

Cryptops vulcanicus n. sp., a new species from a lava
tube of the Canary Islands
(Chilopoda, Scolopendromorpha)

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ABSTRACT: *Cryptops vulcanicus* n. sp., a new troglitic species from a lava tube of the Canary Islands (Tenerife), is described. The new species seems to be close to *C. canariensis* Latzel, 1895 and to *C. trisulcatus* Brölemann, 1902.

Key words: Chilopoda, Scolopendromorpha, *Cryptops vulcanicus* n. sp., Canary Islands, lava tube.

RESUMEN: Se describe *Cryptops vulcanicus* n. sp., una nueva especie troglítica de una cueva volcánica de Tenerife (Islas Canarias). La nueva especie está próxima a *C. canariensis* Latzel, 1895 y a *C. trisulcatus* Brölemann, 1902.

Palabras clave: Chilopoda, Scolopendromorpha, *Cryptops vulcanicus* n. sp., islas Canarias, cueva volcánica.

INTRODUCTION

During the research carried out by the Departamento de Zoología de la Universidad de La Laguna (Tenerife) on the fauna of the Canary Islands lava tubes (see HERNÁNDEZ, MARTÍN and MEDINA, 1986) a number of centipedes was collected and sent to me for study. Among these specimens is a *Cryptops* belonging to a new species which is described below.

Cryptops vulcanicus n. sp.

DIAGNOSIS

A *Cryptops* s. str., close to *C. canariensis* Latzel, 1895 and to *C. trisulcatus* Brölemann, 1902, about 45 mm long, with elongate articles of appendages (antennae and legs) and slender somites. Cephalic shield with two anterior transversal sutures, T.I with a transverse suture V-shaped and an incomplete short U-shaped suture concave posteriorly and running from the middle of the transverse suture. Prefemur, femur and tibia of last legs with dorsal tubercles at distal extremity. Tibial comb with 13-21 teeth, tarsal comb with 7-8 teeth.

TYPE MATERIAL

Holotypus: 1 ♂, Spain, Canary Islands, Tenerife, Cueva Felipe Reventón, (T-G5-6), 12.III.1986, J.J. Hernández leg., in coll. Departamento de Zoología, Universidad de La Laguna, Tenerife. Paratypus: 1 ♀, Spain, Canary Islands, Tenerife, Cueva Felipe Reventón, (T-G5-6), 3.III.1984, I. Izquierdo, A.L. Medina, J.J. Hernández, G.L. Martín leg., G.I.E.T., in coll. M. Zapparoli.

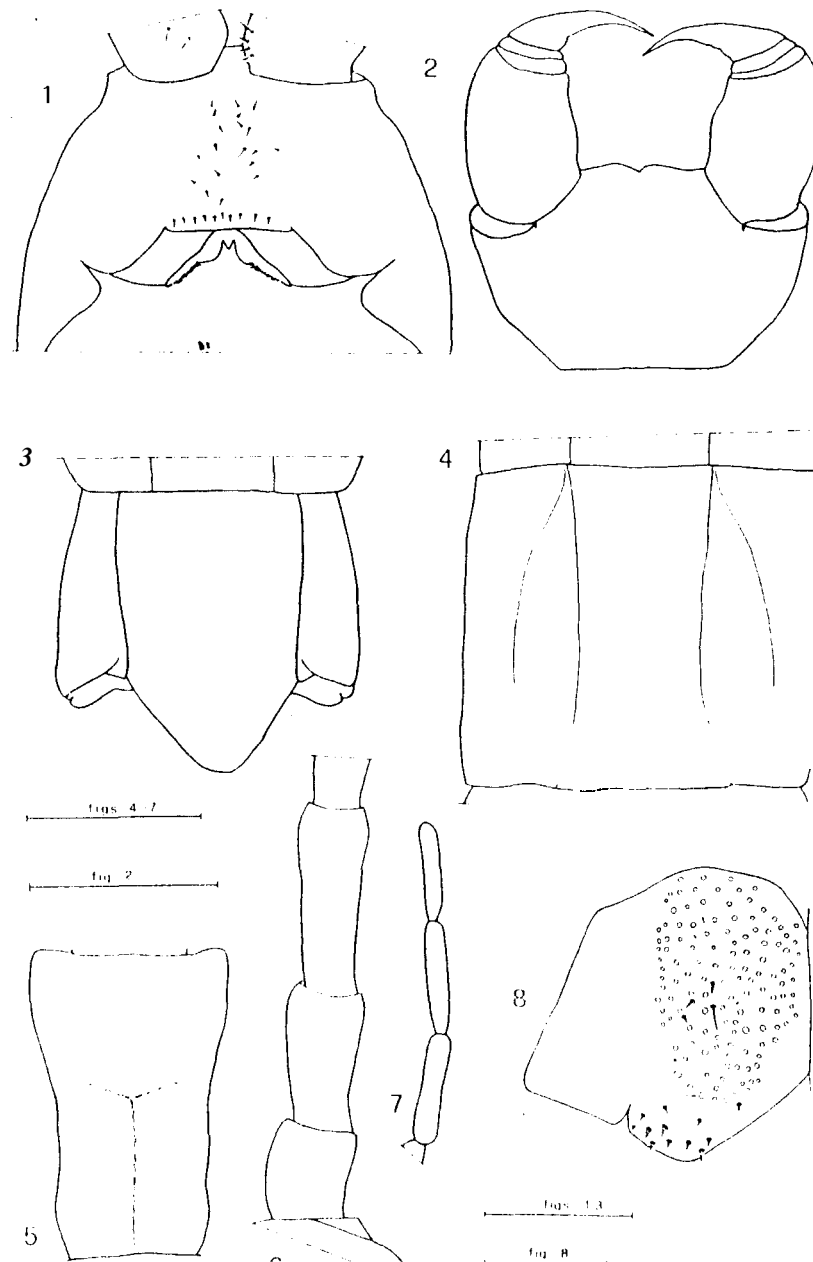
DESCRIPTION

Holotypus. Head and trunk 44.65 mm long; breadth at T.1, 1.70 mm, 1.69 mm at T. 3, 2.06 mm at T. 9. Colour of the tergites and legs pale yellow, sternites lighter, head and forcipules darker.

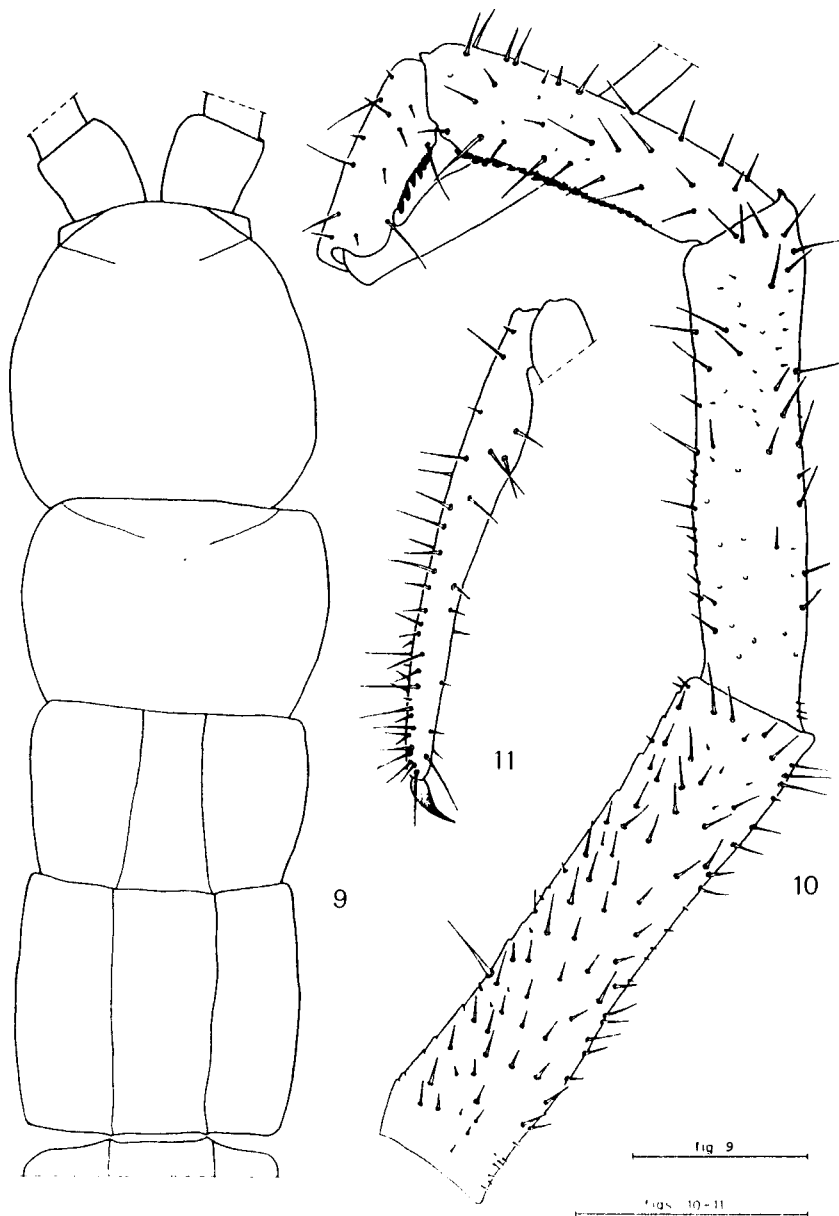
Head oval, 1.89 mm long, 1.74 mm broad. Cephalic shield (Fig. 9) sparsely and slightly punctate, with two incomplete and almost transverse sutures, extending 0.32 mm backwards from bases of antennae and posteriorly convergent, no longitudinal sutures from the posterior border. Antennae 15-16 mm long (Figs. 6-7), each with 17 very elongate articles (length in mm: 1st, 0.50; 2nd, 0.80; 3rd-12th, 1.0-1.1; 13th, 0.85; 14th-15th, 0.75; 16th, 0.65; 17th, 0.50; breadth in mm: 1st, 0.5; 2nd, 0.45; 3rd, 0.40; 4th, 0.35; 5th, 0.30; 6th-9th, 0.25; 10th-11th, 0.20; 12th-13th, 0.15; 14th-17th, 0.10); articles 1st-6th with a whorl of rare and slender setae, articles 3rd-6th with a whorl of rare and slender setae only on the proximal part, articles 7th-17th each with a basal ring of slender setae; articles 3rd-17th clothed with short setae, very minute and numerous. Clypeus (Fig. 1) well defined anteriorly, with a group of about twelve short intermediate setae and a row of ten setae along the posterior border, just in front of the labrum; post-antennary setae absent. Labrum (Fig. 1) with side-piece not notched at their medial angle. Forcipular coxosternite (Fig. 2) with anterior border slightly rounded and barely protuberant with a clear medial notch and without setae on either side; sparse slender setae on the femoroid of the forcipulae; poison claw with a group of 6-7 slender setae in the medial part and with a weak basal notch; poison gland situated on a level with the distal part of the femoroid; forcipular coxosternite posteriorly prolonged by an endosternite with two points.

TT. 2-4 broader than long, TT. 5-20 longer than broad. T.1 (Fig. 9) 2.55 mm long; anterior border overlapping the posterior margin of cephalic shield; a transverse suture, V-shaped and anteriorly deeply concave, is present, the medial outline of this suture appears less incised. An incomplete short suture, U-shaped and posteriorly concave, runs from the middle of the transverse suture. TT. 4-20 with straight anterior transverse suture; TT. 2-20 with two complete longitudinal paramedial sutures (Fig. 9); TT.4-20 with one arcuate incomplete suture (with internal concavity) on each side (Fig. 4), those of T.3 very short; lateral longitudinal sutures and arcuate sutures absent; T.21 narrow, with posterior border projecting in a blunt angle, without sutures and with a longitudinal medial depression on its posterior half (Fig. 3). Sternites 2-20 with longitudinal cruciform impression (Fig. 5); endosternites well developed from S.1 to S.3, posterior angles rounded; first two trunk segments with metacoxa and suprasternite fused together and separated from the corresponding sternite; anterior sternites without cruciform transverse sutures anteriorly of the endosternites; S.21 with convergent margins and posteriorly rounded. Tergites with very rare, thin setae, sternite with sparse setae.

Legs slender and relatively long: 10th legs 4.15 mm long (not including coxa and trochanter): prefemur, 1.05 mm; femur, 1.10 mm; tibia, 1.25 mm; tarsi, 1.50 mm; claw, 0.25 mm. Posterior and ventral face of 1st-20th prefemur, femur and tibia recovered by sparse setae: setae of 1st-4th legs numerous, the setae are progressively less



FIGS. 1-8. *Cryptops vulcanicus* n. sp., Holotypus: clypeus and labrum (1); forcipules (2); last tergite (3); T.3 (4); 5.3 (5); 1st-3rd (6) and last three (7) antennal articles; coxal pores (8). Scales: figs. 1, 3, 8 mm 0.5; figs. 2, 4-7 mm 1.0.



FIGS. 3-11. *Cryptops vulcanicus* n. sp., Holotypus; head and TA. 1-3, habitus (9); prefemur, femur tibia and tarsus of 21st right leg, internal view (10); pretarsus of 21st right leg, internal view (11). Scale: 1 mm.

numerous from 5th to 20th legs. Tarsi with sparse and more slender setae, a double row of seriate setae on the ventral face of 2nd-20th tarsi is also present; 1st-19th tarsi-metatarsi fused, 20th legs with functional tarsus-metatarsus articulation.

Last legs (Figs. 10-11) 9.2 mm long: prefemur, 2.4 mm; femur, 2.1 mm; tibia, 1.6 mm; tarsus, 0.9 mm; pretarsus, 2 mm; apical claw, 0.2 mm. Cribriform area of the coxae (Fig. 8) not extended to the posterior border of the coxae itself, 4-5 slender setae interspersed among the pores, a row of 8-10 small spinose setae along the posterior border of the coxae. Prefemur and femur with spinose setae more or less long, setae are much numerous on ventral and lateral side, less numerous or absent on dorsal side; tibia, tarsus and metatarsus with rare and very slender setae, longer than spinose setae of prefemur and femur; apical claw well developed and without basal sensory spur. Tibial comb with 13 (left)-18 (right) small teeth, closely set and partially overlapped in the proximal half, well spaced in the distal half; tarsal comb with 7 well developed teeth, the distal 4-5 teeth well spaced. Dorsal tubercles on the distal extremity of prefemur (internal side), femur (both sides, internal tubercle smaller than external) and tibia (both sides).

Paratypus. A not fully developed specimen, differing from holotypus in the following main features.

Tergites and legs yellowish-white, sternites lighter, head and forcipules darker. Head+trunk 30.90 mm long, breadth at T.1, 1.25 mm, 1.10 mm at T.3, 1.60 mm at T.9. Head 1.55 mm long, 1.35 mm broad. Antennae 13.50 mm long. Anterior border of T.1 not overlapping the posterior margin of the cephalic shield; transverse U-shaped sulcus not well evident. Endosternites of SS. 1-4 relatively developed. 10th legs 4 mm long: tibial comb with 21 teeth, larger and closely set the six most distal teeth, smaller and well spaced the others; tarsal comb with 8 teeth, well spaced the most distal three, more or less fused together the most proximal three.

DERIVATIO NOMINIS

Named after the habitat in which the new species has been found.

ECOLOGICAL REMARKS

The Felipe Reventón Cave is one of the most interesting lava tube of Tenerife Island, 600-650 m above s.l., about 3000 m long (OROMÍ, HERNÁNDEZ, MARTÍN and LAINEZ, 1985), located near the small town of Icod de los Vinos, near the northern coast. After WOOD and MILLS (1977) the cave, together with the Cueva del Viento (11.1 km long after P. OROMÍ in litteris, 1989), the longest of the Tenerife lava tubes, and the Cueva de San Marcos (18 km long after MARTÍN, OROMÍ and HERNÁNDEZ, 1986), is part of a vast underground network.

The geological map of Tenerife drawn by CARRACEDO GÓMEZ (1980) shows the volcanic formations (extrusive) of the area in which the cave is located as belonging to the late volcanic activity of the island (few thousand of years old). See also OROMÍ, HERNÁNDEZ, MARTÍN and LAINEZ (1985) for the geology of the Felipe Reventón cave.

From a faunistic point of view the Felipe Reventón cave is well known. up to date 43 species are recorded, which 14 are troglitic and 8 trogliphilic (HERNÁNDEZ, IZQUIERDO, MEDINA and OROMÍ, 1985). Another troglitic centipede, *Lithobius speleovolcanus* Serra, 1984, previously recorded for two lava tubes of Tenerife, Cueva del Viento (type locality) and Cueva de los Roques (SERRA, 1984), was also collected in this cave (M. ZAPPAROLI, unpublished data).

TAXONOMICAL REMARKS

The morphological features of *C. vulcanicus* n. sp., especially the elongation of the somites, the antennal articles, the legs and setae, characterize this species as a specialized cave-dweller, a very rare condition not only in Cryptopidae but also in the whole Chilopoda.

Up to date, only two Ci-yptopidae are recorded as specialized troglotic: *Cryptops (Trigonocryptops) longicornis* Ribaut, 1915, recorded only for some S-Spain caves, recently redescribed and discussed in SERRA (1981 and 1985), and *Thalkehoas grallatrix* Crabill, 1960, from a cave of New Mexico (USA).

At this moment it is difficult to state the precise phylogenetic relationship between *C. vulcanicus* n. sp. and the other W-palearctic congenric species. The most recent general taxonomic arrangements of the *Cryptops* of this region, published by ATTEMS (1910) and by VERHOEFF (1911), are today very insufficient. Moreover, our knowledge of the *Cryptops* of the Canary Islands is still defective and based essentially on the old general works of LATZEL (1895), BRÖLEMANN (1900) and ATTEMS (1911). The species known as certain for this area are *C. canariensis* Latzel, 1895, fully redescribed in ZAPPAROLI (1989), endemic to the archipelago and recorded in Gran Canaria, Tenerife and Fuerteventura (BRÖLEMANN, 1900; KRAEPELIN, 1904; ATTEMS, 1930; ZAPPAROLI, 1989), the W-Mediterranean *C. trisulcatus* Brölemann, 1902, close to the former species and recorded in Gran Canaria, Tenerife and Gomera (KRAEPELIN, 1904; ATTEMS, 1911; ZAPPAROLI, 1989), and the W-palearctic *C. hortensis* Leach, 1814, with the macaronesian subspecies *atlantis* Pocock, 1891, recorded in Gran Canaria and Tenerife (BRÖLEMANN, 1300).

A series of morphological features of *C. vulcanicus* n. sp., such as the shape of the labrum, the dorsal sutures on the cephalic shield and on the tergites, and the tubercles at the distal extremity of the last prefemurs, femurs and tibiae, suggest close relation to *C. canariensis* and *C. trisulcatus*. *C. vulcanicus* n. sp. may be easily distinguished from these two species essentially by its peculiar general habitus and by the characters listed below.

	<i>C. vulcanicus</i>	<i>C. canariensis</i>	<i>C. trisulcatus</i>
Max. body length	44.65 mm	33 mm	35 mm
Cephalic sutures	only anterior	incomplete or only few anteriorly produced	incomplete
N° clypeus intermediate setae	10 pairs	2-3 pairs	3-4 pairs
Setae on prosternum	absent	present	present
T.1 longitudinal sutures	incomplete and convergent	incomplete or complete	complete and generally convergent
Coxosternum	barely protuberant	somewhat protuberant	somewhat protuberant
Anterior border of coxosternum	almost straight	rounded	rounded

N° of tibial comb teeth	13-21	3-13	9-13
N° of tarsal comb teeth	7-8	4-5	4-5
Position of last legs tubercles (e=external side, i=internal side)	prefemur (i), femur and tibia	prefemur (e), femur and tibia	prefemur (e) and femur

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Breve nota sobre el Roque Grande de Salmor (El Hierro, Islas Canarias) y su población de *Gallotia galloti caesaris* (Lehrs 1914) (F. Lacertidae)

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ABSTRACT: The floristic and faunistic communities of Roque Grande de Salmor off the North coast of El Hierro is described. In the highest part of the islet, a small previously unrecorded population of *Gallotia galloti caesaris* has been found.

Key words: Flora, fauna, *Gallotia g. caesaris*, Roque Grande de Salmor, El Hierro. Canary Islands.

RESUMEN: Se ofrece una somera descripción florística y faunística del Roque Grande de Salmor (El Hierro), constatándose la presencia de una pequeña población de *Gallotia g. caesaris* localizada en la parte superior del mismo.

Palabras clave: Flora, fauna, *Gallotia g. caesaris*. Roque Grande de Salmor. El Hierro. Islas Canarias.

Situados frente a la Punta de Arelmo, en la región septentrional de la Isla de El Hierro, los Roques de Salmor y el conjunto de bajas próximas, constituyen un grupo de cinco islotes principales de pequeña superficie, alineados en dirección NW-SE (Fig. 1).

Tanto HAUSEN (1973) como PELLICER (1977) consideran que son testigos erosivos que deben su origen a un manto de traquitas intercaladas entre coladas basálticas. Del conjunto de islotes, destacan por sus mayores dimensiones el Roque Grande (distante unos 350 m. de la costa) y el Roque Chico, separado unos 330 m. del anterior. Una descripción detallada de este último es aportada por MACHADO (1985).

El Roque Grande es un pitón espectacular de 2,8 Has., cuyo relieve viene definido por dos elevaciones, una de 104 m. y otra de 36 m., en medio de las cuales existe una pequeña depresión erosiva abierta hacia el NW, donde se ha acumulado gran cantidad de bloques procedentes de desplomes. Esta zona —junto con la del NE— se ve notoriamente afectada por el oleaje durante los temporales de invierno.

En general, la vegetación de estos enclaves —al igual que la de otros pequeños islotes de la geografía insular— es de reducido porte quedando incluida en la franja halófilo-costera y piso basal. Estas plantas se encuentran sometidas a una alta luminosidad, concentración salina elevada y escasas precipitaciones hídricas. Habiéndose constatado para el Roque Grande los siguientes taxones: *Reichardia cristallina*, Aizoon canariense. *Chenoleoides fomenlosa*, *Lotus glaucus*, *Polycarpha divaricata*, *Wahlenbergia lobelioides*, *Asparagus cf. umbellatus*, *Forsskaolea cf. angustifolia*, *Aeonium palmense*, *Che-nopodium murale*, *Kleinia neriifolia*, *Frankenia cf. ericifolia*, *Mesembryanthemum cristallinum*, *Mesembryanthemum nodiflorum*, *Asfydamia latifolia*, *Patellifolia cf. patellaris* y *Nicotiana glauca* *.

Además de estas fanerógamas —algunas de las cuales podrían formar parte de la dieta de los lagar-

* Las paternidades de los taxones vegetales se corresponden con HANSEN & SUNDING (1985)