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Two new Lower Cretaceous hymenopterous insects (Insecta: Hymenoptera) from Sierra del Montsec, Spain

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ABSTRACT

Two new hymenopterans are described from the Lower Barremian lithographic limestones of Sierra del Montsec (Lleida, Spain), *Leridatoma pulcherrimapulcherima* n.gen., n.sp. (Xyelotomidae RASNITSYN, 1968) that combines the most and the least advanced character states in the family (in structure of antenna and fore wing RS, respectively), and *Cretephialites pedrerae* n.gen., n.sp. (Ephialtidae HANDLIRSCH, 1906).

Keywords: Insecta. Hymenoptera. n.gen. n.sp. Lower Cretaceous. Spain.

INTRODUCTION

The important assemblage of hymenopterans from the Lower Cretaceous of the lithographic limestones of Sierra del Montsec has recently received considerable attention (Ansoerge, 1993; Rasnitsyn et al., 1999; Rasnitsyn, 2000; Rasnitsyn and Ansoerge, in press; Rasnitsyn & Martínez-Delclòs, 2000). This has resulted in description of one new family, 9 new genera and 22 new species. By no means, however, this progress has exhausted the diversity of the source fauna. The new findings considered below confirm this inference. The two fossils under description have been collected by the junior author in the lacustrine lithographic limestones of the Montsec Range, Lleida Province of Spain, which are intercalated within freshwater charophytic limestones. The lithographic limestones are Lower Cretaceous and supposedly of Lower Barremian age (Ansoerge, 1993).

TAXONOMY

Family: Xyelotomidae RASNITSYN, 1968

GENUS *Leridatoman*. gen.

Type Species: *Leridatoma pulcherrima* n.sp., Lower Cretaceous of Spain.

Name derivation: After the Spanish province Lleida (= Lérida).

Diagnosis: The new genus is similar to *Xyelocerus* RASNITSYN 1968, *Undatoma* RASNITSYN 1977 and *Xaxexis* PAGLIANO AND SCARAMOZZINO 1990 (= *Protenthredo* HONG 1982, non PONGRAC, 1928) in having vein SC completely lost. It differs from *Xyelocerus* in having M and Cu extend beyond 3r-m

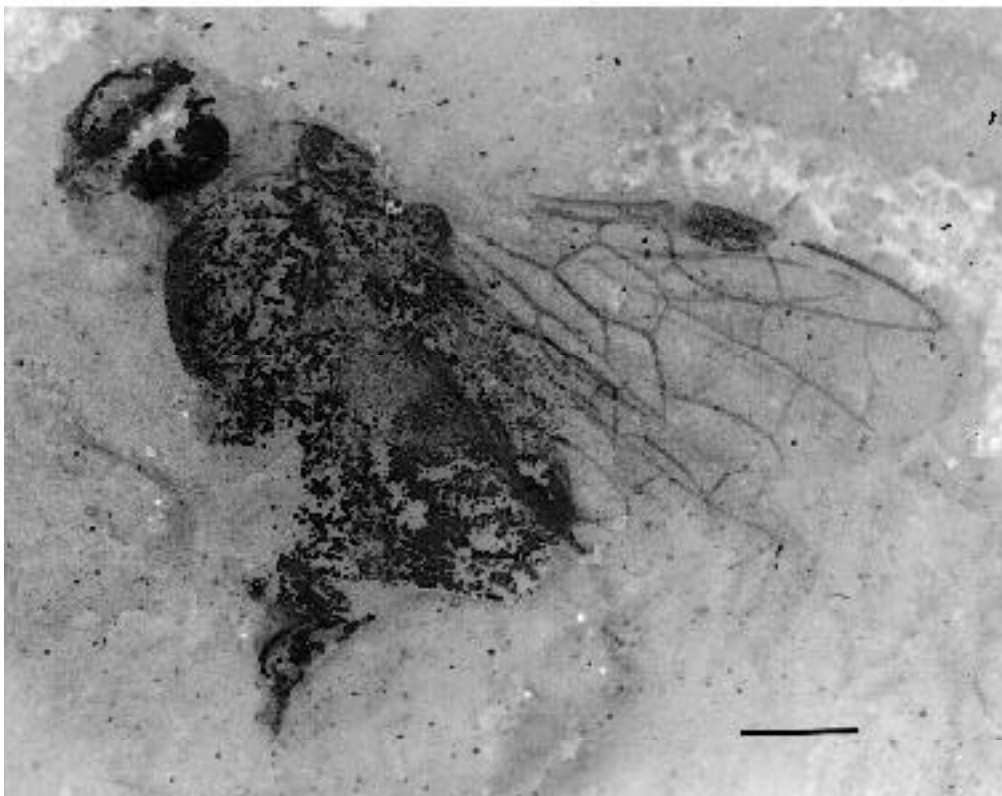


Figure 1. *Leridatoma pulcherrima* n.gen., n.sp., holotype. Scale bar 1 mm.

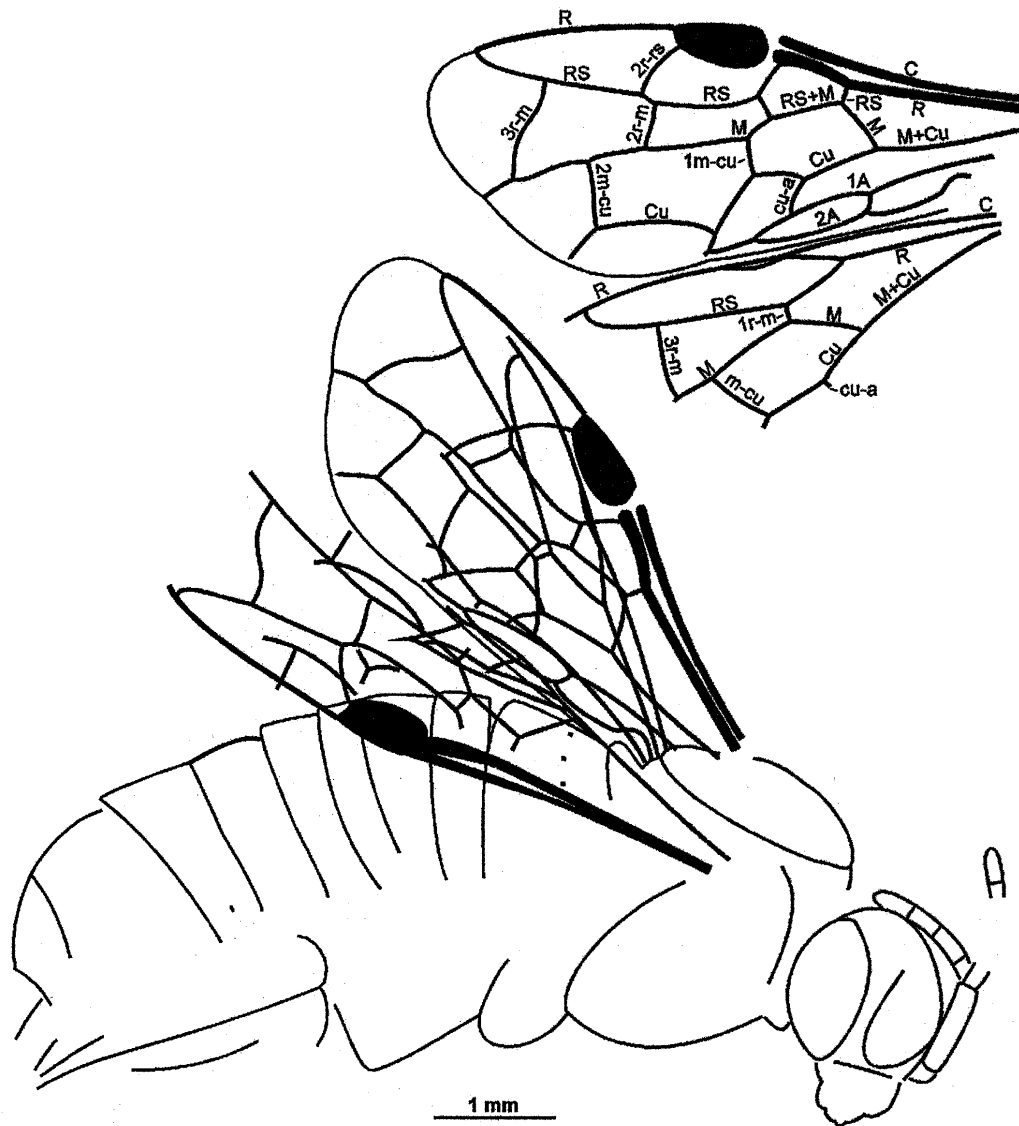


Figure 2. *Leridatoma pulcherrima* n.gen., n.sp., drawing of the holotype. Venational symbols are customary.

and 2m-cu, respectively, and in having antennal flagellum that is 4-segmented, long and thick (longer than and almost as thick as, the composite third segment). It differs from *Undatoma* and *Xaxexis* (whose antennal structure unknown in details) in having crossvein 1m-cu short. It differs additionally from *Undatoma* in having basal corner of cell 1m-cu not much elongate, so that cu-a meets Cu in the second third of cell 1m-cu, and from *Xaxexis* in that it has M joining RS well distant from the base of the latter. The first section of RS is longer than in any member of Xyelotomidae and the superfamily Tenthredinoidea as a whole except Rasnitsyn (1968).

Description: Antenna with 3rd segment much shorter than head, subcylindrical, flagellum 4-segmented, longer than and slightly thinner than 3rd segment. Wing venation complete except SC fully lost. First section of RS about 0.3 times as long as that of M. Cell 1m-cu with proximal corner comparatively short and wide (more than 60°), receiving cu-a at about 0.6 of its length. 1m-cu much shorter than section of Cu adjoining it distad. Hind wing venation as in *Xyelocerus*. Ovipositor only slightly extending beyond abdominal apex.

Remarks: Although being one of the youngest xyelotomids, the new genus retains the plesiomorphic wing ve-

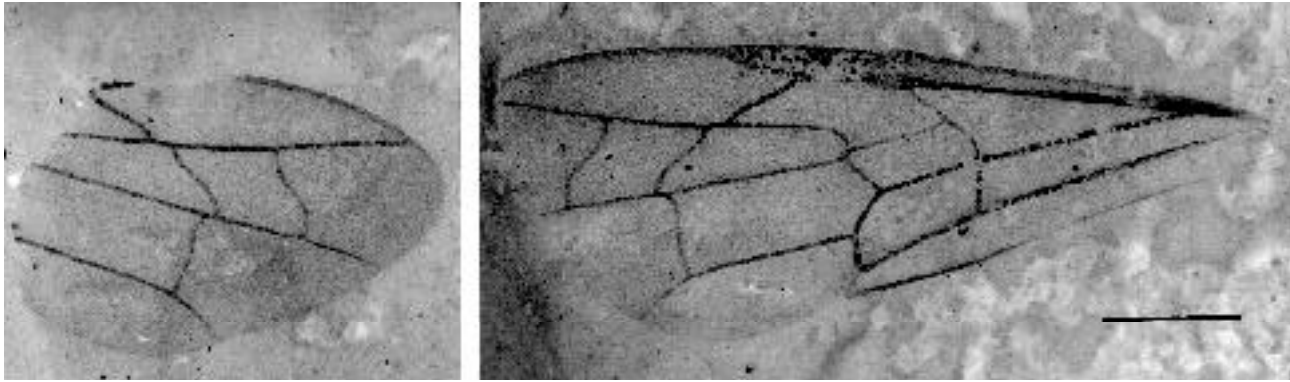


Figure 3. *Cretephialtites pedrerae* n.gen., n. sp., holotype. Scale bar 1 mm.

nation, except for the loss of SC and of the fore branches of RS (the latter is preserved only in the Upper Jurassic *Pseudoxylela*, the most primitive genus in the family. In contrast, the antennal structure is most derived within Xyelotomidae from the ancestral xyelid-like form (cf. Rasnitsyn, 1969, 1996).

Species included: Type species.

***Leridatoma pulcherrima* n.sp.**

Figures 1-2

Holotype: Specimen preserved sidewise (part and counterpart), housed in Paläontologische Museum, Museum für Naturkunde, Humboldt Universität, Berlin, J. Ansoerge collection MA 100.

Type locality: Road cutting “La Cabrua” in the Montsec de Rúbies mountain range (Province Lleida/Catalonia).

Type horizon: Lower Barremian lithographic limestones intercalated within freshwater charophytic limestones.

Name derivation: *pulcher* (Latin) for pretty, beautiful.

Diagnosis: as for the genus.

Description: Male unknown. Female. Colour dark, particularly on ventral body side, pronotum, legs except coxae, and sawsheaths light. Eyes very large (occupying most of head sides). Antenna short (not much longer than head), with 3rd segment about 4 times as long as wide, following four segments nearly twice as long as wide, their combined length about 1.5 times that of 3rd seg-

ment. Forewing with pterostigma short (about twice as long as wide), dark. Base of RS subvertical to R. RS+M taking about 0.7 of upper side of cell 1mcu. RS receiving 2r-rs distad of 2r-m for about half length of 2r-m. 3r-m sinuate. Cell 3rm slightly longer than 2rm, receiving 2m-cu near its midlength. Ovipositor almost half as long as forewing, extending beyond abdominal apex for its some 0.2 (structure and complete length unknown). Length of body 7.0 mm, of forewing 5.0 mm, of ovipositor about 2.5 mm.

Family: Ephialtitidae HANDLIRSCH, 1906

Subfamily: Ephialtitinae HANDLIRSCH, 1906

GENUS *Cretephialtites* n.gen.

Type species: *Cretephialtites pedrerae* n.sp., Lower Cretaceous of Spain.

Name derivation: After the Cretaceous and genus *Ephialtites* MEUNIER 1903.

Diagnosis: The new genus differs from all other in 2r-m and 3r-m both oblique, sinuate, and in 2m-cu meeting M basad of 2r-m. Position of cu-a at the very point of divergence of M and Cu indicates position of the new genus in the subfamily Ephialtitinae where it is unique in having 2r-m and 3r-m that are both oblique, sinuate, and 2m-cu that meets M basad of 2r-m.

Description: Forewing venation complete except 2r-rs, 1a-2a and 2A absent. RS base directed posterobasad, aligned with M base. 2r-m and 3r-m both oblique, sinuate, 2r-m approaching 2r-rs on RS. 2m-cu meeting M basad of 2r-m.

Species included: Besides the type species, the genus might cover two other species described in *Karataus* RASNITSYN 1977, *K. kourius* SHARKEY 1990 (Darling and Sharkey, 1990) and *K. hispanicus* RASNITSYN AND MARTÍNEZ-DELCLÒS (2000). The former is incompletely described but cannot belong to *Karataus*, because its long ovipositor makes it subordinate to Ephiialtitinae, while the type species of *Karataus*, *K. pedalis* RASNITSYN 1977, belongs to Symphytopterinae RASNITSYN, 1980 because of the distal position of cu-a in respect to apex of M+Cu. Photographs of *K. kourius* (Darling and Sharkey, 1990, figs. 2, 3) probably show oblique 2r-m and 3r-m, the reason to suspect this species to be congeneric with *Cretephialtites* n.gen. "*Karataus*" *hispanicus* has forewings damaged, so as the position of cu-a unknown, but otherwise the venation is almost identical to that of *Cretephialtites*. It was possible to attribute it to *Karataus* because of its short ovipositor, the diagnostic feature of Symphytopterinae. However, its ovipositor is too short even for that subfamily (almost not extending over the abdominal apex), hence a misinterpretation cannot be excluded, particularly, that the ovipositor is broken of, and the valvifer is taken for the whole ovipositor.

***Cretephialtites pedrae* n.sp.**

Figures 3-4

Holotype: Isolated wing (part and counterpart), housed in Paläontologische Museum, Museum für Naturkunde, Humboldt Universität, Berlin, J. Ansoerge collection MA 101.

Type locality: Former quarry La Pedrera de Rúbies in the Montsec de Rúbies mountain range (Province Lleida).

Type horizon: Lower Barremian lithographic limestones, intercalated within freshwater charophytic limestones.

Name derivation: after the type locality, the former quarry La Pedrera de Rúbies.

Diagnosis: As in genus. Differs, from *Cretephialtites?* *kourius* in short RS between 2r-rs and 2r-m, from *Cretephialtites?* *hispanicus* in small size.

Description: Pterostigma parallel-sided, meeting 2r-rs slightly after its midlength. 2r-m meeting RS and M close to 2r-rm and 2m-cu, respectively. 3r-rs subparallel to 2r-m, meeting RS slightly closer to 2r-m than to apex of cell 3r. Cell 2rm almost as long as cells 1+2r and 2m-cu,

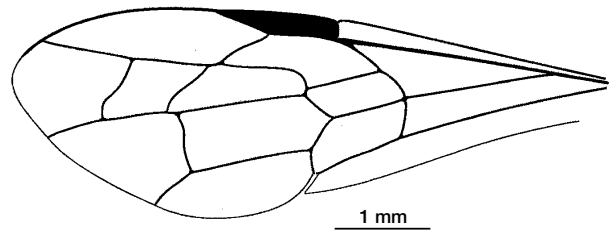


Figure 4. *Cretephialtites pedrae* n.gen., n.sp., drawing of the holotype.

and much longer than each cell 3rm and 1m-cu. Length of forewing 6.3 mm.

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