

The genus *Ischyropsalis* C.L. Koch (Opiliones,
Ischyropsalididae) on the Iberian Peninsula.
II : Troglotic species

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ABSTRACT. Four troglotic species of *Ischyropsalis* are recognized for the Iberian Peninsula: *I. magdaleneae* Simon, *I. dispar* Simon, *I. navarrensis* Roewer (revalidated here) and *I. gigantea* Dresco. *I. noltei* Dresco is synonymized with *I. d. dispar* and *I. espannoli* Dresco with *I. navarrensis*.

INTRODUCTION.

All the 17 species of *Ischyropsalis* recognized by MARTENS (1969, 1973) present troglotic populations but there are different adaptation levels to caves: by example, *I. pyrenaea* is troglotic at low and middle altitudes, but epigeal on the highlands.

There are troglotic species too; MARTENS (1969, 1973) cites six ones: *I. muellneri* Hamann, *I. strandi* Kratochvíl, *I. hadzi* Roewer, *I. ravanuzzi* Roewer, *I. magdaleneae* Simon and *I. dispar* Simon. Except *I. muellneri*, all are strictly localized in small regions from the W-Cantabrian Mountains (*dispar*, *magdaleneae*) and the E-Alps (the remainder). All these species, together with *I. kollari* C.L. Koch, belonging to the *kollari*-group, defined by MARTENS (1969).

From the Iberian Peninsula, besides two species recognized by MARTENS (1969), three new troglotic species were described by DRESKO (1968a, 1968b, 1972): *I. gigantea*, *I. espannoli* and *I. noltei*, of which their status are reviewed. Apart of this, the distribution of *I. magdaleneae* sensu Martens on two small disjunct areas (Galdames Mountains in Biscay and Aralar Massiv in Navarra) is surprising since the troglotic species are restricted to biogeographical units.

Ischyropsalis dispar Simon, 1872 (Figs. 1 a-f, 2 a-c)

- 1872 *I. dispar* Simon, Ann. Soc. ent. France (5)2: 277; 1.12, f. 11-12.
1879 *I. dispar*, - Simon, Arach. France 7: 274.
1881 *I. dispar*, - Simon, An. Soc. esp. Hist. Nat. 10: 128.
1923 *I. dispar*, - Roewer, Weberknechte d. Erde: 687; f. 858.
1935 *I. dispar*, - Roewer, Arch. Zool. expér. génér. 78(1): 83.
1950 *I. dispar*, - Roewer, Senckenbergiana 31(1/2): 44; 1.2, f. 11a-d.
1950 *I. goodnighti*, - Roewer, Senckenbergiana 31(1/2): 31; 1.2, f. 13a-d.
1950 *I. archeri*, - Roewer, Senckenbergiana 31(1/2): 48; 1.2, f. 12a-b.
1962 *I. dispar*, - Nolte, Not. Com. Inst. Geol. Min. Rep. 65: 105.
1969 *I. dispar*, - Martens, Zool. Jb. Syst. Bd. 96: 255; f. 67-68.
1972a *I. noltei* Dresco, Ann. Spéléol. 27(1): 121; f. 1-23.
1972b *I. dispar* Dresco, Ann. Spéléol. 27(2): 351; f. 1-20.
1980 *I. dispar*, - Rambla, Kobie (Bilbao) 10: 530.
1985 *I. dispar*, - Prieto & Zubiaga, Actas II Simp. Reg. Rspel. Burgos: 17; f. 1.

COMMENTS.

This species was mentioned by ROEWER (1935) from the Gorbea Massiv; this record, doubtful for MARTENS (1969), was considered by DRESKO (1972a), together with three other caves from the Gorbea Massiv, belonging to his new species *I. noltei*; it is considered here a new synonym of *I. dispar* although this has already been suggested (PRIETO & ZUBIAGA, 1985). Because of the unpracticable descriptions of ROEWER (1923), RAMBLA (1946)

I. navarrensis (see COMMENTS on this species).

On the other hand, ROEWER (1950) described I. archeri from an undetermined site from "Biscaya", although MARTENS (1969) specifies "San Sebastián", belonging to the Guipúzcoa province, which is situated on the outside of the distribution area of this species. Another species, I. goodnighti, described by ROEWER (1950) from "Vityna, Morea" (Greece), is considered synonym of I. dispar by MARTENS (1969).

DIAGNOSIS (Figs.1 a-f, 2 a-c).

Relatively high ocular tubercle, eye size ≈ 0.15 mm; abdomen with scutum parvum; brown colour in palp. Female: gracile chelicera with 4-5 medium dorsal spines in basal article, dorso-dorsal end with scarce and short hairs; knee with strong tubercles. Male: cheliceral basal article unarmed (only hairs); low-conical apophysis; reduced bursa on the distal protuberance; penis of 3.98-4.83 mm length with enlarged glans.

Fig.1 a-f. Cephalotorax in lateral view (above), cheliceral apophysis and bursa (centre) and cheliceral basal article (below) of I. dispar Simon males. a: Covanegra (306); b: Albia Cave (306); c: Supelegorri Cave (406); d: Larrano lead mine (320); e: Marcos Cave (417); f: Sima RN-30 (410). Scale bar, 2mm.

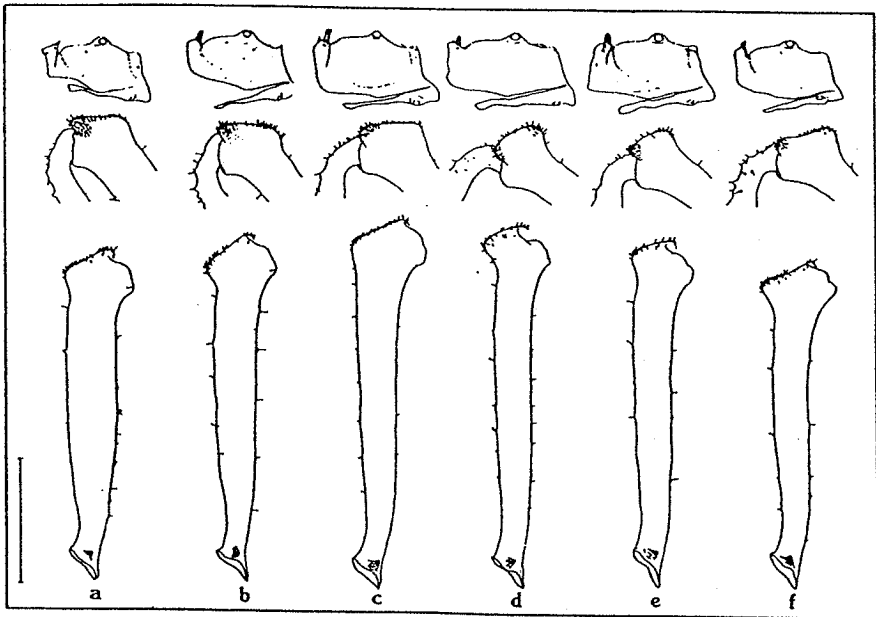
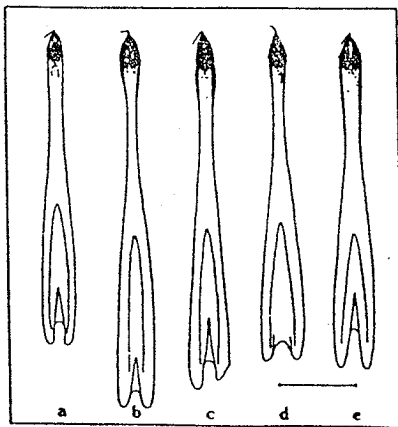


Fig.2 a-e. Penis of Ischyropsalis species. a-c: I. dispar Simon (a, La Lastrilla Cave; b, Supelegorri Cave; c: Larrano lead mine); d: I. magdalenae Simon (Pedro González Mine); e: I. navarrensis Roewer (San Miguel Cave). Scale bar, 1mm.



NEW RECORDS.

BURGOS: Covanegra (Cubillos del Rojo, VN4255, 1020m) <438: rests of 1M>. C. Pañles (Berberana, WN0054, 240m) <437: 2MM; 322: 6MM, 3FF; 303: rests of 3MM, 2FF>. C. Musain (Berberana, VN9855, 880m) <323: 3MM, 3FF; 424: 1F, 1juv>. Sima PZ-2 (Berberana, VN9-5-) <433: 1F>. Surgencia Peña Angulo (VN8-6-) <431: 2MM>. Releje del Zorro (Relloso: VN86) <430: 1M, 1F>. C. Lérdano (Villabasil, VN7367, 1100m) <436: 1F; 117: 1F; 407: 2MM; 408: 2MM, 2FF>. Sima P-3 (Villabasil, VN7-6-) <115: 1M>. C. Albia (Villalba de Losa, VN9-5-) <306: 2MM>. **BISCAY:** Kobaezkutua (Anboto Massiv, WN3270, 1000m) <118: 1F>. Larrano lead mine (Anboto Massiv, WN3172, 970m) <320: 1M, 2FF>. OdiLeza (Anboto Massiv, WN3170, 980m), <420: 1F>. C. Arrizubi (Mañaria, WN2775, 250m) <429: 1M>. C. Marcos (Mañaria, WN2775, 260m) <417: 2MM, 1F>. C. Azkondo (Mañaria, WN2775, 230m) <750: 1juv; MNCN/F87: 1subad>. C. Eskubaratz (Mañaria, WN2674) <MNCN/F87: 1M>. C. San Lorenzo-IV (Mañaria, WN2774, 300m) <425: 1M>. C. Otxas (Yurre: Urkizu, WN1981, 280m) <74: rests of 1M>. C. Supelegorri (Gorbea Massiv, VN1569, 1000m) <27: 1F; 406: 1M>. C. Polvorin (Gorbea Massiv, WN1666, 1100m) <412: rests of 1F, 1juv>. C. Pagolusieta (Gorbea Massiv, WN1964, 1040m) <516: 1F>. **ALAVA:** C. Mairuelegorreta (Gorbea Massiv, WN1963, 880m) <451: 1F; MNCN/F85: 2FF, 1juv>. C. Gorbea-chiqui (Gorbea Massiv, WN1-6-) <MNCN/F84: 1M>. **SANTANDER:** Sima RN-30 (Ranero-Jorrios Massiv, VN6-9-) <410: 1M>. C. La Lastrilla (Castro Urdiales: Sámamo, VP8100, 200m) <426: 1M; 427: 1F>.

GEOGRAPHICAL DISTRIBUTION (Fig.3)

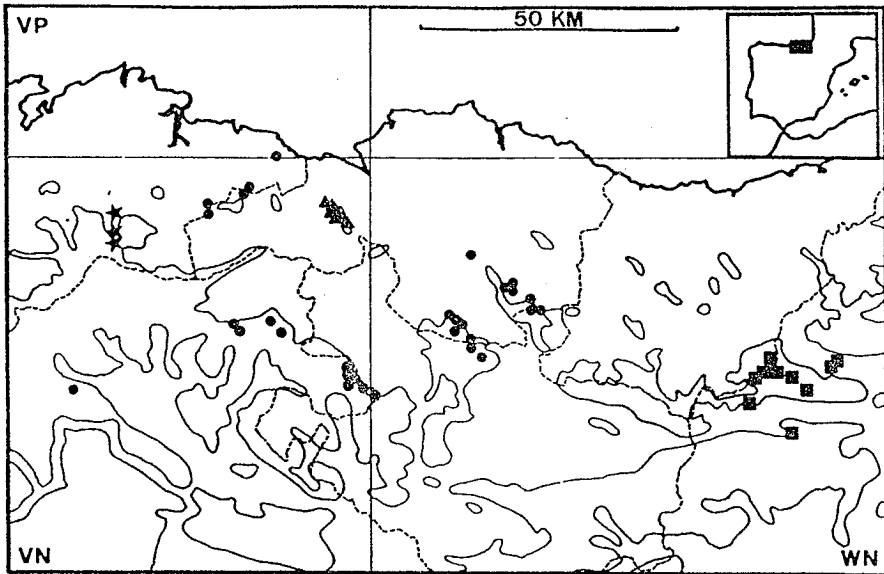
It comprises from the west and the south of Biscay (Ranero-Jorrios, Gorbea, Anboto and Aramotz Massives) to NW-Burgos (Sierra Salvada); moreover, there is an isolated record from 'Cubillos del Rojo: Covanegra' (PRIETO & ZUBIAGA, 1985). Three caves from Ranero-Jorrios Massiv have been reported; the record from Ventalaperra Cave (Carranza) for I. magdaleneae (RAMBLA, 1980) could be related to this species since all three mentioned caves are located on the same massiv; on the other hand, repeated trips to this and next caves have not provided any Ischyropsalis species.

Nine caves from Gorbea Massiv have provided this species; all of them are up to 850m. From Aramotz to Anboto Massive, nine caves have been done I. dispar: the ones from Anboto are situated at 1000m high; the ones from Mañaria are situated at 250-300m high and are shared syntopically with I. nodifera; the last one is from Aramotz Massiv and it is relatively isolated.

The greater zone is Sierra Salvada where I. dispar have been found in ten caves, always up to 800m; six in Orduña Mountains, including the type locality, and four from Mena Mountains.

Finally, there is an isolate population in La Lastrilla Cave, near Castro Urdiales, at low altitude. It is characterized by very despigmented body and legs and small eyes, short penis with robust "neck" and reduced glans (Fig.2 a), delicate and short chelicera, right angle cheliceral apophysis with reduced bursa on distal protuberance.

Fig.3. Distribution map on 100 km UTM grid of cantabrian troglotic species of Ischyropsalis. Inset: position of the investigated area. Closed fine lines are 700m altitudinal lines. I. dispar Simon, dots; I. magdalенаe Simon, triangles; I. navarrensis Roewer, squares; I. gigantea Dresco, stars.



Ischyropsalis magdalенаe Simon, 1881 (Figs.2 d, 4 a-b)

1881 I. Magdalенаe Simon, Ann.Soc.esp.Hist.Nat. 10: 130.

1923 I. madalенаe, - Roewer, Weberknechte d.Erde: 690.

1950 I. madelенаe, - Roewer, Senckenbergiana 31(1/2): 46; 1.46, f.35c-d.

1969 I. magdalенаe, - Dresco, Bull.Mus.Nat.Hist.Nat. (2) 41(4): 854; f.

1980 I. magdalенаe, - Rambla, Kobie (Bilbao) 10: 531; f.2.

COMMENTS.

This species, described from the Galdames Mountains (SIMON, 1881), was erroneously cited from the Aralar Massiv (MARTENS, 1969), where live another similar species, I. navarrensis (see COMMENTS on this species). Simultaneously, DRESKO (1969) redescribes the syntypes and cites two new localities from Galdames too. More recently, RAMBLA (1980) cites I. magdalенаe from two new localities; nevertheless, one of them (Ventaperra Cave) must be considered doubtful because the Ranero-Jorrios Massiv, where it is situated, is inhabited by I. dispar.

DIAGNOSIS (Figs.2 d, 4 a-b).

Low ocular tubercle, eye size ≈ 0.15 mm; honey colour in palp. Female: scutum laminatum and large tergites, very frequently scutum intermedium; cheliceral basal article with 4-5 strong dorsal spines, dorso-distal end with short and scarce hairs; knee with strong tubercles. Male: scutum parvum; cheliceral basal article with small dorsal spines and low-conical apophysis; bursa extended to the median side; penis of 4-4.4 mm length with delicate neck and glans enlarged.

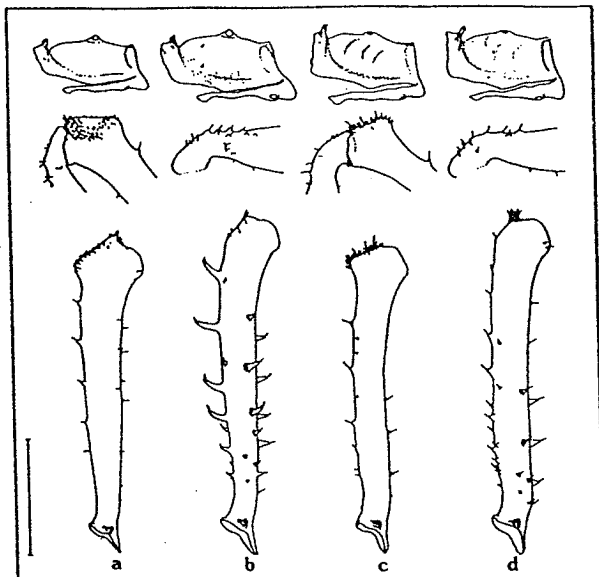
NEW RECORDS.

BISCAY: C.Arenaza (Galdames, VN9289, 190m) <26: 1F>. C.Los Cuervos (Galdames, VN9389, 350m) <116: 1M,2FF; 434: 2FF; 435: 2MM,2FF,1subad; 529: 1F>. C.Murciélagos (Galdames, VN9388, 300m) <72: 1F>. Pedro González Mine (Galdames, VN9290, 340m) <318: 5MM,3FF>. Sima Europa (Galdames, VN9389,360m) <316: 3MM,2FF>.

GEOGRAPHICAL DISTRIBUTION (Fig.3).

The previously known records are restricted to the Galdames Mountains. The new data confirm this area, where I.nodifera lives in caves, although coexistence with I.magdalanae has been reported from Arenaza and Magdalena Caves (SIMON,1981) only.

Fig.4 a-d. Cephalotorax in lateral view (above), cheliceral apophysis, bursa and/or "knee" (centre) and cheliceral basal article (below) of I.magdalanae Simon (a-b: Pedro González Mine, 318) and I.navarrensis Røewer (c-d: Akelar Cave, 321). a,c: males; b,d: females. Scale bar, 2mm.



Ischyropsalis navarrensis Roewer, 1950 (Figs. 2 e, 4 c-d)

- 1946 I. dispar, - Rambla, Pirineos 12: 53; f. 2-4.
 1946 I. helwigi, - Rambla, Pirineos 12: 52; f. 5-6.
 1950 I. navarrensis Roewer, Senckenbergiana 31(1/2): 46; 1.6: f. 35c-d.
 ?1950 I. nicaea Roewer, Senckenbergiana 31(1/2): 36; 1.8: f. 48a-b.
 ?1950 I. turki Roewer, Senckenbergiana 31(1/2): 31; 1.5: f. 27a-d.
 1968 I. espagnoli Dresco, Bull. Mus. Nat. Hist. Nat. (2) 40(5): 962; f.
 1969 I. magdalenae, - Martens, Zool. Jb. Syst. Bd. 96: 252; f. 65-66.

COMMENTS

DRESCO (1968b) described this species as I. espagnoli from E-Aralar Massiv although RAMBLA (1946) already cited it from W-Aralar under I. dispar and I. helwigi. Meanwhile, ROEWER (1950) described I. navarrensis from an undetermined site of Navarre but it was considered synonym of I. magdalenae by MARTENS (1969), together with another two species more (I. nicaea from Nizza, France and I. turki from Agina Inseln, Greece) labeled erroneously. Unfortunately, MARTENS (1969) could not to see material from Galdames (type locality of I. magdalenae) and considered that type material of I. navarrensis (and I. nicaea and I. turki) is belonging to I. magdalenae. In reality, they are two species: I. magdalenae Simon is restricted to Galdames Mountains while I. magdalenae sensu Martens is the Aralar species. As consequence, we propose the name I. navarrensis Roewer for this species since the names turki or nicaea must be avoided because their type localities are false and therefore unknown.

DIAGNOSIS (Figs. 2 e, 4 c-d).

Very low ocular tubercle, eye size < 0.1mm; dark brown palp. Female: scutum laminatum and reduced tergites; cheliceral basal article with 4-6 small dorsal spines, dorso-distal end with long hairs tuft; knee with low tubercles. Male: scutum parvum; cheliceral basal article with 4 small dorsal spines; high conical apophysis with long hairs on dorso-distal side, bursa reduced to the distal protuberance; robust penis of 3.6-4.2mm length with broad neck, hardly enlarged penis with wide ventral sclerites.

The only one male from Artzunbide Cave presents scutum intermedium (1°-3° fused) and divided 4° and 6° tergites.

NEW RECORDS.

NAVARRRE: C. Akelar (Aralar Massiv, WN9060, 640m) <321: 2MM, 1F; MNCN/F84: 1M; MNCN/F85: 4MM, 1F>. C. San Miguel (Aralar Massiv, WN8455, 1200m) <481: 2MM, 1F>. Lezegalde (Aralar Massiv, WN8959, 610m) <304: 1F>. Sumidero Guardetxe (Aralar Massiv, WN8157, 1000m) <480: 1F>. C. Artzunbide (Andia Massiv, WN8146, 1100m) <479: 1M>. Cs. Martinchurito (II, Abajo, Arriba) (Aralar Massiv, WN9-6-) <MNCN/F84: 3MM, 4FF, 1juv>. C. Putxerri (Aralar Massiv, WN7658) <MNCN/F84: 2MM, 2FF, 1juv>. C. Alzoteli (Aralar Massiv) <MNCN/F85: 3MM, 1F, 1juv>. GUIPUZCOA: Elur-Zulo (Aralar Massiv, WN7761, 1130m) <MNCN/F84: 2f>.

GEOGRAPHICAL DISTRIBUTION (Fig. 3).

The previously known records are restricted to Aralar Massiv. The new data confirm and enlarge the distribution area: it also exists in Andia Massiv (Artzunbide Cave). Coexistence of I. navarrensis and I. nodifera has been reported in the Aparein Cave (RAMBLA, 1946).

Ischyropsalis gigantea Dresco, 1968

1968 I. gigantea Dresco, Bull. Mus. Nat. Hist. Nat. (2) 40(2): 308; f. 1-19.

DIAGNOSIS.

High ocular tubercle, eye size \approx 0.15mm; scutum parvum; brown colour

hairs); spherical distal apophysis, bursa without hairs (?); knee without tubercles; penis robust with broad neck. Female: long cheliceral basal article with small dorsal spines, dorso-distal end with long scarce hairs; knee with low tubercles.

COMMENTS.

No material of this species has been collected; nevertheless, the diagnostic characters, after DRESCO (1968), are so distinctive that appears to be a valid species. The known localities (Cañuela, Becerral and La Posadía Caves) are all concentrated on the Asón upper valley (Fig.4).

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