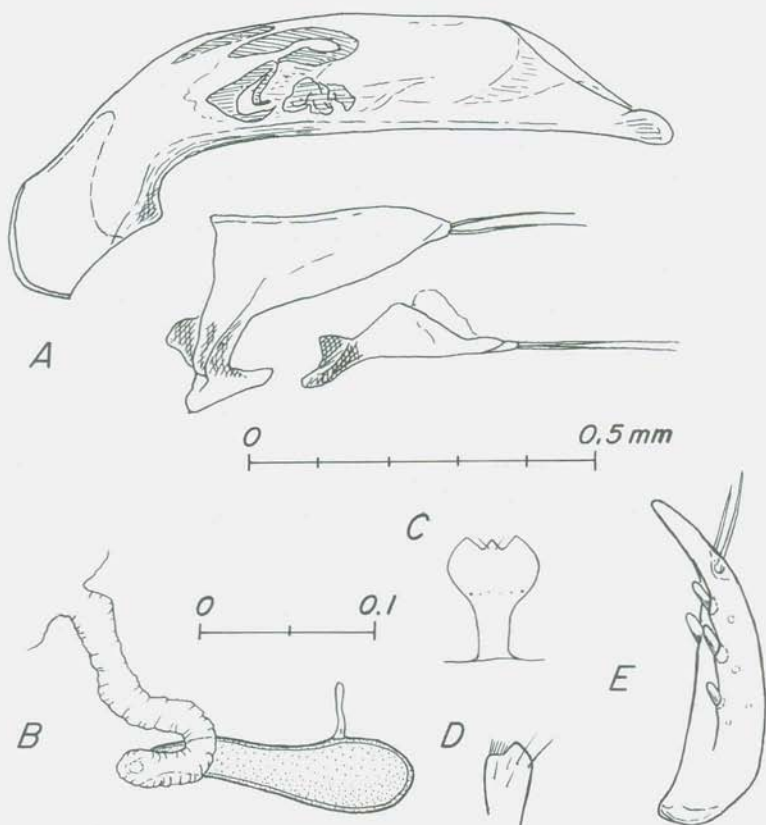


Fig. 2 *Orzolina thalassophila* n. gen., n. sp. — A. Aedeagus. — B. Spermathecae. — C. Detail of mentum and submentum. — D. Apex of anterior tibia. — E. Female terminal stylomere.

The eedeagus of *Orzolina* n. gen. is of the same shape of typical *Bembidiini* (i. e. *Ocydromus atlanticus*), the parameres are biquetous (3–4 setae in *Cillenus* and *Zecillenus*) and only the inner pieces seem to be a little more complex. The latero-apical plica of the elytra is exclusive to *Orzolina* n. gen. and may be associated with presence of defense glands in the abdomen.

Some characters as the disappearance of all elytral striae, the almost obsolete basal transversal impression of pronotum, its apterism and absence of shoulders, etc show an ultraevolved condition in *Orzolina* n. gen., but other characters as the mandibles not prolonged like in *Cillenus* (but curved and pointed), the microreticulation of teguments and the higher number of dorsal setae, indicate a more primitive condition. This setae are placed inside the 3rd interval and not attached to the 3rd striae as occurs in the other genera of the group.

All these characteristics make it difficult to find a clear affinity of *Orzolina* n. gen to one of the already known genera of *Bembidiini*. However, the only representative of the above mentioned complex in this region is *Cillenius lateralis* Sam. (Atlantic coast of Europe and North Africa). It is possible that *Orzolina thalassophila* n. sp. is another more paleoendemic element of the Canarian fauna and, therefore, of remote origin and not derived from actual lines. A cladistic analysis of the whole complex is highly desirable, particularly because the *Cillenius*-like habitus seem to be a convergence adaptation to the same way of living. Hypothesis on the biogeography of the group as that of DARLINGTON (1953) are in need of revision in the light of existence of *Orzolina thalassophila* n. sp.

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Literaturbesprechung

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Im Zeitalter der Information für Bibliographien eine Lanze zu brechen, hieße Eulen nach Athen tragen. – Blattlauswespen sind die Hauptparasiten (und damit Regulatoren), der die menschliche Ernährung so nachhaltig beeinflussenden Blattläuse und damit vor allem für integrierte Schädlingsbekämpfung von eminenter Wichtigkeit. Die hier von einem ihrer prominenten Kenner vorgelegte Gruppenbibliographie schafft die notwendige Basis für jeden, der auf diesem Felde arbeiten will. Sie ist in 10 Sachkomplexe unterteilt, von denen der der integrierten Schädlingsbekämpfung den umfangreichsten (und auch noch weiter untergliederten) einnimmt, und ermöglicht schnellen Zugriff zu gewünschten Arbeiten. Puthz, Schlitz