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THE GENUS *HERPISTICUS* GERMAR, 1823 FROM THE CANARY ISLANDS (COLEOPTERA: CURCULIONIDAE: ENTIMINAE: TANYMECINI)

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ABSTRACT

The taxonomic review of the genus *Herpisticus* Germar, 1823, endemic to the Canary Islands, is undertaken with support of molecular data (mtCOI). The morphological study includes the description of the larva and pupa of this genus. To the 5 previously known species, 20 taxa have been added, comprising the resurrection of *H. eremita* var. γ *lanatus* Wollaston, 1864 as valid species, *H. grancanariensis* Palm 1974 as valid subspecies of *H. subvestitus* Wollaston, 1864, and the following new taxa: *H. famarae* **n. sp.** from Lanzarote; *H. betancuriae* **n. sp.**, *H. jandiensis* **n. sp.** and *H. rectipes* **n. sp**. from Fuerteventura; *H. subvestitus pseudolanatus* **n. ssp**., *H. guanarteme* **n. sp.**, *H. denudatus* **n. sp.**, *H. gigas* **n. sp.**, *H. guayarmina* **n. sp.**, *H. tasarticus* **n. sp.**, *H. scopulus* **n. sp.**, and *H. nanus* **n. sp**. from Gran Canaria; *H. daute* **n. sp.** and *H. aridicola* **n. sp.** from Tenerife; *H. gomerensis* **n. sp.**, *H. hispidus* **n. sp.** and *H. bobadillae* **n. sp.** from La Gomera; and *H. hierrensis benahoare* **n. ssp.** from La Palma. Except for the subspecies *H. hierrensis hierrensis*, which is present on the islands of El Hierro and La Palma, all the other taxa are mono-insular endemics. Identification keys (♂), distribution maps, and photographs of imagos of all 25 taxa are provided, as well as some general comments on the biology of the group, its potential as agricultural pest, and conservation perspectives.

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Keywords: COI; conservación; crop pest; description; DNA; larvae; mitochondrial introgression; new species; phylogeny; pupa; taxonomic review.

RESUMEN

El género *Herpisticus* Germar, 1823 de las islas Canarias (Coleoptera: Curculionidae: Entiminae: Tanymecini)

Se revisa la taxonomía del género *Herpisticus* Germar, 1823, endémico de las islas Canarias, con el apoyo de datos moleculares (mtCO1). El estudio morfológico incluye la descripción de la larva y pupa del género. A las cinco especies conocidas, se han añadido veinte taxones, que comprenden la resurrección de *H. eremita* var. γ *lanatus* Wollaston, 1864 como especie válida y *grancanariensis* Palm 1974 como subespecie válida de *H. subvestitus* Wollaston, 1864, además de los siguientes taxones nuevos: *H. famarae* **n. sp.** de Lanzarote; *H. betancuriae* **n. sp.**, *H. jandiensis* **n. sp.** y *H. rectipes* **n. sp**. de Fuerteventura; *H. subvestitus pseudolanatus* **n. ssp**., *H. guanarteme* **n. sp.**, *H. denudatus* **n. sp.**, *H. gigas* **n. sp.**, *H. guayarmina* **n. sp.**, *H. tasarticus* **n. sp.**, *H. scopulus* **n. sp.** y *H. nanus* **n. sp**. de Gran Canaria; *H. daute* **n. sp.** y *H. aridicola* **n. sp.** de Tenerife; *H. gomerensis* **n. sp.**, *H. hispidus* **n. sp.** y *H. bobadillae* **n. sp.** de La Gomera; *y H. hierrensis benahoare* **n. ssp.** de La Palma. Salvo *H. hierrensis hierrensis*, todos los taxones son endemismos monoinsulares. Se presentan claves para la separación de machos las 25 especies y subespecies, mapas de distribución de todas ellas, fotografías del imago y algunos comentarios sobre la biología del grupo, su potencial como plaga agrícola y las perpectivas de conservación.

Palabras clave: COI; conservación; descripción; DNA; filogenia; introgresión mitocondrial; larva; nuevas especies; plaga agrícola; pupa; revisión taxonómica.

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Introduction

Herpisticus weevils are large Tanymecini endemic to the Canary Islands, where they live in the open dry or semi-dry habitats of the lowlands and mountains, avoiding the shady and humid forest environments. The first known species was described from the island of Tenerife as *Curculio eremita* by Olivier (1807), without noticing that the same name was already used by Herbst (1784) for a species from Germany, at present considered as *nomen dubium* (f. Alonso-Zarazaga *et al.*, 2017). Germar (1823) established the genus *Herpisticus* with type species *H. laesicollis* from Tenerife (Fig. 1), which was considered a junior synonym of *H. eremita* Olivier by most authors (e.g. Winkler, 1932; Machado & Oromí, 2000) despite Schoenherr (1833) having already pointed to the previous homonymy of *C. eremita* and the validity of the name *H. laesicollis.*

T. Vernon Wollaston (1864), who established the foundations of the Canarian Coleopteran fauna (f. Machado, 2006), described two further species from the eastern islands Lanzarote and Fuerteventura: *H. oculatus* and *H. calvus*. This British entomologist was much intrigued by the variation of "*H. eremita"*, which inhabited the other islands, and particularly those specimens from the island of Gran Canaria showing great geographical variation in body pilosity. On that island he recognised a var. *α typical,* a var. *ß subvestita,* and a var. *γ lanata*, but he stated that all transitional stages between them could be found, and that "it is impossible therefore to look upon them as more than topographical varieties brought about by surrounding circumstances and the more or less calcareous nature of the regions in which they occur."

In the mid 20th century, several authors (Uyttenboogaart, 1937, 1940; Lindberg & Lindberg, 1958, etc.) recorded *Herpisticus* profusely and commented also on its variation, not being fully convinced about the identification of the taxa sampled. Indeed, Uyttenboogaart (1940) considered *H. calvus* and *H. oculatus* as extreme cases within the great variation of *H. eremita;* two synonyms proposed that have been basically overlooked or misinterpreted. Palm (1974), who provided the first identification key for the genus, studied its variation and noticed that specimens of "*H. eremita*" from Gran Canaria were clearly different from those of Tenerife in the shape of their aedeagus, and he described *H. grancanariensis* stating also the morphological transition between localities, as Wollaston did (*op. cit.*). However, he overlooked that the name *subvestitus* Wollaston, 1864 (type locality Tirajana) was already available for specimens from Gran Canaria (Palm`s type is from Tafira), thus

Fig. 1.—*Herpisticus laesicollis* Germar, 1823 (= *eremita* Olivier, 1807) on *Aeonium urbicum* L.

Fig. 1.—*Herpisticus laesicollis* Germar, 1823 (= *eremita* Olivier, 1807) sobre *Aeonium urbicum* L.

creating a new synonym that was later noticed and registered by Machado & Oromí (2000), and followed by later authors.

The Austrian entomologist Herbert Franz (1979) described *H. hierrensis* based on a single female from Las Playas, on the island of El Hierro, recording at the same time the presence of "*H. eremita*" in the north of the island. However, in his final compilation of the coleopteran fauna of this island (Franz, 1996) he assumes that all *Herpisticus* from El Hierro –including also those recorded by Lindberg & Lindberg (1958)– belong to *H. hierrensis*, its type being erroneously referred to as male.

Stüben (2014b) designated lectotypes of Wollaston's taxa and highlighted the urgent need to revise this endemic genus in this and other publications on the curculionid fauna of the islands (Stüben & Behne, 2013, 2015, etc.), particularly after comparing a few COI sequences from specimens originating from Gran Canaria, Tenerife, and La Gomera. Previously, Schütte *et al.* (2013) included these sequences in a large ambitious molecular analysis of Curculionoidea, where they cluster with Sitonini and a few *Otiorhynchus*. However, this was in a node with a Bayesian posterior probability of 56, which is absolutely non-significant (the whole phylogram has low basal resolution for Curculionidae clades). The filiation of *Herpisticus* with other Tanymecini remains unresolved.

The last published taxonomic framework for the genus *Herpisticus* is provided by Alonso-Zarazaga *et al.* (2017), which is identical to that included in the «*Catalogue of Palearctic Coleoptera*» (Ren *et al.,* 2013).

H. oculatus Wollaston, 1864	Lanzarote
H. calvus Wollaston, 1864	Lanzarote, Fuerteventura, and
H. subvestitus Wollaston, 1864	Gran Canaria
= *grancanariensis* Palm, 1974	Gran Canaria [Tenerife
= *lanatus* Wollaston, 1864	doubtful]
H. laesicollis Germar, 1823	El Hierro, La Palma, La
= *eremita* Olivier, 1807	Gomera, and Tenerife
(*Curculio*)	[Fuerteventura doubtful]
H. hierrensis Franz, 1979	El Hierro

The island distribution shown here has been taken from Machado & Oromí (2000), with the addition of some doubtful records pending confirmation. In fact, the knowledge of the genus, both from the taxonomic and chorological point of view, is far from satisfactory. Therefore, the aim of the present contribution is to revise both aspects of this difficult genus with the concurrence of molecular data obtained from DNA extracted from specimens collected in all islands.

Material and methods

Material examined. This study is based upon examination of 2782 specimens collected by the first author or borrowed from several institutions and colleagues. The abbreviations used for the collections are the following:

AAC = Coll. Agustín Aguiar Clavijo. La Laguna, Spain.
AMC = Coll. Antonio Machado Carrillo. La Laguna, Spain.
DSR = Coll. Daniel Suárez Ramos. La Laguna, Spain.
DZUL = Department of Zoology, University of La Laguna. Spain.
EC = Coll. Enzo Colonnelli. Roma, Italy
FMNH = Finnish Museum of Natural History (Coll. Lindberg), Helsinki, Finland.
HLH = Coll. Heriberto López Hernández. La Laguna, Spain.
JC = Coll. Jiří Krátký. Hradec Králové, Czech Republic.
MAAZ = Coll. Miguel Ángel Alonzo-Zarazaga. MNCN (CSIC), Madrid, Spain.
MAPE = Coll. Miguel A. Peña Estévez. Telde, Spain.
MLUZS = Martin-Luther-Universität Zoologische Sammlung. Halle, Germany.
MNCN = Museo Nacional de Ciencias Naturales (CSIC). Madrid, Spain.
NHM = The Natural History Museum. London, United Kingdom.
NMNH = National Museum of Natural History "Naturalis". Leiden, The Netherlands.
NMW = Naturhistorisches Museum Wien. Vienna, Austria.
OK = Coll. Ondrej Konvička. Zlín, Czeck Republic.
POM = Coll. Pedro Oromí Masoliver. La Laguna, Spain.
PST = Coll. Peter Stüben, Mönchengladbach, Germany.
RGB = Coll. Rafael García Becerra. Santa Cruz de la Palma, Spain.
RVLL = Coll. Roberto Valle Llarena. La Laguna, Spain.
TFMC = Museo de Ciencias Naturales. Santa Cruz de Tenerife, Spain.
ZFMK = Zoological Research Museum Alexander Koenig. Bonn, Germany

The majority of specimens of *Herpisticus* in the MNCN (Madrid) do not bear collector names. However, in accordance with the collecting dates or handwriting, they have been attributed to M. Anatael Cabrera, who donated his collection to the MNCN, and others to M. Manuel Martínez de la Escalera (leg. M. Escalera) if the dates fall between December 1920 to June 1921 (see Izquierdo, 2011).

The following island symbols are used (e.g. last digit in voucher numbers or as prefix) to denote island origin of the specimens or of the locality referred to:

C = Gran Canaria
F = Fuerteventura
G = La Gomera
H = El Hierro
L = Lanzarote
P = La Palma
T = Tenerife

Colour codes used for the same purpose in the phylogram are explained in its legend. The map of the Canary Islands in Fig. 2 shows for each island its age (Ma) in blue (Carracedo & Troll, 2016) and the final number of *Herpisticus* species in black.

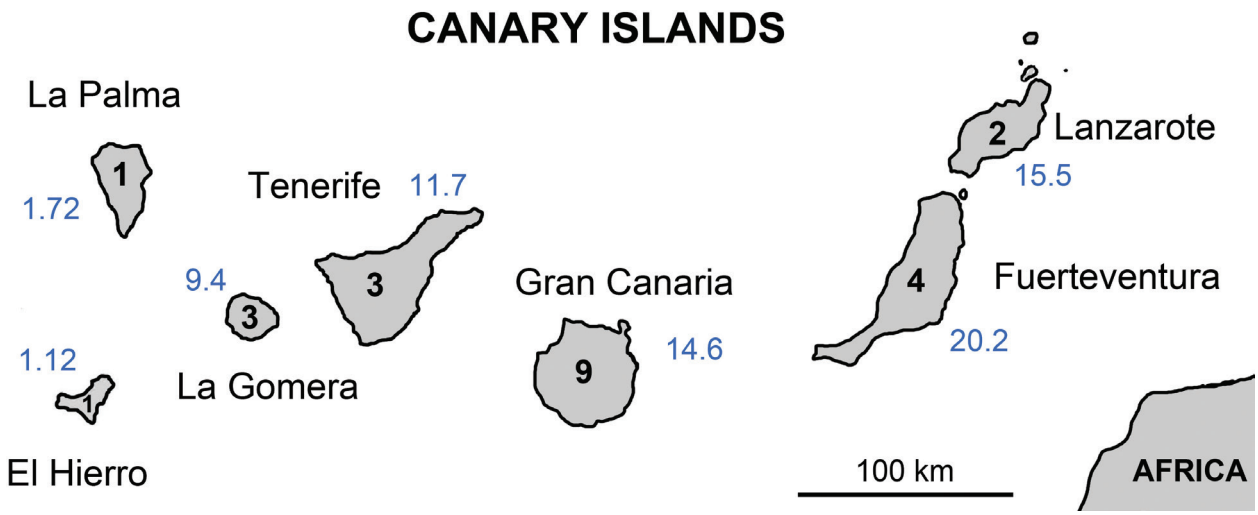


Fig. 2.—The Canary Islands: number of *Herpisticus* species in black; age of island in Ma in blue.

Fig. 2.—Las islas Canarias: número de especies de *Herpisticus* en negro; edad de las islas en MA en azul.

In the list of synonyms and references that follow each taxon, references to figures have been included except when hyperlinks to the same figures appear repeated in several works of the same author (e.g. P. Stüben) as collateral information.

The distribution maps of *Herpisticus* species have been prepared with the software QGIS V. 3.4.6-Madeira, using the base topographic map 1:20,000 provided by the Canary Islands Spatial Data Infrastructure (www.idecanarias.es/listado_servicios), as well as the geological maps and Canarian network of protected areas used for overlap analysis.

Morphology. Dissections were done according to standard entomological techniques. For the eversion of the endophallus the method of Van Dam (2014) was followed, after maceration of the penis in pancreatin (Alvarez-Padilla & Hormiga, 2008). Photographs were taken with a Canon EOS 6D digital camera equipped with macro-lens MPE65. The program Zerene Stacker was used for stacking the digital photos and Photoshop Elements for final retouching. Drawings were made using a camera lucida attached to a Leitz microscope or to an Olympus SZX12 stereo microscope, and measurements were taken with an eyepiece micrometer. Symbols L, W and H used in ratios (e.g. L/W) refer to length, width and height, respectively. Body size is expressed as length of specimen × maximum width of elytra, in millimetres. Length of specimens is measured without rostrum (*s.r.*) in dorsal view, from the anterior margin of eyes to apex of elytra. Length of antennal club is measured including the attached desmomere 7. Rostral width was measured perpendicular to its dorsum across the straight-line tangent to the anterior margin of eyes (base of rostrum), and rostral length from this line to its apex (mandibles excluded). Eye convexity is expressed as the percentage of a theoretical complete ellipsoid or globe emerging from the profile of the head capsule; thus, a 50% convexity would mean a hemispherical protruding eye, a 10% a fairly flat eye, etc. It is obtained by observing the eye in profile – perfectly tangent to the head capsule– and dividing its maximum height by its length. Length of elytra is measured from their apex to the base of scutellum (tangent with a line uniting both humeri). Abdominal transverse convexity (H/W) is determined by dividing the maximum height between elytra and ventrites in lateral view by the maximum width of the elytra measured in dorsal view (both measurements at metacoxal level). The length of the hair is considered from its base to its most distant part, compared with the length of a tarsal claw as reference. Apex of the penis is considered from the level of the distal margin of the ostium to the distal tip of the tube.

A detailed redescription of the genus is provided, while for each species a brief description suffices, centred in the diagnostical characters. These descriptions are based on males, with comments on the female at the end. The morphological terms used follow Marshall (1916) and Machado (2010).

The description of the preimaginal stages is based on a few larvae obtained in the field and one pupa (reared) of *Herpisticus subvestitus pseudolanatus* n. ssp. For drawing purposes, the pupa has been stretched slightly and the left pterotheca separated from the body. Terms and abbreviations for the setae in larvae follow Marvaldi (1997, 1999b) and for pupae Gosik & Sprick (2013). Numbers of paired setae are given with a vertical bar separating the set of each side (e.g. 7|7) and an addition in brackets may reflect the clusters (e.g. 2+2) in one set.

Larval chaetotaxy:

als = anterolateral setae (epipharynx)
ams = anteromedian setae (epipharynx)
as = alar setae

ds = dorsal setae
des = dorsal epicraneal setae
dms = dorsal malar setae
eus = eusternal setae
fs = frontal setae
ld = labral dorsal setae
les = lateroepicraneal setae
lgs = ligular setae
lms = labral setae
lsts = laterosternal setae
mes = median epipharyngeal setae
mds = mandibular setae
pda = pedal setae
pds = postdorsal setae
pfs = palpifer setae
pms = postmental setae
prms = premental setae
prns = pronotal setae
prs = prodorsal setae
ps = pleural setae
sps = spiracular setae
sts = sternal setae
ss = stipital setae
ts = terminal setae
vms = ventral malar setae

Pupal chaetotaxy:

as = apical setae
d = dorsal setae
ds = discal setae
es = epistomal setae
fes = femoral setae
ls = lateral setae
os = orbital setae
pas = postantennal setae
pc = pseudocerci
pls = posterolateral setae
rs = rostral setae
sls = supralateral setae
sos = supraorbital setae
v = ventral setae
vms = ventral malar setae
vs = vertical setae

Other abbreviations:

Ab = abdominal segment
at = antenna
lr = labral rods
sp = spiracle
Th = thoracic segment
I-X = number of segments
st = stemmata

Molecular analysis. DNA was extracted from one leg of ethanol-preserved or just killed specimens using Chelex extraction protocol (Casquet *et al*., 2012). A fragment of the mitochondrial gene cytochrome oxidase I (COI) was amplified and sequenced following López *et al.* (2007) with primers and polymerase chain reaction conditions indicated therein. Sequencing was performed by the Sanger DNA sequencing service of Macrogen Europe in Madrid. Sequences were viewed, edited and assembled using MEGA7 software (Kumar *et al.,* 2016). Alignments were achieved using the program Muscle (Edgar, 2004), with default parameters as implemented in MEGA 7 and adjusted by eye. The plausibility of the alignment was verified at the amino acid level. The Xia *et al.,* test (Xia & Lemey, 2009) as implemented in DAMBE7 (Xia, 2018) was used to assess substitution saturation within the sequences, with negative results. K2P distances were calculated with MEGA7. Phylogenetic relationships were reconstructed using Bayesian Markov chain Monte Carlo inference (Yang & Rannala, 1997) as implemented with MrBayes 3.2.3 (Ronquist *et al.,* 2012) and applying default parameters. The TIM1+I+G model obtained with jModelTest 2.1.4 (Darriba *et al.,* 2012) as the best nucleotide substitution model for our dataset was considered in MrBayes with the command lset nst = 6 rates = invgamma. Full convergence was tested with Tracer v1.6 (Rambaut *et al.,* 2014). The BI final phylogram was edited with TreeGraph 2 (Stöver & Müller, 2010) and nodes supported with less than 0.90 Bayesian posterior probabilities (bpp) have been collapsed.

Our set of *Herpisticus* sequences (718 bp) are registered in GenBank (www.ncbi.nlm.nih.gov/Genbank) with accession numbers: MN432522–MN432597 and MN709122. Ten additional sequences (labelled with prefix-PST) obtained under "The Molecular Weevil Identification Project" (Schütte *et al.,* 2013), were generously provided by Dr. P. Stüben and A. Schütte. Voucher codes preceded by DNA (highlighted in red) and followed by their Genbank accession numbers are included in the Material Examined section of each taxon. All *Herpisticus* species are present in the dataset, except *H. gigas* n. sp. (DNA extraction from museum specimens failed). Some redundant sequences have been discarded from the final dataset, which finally totalled 84 OTUs.

Sitona lineellus (Bonsdorff, 1785) from Finland (downloaded from GenBank KJ962739.1) was finally used as outgroup (genetic K2P distance to *Herpisticus* 21.0-27.3%). We tested a *Molybdotus vermiculosus* (C.O. Waterhouse, 1881) a Tanymecini from Yemen (Aloove area, Hassan vill. env., 221 m, 10-11-2010, leg. P. Hlaváč; GenBank MN432595) and *Coniatus tamarisci* (Fabricius, 1787) from Gran Canaria (La Aldea, El Charco 5 m. 26-4-2019 leg. A. Machado; GenBank MN432594), but they were discarded due to long branch attraction effects, possibly related with their greater genetic distance (24.3 - 36.5% and 26.2 - 34.9%, respectively).

Species delimitation. Tanymecini weevils are known for their morphological variability, which obviously does not facilitate species delimitation under morphological criteria. Therefore, a fragment with 617 base-pairs from the mitochondrial cytochrome c oxidase 1 gene (COI) –widely used in the DNA

barcoding initiative (Hebert *et al.,* 2003)– has been chosen to assist in unveiling the species delimitation within *Herpisticus*. Pentinsaari (2016) found an average 11.99% K2P distance between nearest neighbours in a dataset of 1872 coleopteran species, which dropped down to 10.63% when 363 species were added (values in other arthropod groups like Lepidoptera were much lower: 5.73%). The latter threshold of 10.63% was initially used to postulate species boundaries in our study, combined with the morphological and geographical analysis.

Common names. Spanish official common names of *Herpisticus* species have been taken from Machado & Morera (2005), but as there are many more species recognised according to the present study, new common names are proposed following the same naming criteria adopted in the referred work, which include several amendments to lend coherence to the complete set. It is convenient to have vernacular names for weevil species that are large and visible, and may become agricultural pests or be of conservation interest.

Plant species. Plant species full names are listed in family alphabetical order in the 'Additional remarks' chapter, section of 'Food plants'.

Genetic results

Between group and within group mean K2P distances are compiled in Appendix 1. The phylogram obtained is shown in Fig. 3, with nodes below ppb 0.90 collapsed. Resolution is good at leaf level and almost non-informative at root level. To infer the basal phylogeny of this genus other more conservative markers should be added to the dataset, but this is beyond the purpose of this study focused on taxonomy.

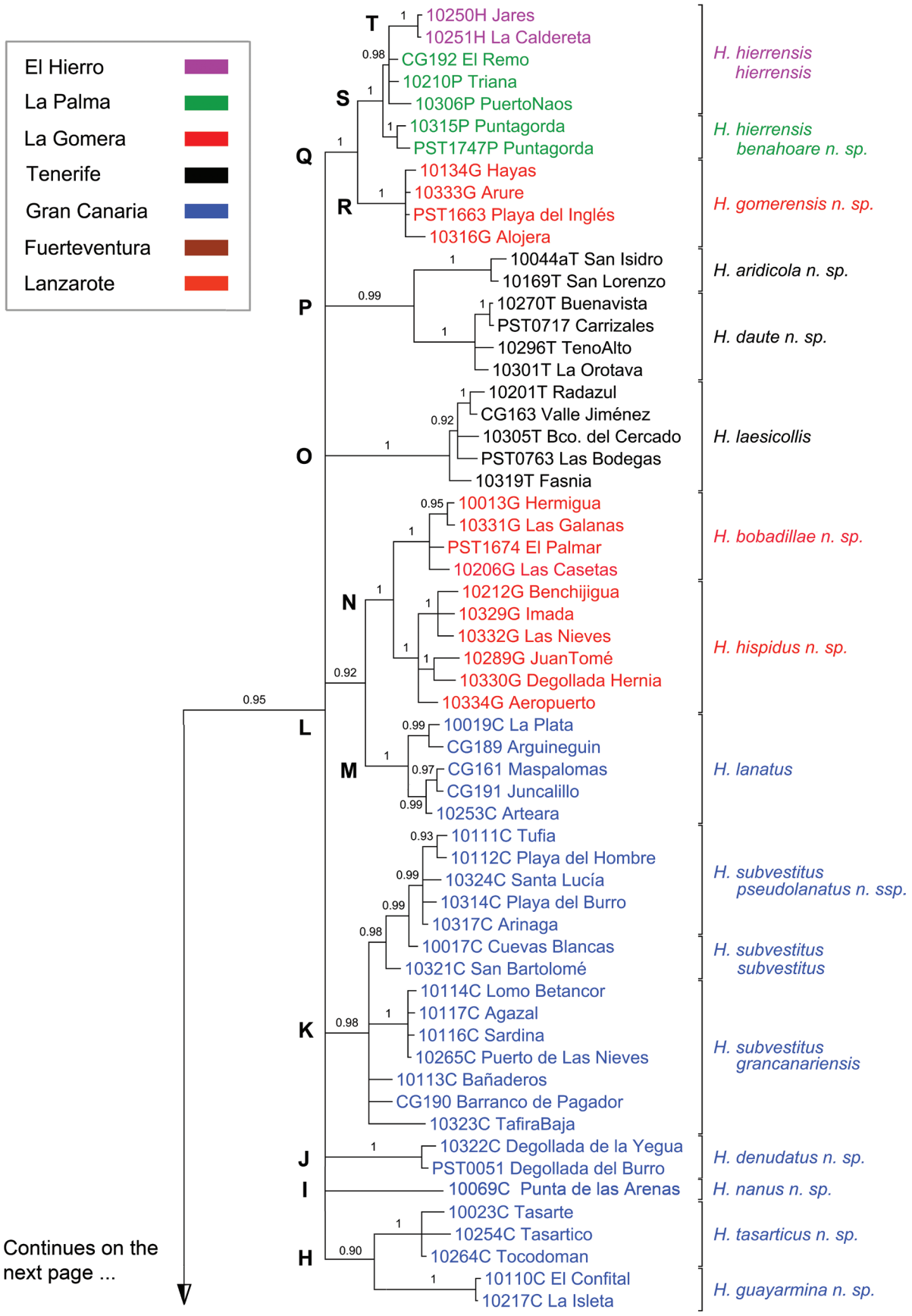
Without further basal resolution, the 83 OTUs cluster first into seven clades that converge at the basal node G, covering clades A, B, C, and D species from the eastern islands, clade E and F two species from Gran Canaria, and clade K –with eight subclades– the rest of species from Gran Canaria and the western islands. For reference purposes, clades have been ordered and labelled from A to T according to the decreasing age of the islands (Lanzarote-Fuerteventura > Gran Canaria > Tenerife > La Gomera > La Palma > El Hierro) as it is likely that with more resolution they will reflect a similar step-wise colonisation pattern from East to West, as stated for several arthropod groups and particularly for other entimine weevils like Cryptorhynchinae (Stüben & Astrin, 2010) or *Laparocerus* (Machado *et al*., 2017).

The overall mean K2P distance in the dataset is 12.4% and between the recognised groups 13.2%, suggesting an old origin for the genus *Herpisticus*. Considering the p-distance and applying the general ratio of 2.6% per My for protein-coding mtDNA (Pons *et al.,* 2010) to the most divergent OTUs (15.86%) between *Herpisticus calvus* from Caleta de Fuste in Fuerteventura and *H. hispidus* n. sp. from Benchijigua in La Gomera), a rough age estimate of 6.1 My is obtained for the initial radiation (or colonisation) represented by the basal node G.

The between-group mean distances of most clades are well above the 10.63% threshold, and a few a little less (8.3-9.8%), despite these OTUs coming from different islands, being morphologically distinct and attributable to separate species. Moreover, clades C, H, M+N, P and Q further split into subclades with either high distances (> 8.5%) representing species, or in the range of 5-7%, which ought to be interpreted as subspecies, taking into account that the intra-locality divergence in this genus may be high, as observed in three specimens of *H. calvus* from Barranco de la Torre, in Fuerteventura (1.5-3.7%).

Clade C from Fuerteventura splits into an almost cryptic species (> 10% distance, *H. betancuriae* n. sp.) and the *Herpisticus calvus* subclade with divergent subpopulations in the northern, central, and southern sectors of the island (distances 4.8-6%), but they are impossible to distinguish morphologically. Thus, we refrain from establishing subspecific taxa. Surprisingly, the southern cluster of *H. calvus* includes two sequences of a morphologically completely different and sympatric species, *H. rectipes* n. sp, possibly due to a mitochondrial introgression or to incomplete lineage sorting (see remarks under that species). A future analysis with nuclear markers would help to unveil this striking case.

Clade K corresponds to *Herpisticus subvestitus* with four apparently allopatric subpopulations (distances 4.6-7.2%). The nomino-typical *subvestitus* clusters with specimens that look like *H. lanatus*, but are not. In fact, *H. lanatus*, a former synonym of *H. subvestitus,* separates with distances of 8.8-9.4% as clade M. Therefore, in order to highlight these relations in the complex of *H. subvestitus* s.l., we recognise a *H. subvestitus pseudolanatus* n. ssp., while resurrecting *grancanariensis* (also a former synonym of *subvestitus*) as a single subspecies covering the northern sector of Gran Canaria, despite its splitting genetically –4.6% distance– in a northeastern (Tafira type locality) and northwestern subclade (Sardina, Agazal, etc.) west of the ravine of Azuaje (see remarks under that subspecies). It is also worth noting that clade K shows distances in the same range as *H. lanatus*, with other clades from Gran Canaria representing clearly morphologically differentiated species, like clade J (*H. denudatus* n. sp.), clade H (*H. guayarmina* n. sp. + *H. tasarticus* n. sp.) or clade I (*H. nanus* n. sp.), but also from other islands, like in the Gomeran clade N (particularly with *H. bobadillae* n. sp.).



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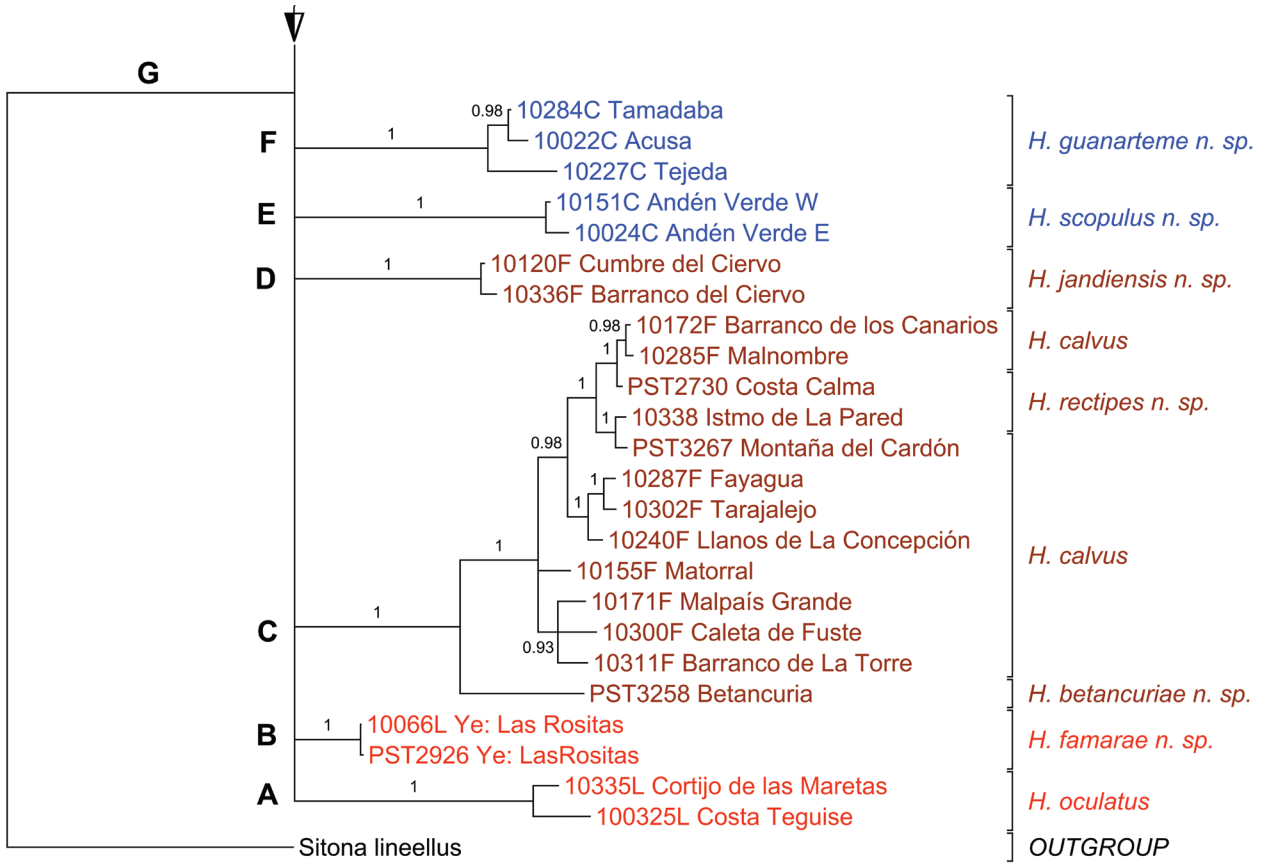

Fig. 3.—Bayesian 50% majority rule consensus tree for COI (618 bp) of genus *Herpisticus* Germar, 1823. Nodes showing Bayesian posterior probabilities. Total of 84 OTUs including one outgroup.

Fig. 3.—Árbol filogenético de consenso bayesiano (regla de mayoría del 50%) para la COI (618 pb) del género *Herpisticus* Germar, 1823. Los nodos muestran la probabilidad posterior bayesiana. Total de 84 OTU incluyendo un grupo externo.

The Gran Canarian clade H splits into two species (*H. tasarticus* n. sp. - *H. guayarmina* n. sp., distance 10.8%), and the same does the Gomeran clade N (*H. bobadillae* n. sp.- *H. hispidus* n. sp., distance 8.3%). However, a third Gomeran species, *H. gomerensis* n. sp. (clade R) joins with taxa from El Hierro and La Palma (clade S), the youngest islands. Based on COI, clade Q is indeed the only one present on more than one island. Moreover, the clade S representing *H. hierrensis*, has a really low internal genetic distance of 2.7%, but splits into two subgroups, one present on El Hierro and La Palma (clade T), and the other exclusively from La Palma (see remarks ahead). In constrast with their meaningless genetic divergence, the specimens can easily be separated by their elytral pilosity. Therefore, we have established *H. hierrensis benahoare* n. spp. for the latter subpopulation as consistent with the differentiation observed in pilosity in the other *Herpisticus* species. It is clear that it is a more recent event in this case.

The previous paragraphs reflect the eclectic approach adopted in this base study, in which we have flexibilised the boundaries of genetically delimiting species to an 8.3% divergence in order to be consistent with the morphological evidence and the chorological information available to date. On the other hand, we have established subspecies only if strictly necessary to accomodate taxa already described or for solving a potential source of confusion (*H. lanatus / H. subvestitus pseudolanatus* n. ssp.).

Having set a taxonomic blueprint for *Herpisticus*, deeper genetical studies should address a reliable chronogram and the complete phylogeography of this difficult but highly interesting group of Entiminae. Did the many *Herpisticus* species arise from a single initial star-shape radiation, or was it a step-wise colonisation from East to West accompanied by a progressive insular differentiation? Will the three species from Tenerife (clades O and P) cluster together as the morphology suggests? Are there more species or subspecies genetically supported that merit description? Was La Gomera colonised from Tenerife or from Gran Canaria, which is a far more distant island? Is *H. rectipes* n. sp. a recent case of rapid morphological adaptation fostered by a habitat shift or is it an old species with the mitochondria borrowed from sympatric *H. calvus*? Is there hybridization between *H. subvestitus* and *H. tasarticus* n. sp. or with *H. guanarteme* n. sp.? These are challenging questions for future studies.

Taxonomy

Family Curculionidae Latreille, 1802
Subfamily Entiminae Schoenherr, 1823

Tribe Tanymecini Lacordaire, 1863
Subtribe Piazomiina Reitter, 1913

Genus ***Herpisticus*** Germar, 1823[1]

Herpisticus Germar, 1823: 413; Alonso-Zarazaga & Lyal, 1999: 180; Ren *et al.*, 2013: 394; Alonso-Zarazaga *et al*., 2017: 381.
= *Herpysticus* Schoenherr, 1833: 10 [unjustified emendation], 255.
= *Herpysticus* Gemminger, 1871: 2216 (non Schoenherr, 1833).
= *Herpistichus* Faust, 1897: 343 [unjustified emendation].
= *Herpysticus* Germar in Dejean, 1834: 248; Wollaston, 1864: 369.

Type species. *Herpisticus laesicollis* Germar, 1823 (monotypy).

Diagnosis. Body length ♂ 7.5-16.3 mm, ♀ 8.4-18.6 mm; elongate-oval. Vestiture of round or somewhat polygonal scales in varied colours and more or less developed pilosity. Rostrum without dorsal ridges; scrobes deep, curving downwards with upper margin pointing mid of eye, and tangential to it. Eyes large, little or moderately protruding, with wide posterior orbital margin. Mandibles with distinct raised apical scars. Prementum polysetose, entirely covering maxillary palps. Antennal scape clavate, reaching backwards mid of eye; funicle with a 6-segmented appearance (desmomere 7 much enlarged and closely applied to the club). Antero-lateral margin of prothorax with short vibrissae and without ocular lobes; front coxae contiguous. Elytra truncate at base, with raised rim that protrudes laterally as humeral tooth; no humeral callus. Metathoracic wings absent. Metaepisternal suture complete. All tibiae mucronate, protibiae with denticles on inner edge; metatibial corbels open, ascending, with long fringe of setae on outer edge, void of scales; claws fused. Penis with bubble-type endophallus bearing apical cup-like transfer apparatus with a free seminal bulb (gonoporum on distal end).

Redescription of imago (♂). Robust large-sized short-nosed weevil (length s.r. 7.5-16.3 mm). Body more or less oval-elongate to oblong, with flat dorsal profile (in lateral view) and evenly declivous apically. Abdominal transversal convexity at metasternum level, varying among species and sexes (H/W 0.69-0.82). Integument piceous-black, shiny, with overall cover of dense appressed small roundish or polygonal scales (occasionally oval on underside of head), usually showing a flattish granuliform texture when scales are missing; antennae and tibial corbels free of scales (at most a few scales at proximal end of corbels on the area free of internal setal fringe). Scales of varied colours (white, grey, beige, testaceous, green, blue, glaucous, pink, brown, or coppery), sometimes with metallic hue, but scaling dominantly brown, testaceous or cinereous, forming mottled or variegate patterns, rather variable; scales often dehiscent (or not completely formed?). Base of head (incl. occiput), interior of scrobes, anterior and posterior margins of prothorax, and integument of pieces eventually covered by other pieces (prescutum, margin of mesosternum, parts of coxae, epimera, etc.) beset with minute flat soft feather-like whitish scales. Vibrissae short, limited to the lower front margin of prothorax, increasing in length downwards but rarely reaching the eye. Vestiture of small curved or recurved setae combined in cases with longer emergent hairs (from bare to very hairy appearance).

Head. Rostrum longer than head and continuous with it, never longer than wider (L/W 0.74-0.97), without additional subsidiary carinae above the scrobes or internally along the epifrons; scrobe very deep and curved downwards before the large eyes (upper margin pointing mid of eye and tangent to it); mandibles plurisetose, with briefly pedunculated oval antero-lateral scars; pterygiae not protruding, in some species scrobes hardly visible from above; epistome V-shaped, epistomal keel little developed; rostral sulcus narrow and deep, more or less prolonged (reaching level of middle or posterior margin of eyes), often partially hidden by scales. Prementum triangular, shortly pedunculated, entirely covering maxillary palps; with 4-6 or more setae (Fig. 5B). Maxilla with small galea area (densely beset with setae), 3-4 lacinial teeth, third and second maxillary palps with 1 and 2 setae respectively (Fig. 5A). Eyes lateral, large, slightly oval or round (L/W 1.00-1.16), more or less prominent (convexity 16-34%), with posterior orbital margin (as broad as 3-4 ommatidia diameter). Antennae short; scape about

Fig. 4.—Head of *Herpisticus denudatus* n. sp. in lateral view (Gran Canaria: Degollada de la Yegua).

Fig. 4.—Cabeza de *Herpisticus denudatus* n. sp. en visión lateral (Gran Canaria: Degollada de la Yegua).

[1]Bousquet (2016) corrected the year of publication of this genus, which was traditionally considered to be 1824.

half the length of flagellum, not exceeding middle of eye in backward position, slender and slightly bent at base, thereafter more or less incrassate towards apex (clavate); desmomeres 1-2 subequal, elongate and longer than the others; 3-6 shorter and more rounded distally, 7 much enlarged, obconical and closely applied to the club, forming part of it to some extent (funicle with 6-segmented appearance); club fusiform, maximum twice as broad as desmomere 6 (Fig. 5C).

Pronotum little transverse (L/W = 0.8-0.9), widest at middle, before it or near base; with more or

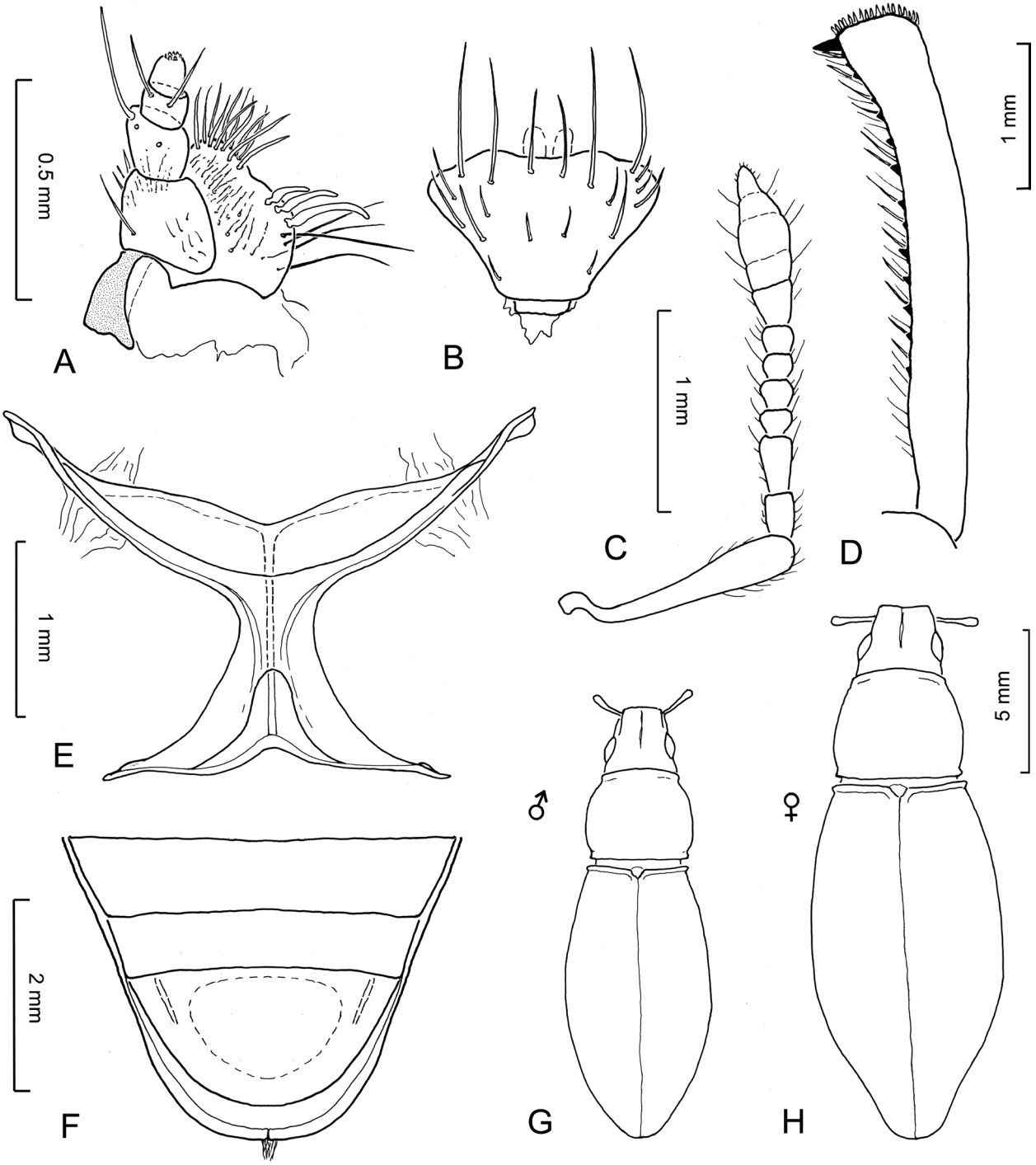

Fig. 5.—Anatomy. *Herpisticus subvestitus pseudolanatus* **n. ssp**. **A** = left maxilla in dorsal view and, **B** = prementum.— *H. laesicollis*, **C** = antenna. **D** = protibia (mucro and dents in black), **E** = metendosternite, **F** = female ventrites, **G** = male body shape, and **H** = female body shape.

Fig. 5.—Anatomía. *Herpisticus subvestitus pseudolanatus* **n. ssp**. **A** = maxilla izquierda en visión dorsal y **B** = prementum.— *H. laesicollis*, **C** = antena. **D** = protibia (mucro y dentículos en negro), **E** = metendosternito, **F** = ventritos de la hembra, **G** = habitus del macho y **H** = habitus de la hembra.

less developed collar and basal rim forming narrow grooves, more developed laterally and usually vanishing towards middle; posterior angles more or less clearly toothed; disc usually with two pairs of impressions or pits (sometimes almost obsolete), the first pair more separated; median line usually incomplete or missing; a transverse irregular deep flexuous groove or line on each side of disc, near middle, and in cases a lateral single pit almost on the margin (these sculptural features vary and are often partially hidden by the scales, being less conspicuous).

Scutellum triangular more or less pointed or U-shaped, broader or narrower, usually beset with whitish scales.

Elytra straightly (occasionally concavely) truncated at base, elongate (L/W 1.6 -1.9), more or less oval, blunt or acuminate apically, without shoulders, widest usually at middle; lateral margin briefly but clearly emarginated above the mesocoxae (to accommodate the epimeron), and more or less sinuous above the metaxocae; base not much broader than that of pronotum, without humeral callus, elevated as prominent flange (at least laterally) which protrudes on the sides as a humeral tooth; apical declivity smooth (in some species, apex in lateral view somewhat reflexed); striae marked by large deep punctures (looking smaller if scales present) separated less than one puncture diameter; interstriae flat or subconvex.

Metathoracic wings absent.

Ventral parts. Prothorax with basal and anterior sulci distinct; a deep groove in the middle of the flanks above the coxae; procoxae contiguous, twice as separated from posterior margin as from anterior: mesocoxae separated by 1/3 of their diameter and inter-mesocoxal process little elevated, trapezoid and narrow; metepisternite distinct (not fused posteriorly); metacoxae reaching metepisternite and margin of elytra; para-metacoxal sulcus marked, integument more or less abruptly inflated before it. Metendosternite (Fig. 5E) with furcal arms widely open (150º), about twice as broad than at base; stalk broad, laterally strongly concave; longitudinal flange 0.7× length of furcal arms; crux at 2/3 from base; hemiducti little developed, positioned at apical third.

Anterior margin of ventrite 1 between metacoxae about as broad as one metacoxa: ventrite 2 along midline a little shorter than ventrite 1 (0.8-0.9×) and longer than ventrites 3 and 4 combined (1.7-2.0×); suture 1 strongly bisinuate (in some specimens very shallow at middle); ventrites 1 and 2 notably and widely depressed along midline; ventrites 3-5 with anterior margin sulcate almost across entire width of abdomen; ventrite 5 slightly truncated apically.

Legs slender and long (metafemora reaching or exceeding apex of ventrite 2); femora unarmed, moderately clavate (profemora usually thickened); protibiae (Fig. 5D) with apex only projecting inwards (outer angle blunt) –except in *H. rectipes*– with strong narrow mucro partially covered by a tuff of thick setae converging on it (triangular appearance); protibiae more or less bent inwards anteriorly, 5-16 short denticles along their inner edge (usually alterning in size and in some species reduced to a crenulation), with setae attached to them not so thick and conspicuous as in *Molybdotus*; meso- and metatibiae with or without denticles or crenulation; metatibial corbels open, devoid of scales, ascending, with conspicuous large setal fringe on outer edge (0.20 - 0.24× length of tibia). Tarsi robust, covered with dense fine setae dorsally and thick soles underside; tarsomere 2 as broad as tarsomere 1 but shorter (about 0.6×), tarsomere 3 as long as 2 but much broader; claws simple, connate at base.

Male genitalia and terminalia. Sternite VIII (Fig. 6F) formed by two transversal arcuate wing-like hermisternites with setae variable in numbers and size, connected by short membrane bearing a bifurcate spiculum relictum, sclerotised only at end of arms; sternite IX (spiculum gastrale) completely arcuate or only at apical third, with short tricuspid basal plate. Aedeagus (Fig. 6D-E) shorter than half length of abdomen; penis tube as long or longer than temones (0.98-0.60×), in lateral view more or less arcuate and strongly curved towards base; lateral margins parallel at middle (in some species somewhat diverging at ostium level) and moderately depressed (H/W 0.56-0.72); apex more or less reflexed (lateral view); internal sac (Fig. 7A) short, not surpassing middle of temones in relaxed state, of the "bubble-shaped" type (Arzanov, 2003) when everted, as follows: short tubular basal area beset with an ostiolar sclerite and strongly hook-like protruding bifid ligula, broad medial area globular or slightly bilobed (trapezoidal-shape) without conspicuous bumps, and apical area tube-like (constricted at base) without bumps and bearing distally a cup-like transfer apparatus (Fig. 7B) formed by two semiclosed capsules with complex pleats inside, which hold a free (detachable?) elongate sclerotised seminal bulb with spermal duct at proximal end and gonopore at thinned distal end. Tegmen (Fig. 57) about as long as penis tube; ring generally narrow with more or less develop short median dorsal projection between parameres (variable); parameres 0.4-0.5× length of terminal apodeme, partially sclerotised along midline; apodeme Y-shaped at base, shortly expanded at apex. Tegminal membrane attached to base of penis tube 1/3-1/2 of its length.

Females (Fig. 5H) as males (Fig. 5G) but larger and broader (body length s.r. 8.4-18.6 mm), with pilosity less developed in many species; elytra proportionally longer in relation to pronotum (♀ > 3.1×; ♂ <2.9×)—one exception *H. denudatus* n. sp (♀ = 2.9-3.0×)—and much broader than pronotum, usually noticeable enlarged behind middle and more acuminate, with tip of apex sometimes uplifted; punctures of striae often smaller; legs normally a little less robust and protibiae less

bent; denticles on inner edge often more reduced, particularly in meso- and metatibiae. Tarsi less robust in many species. Ventrites 1 and 2 usually less depressed at middle; ventrite 4 usually rounded apically, with more or less impressed basal grooves parallel to the lateral margins (Fig. 5F), similar to those depicted for *Geotragus brevidens* Ren, Alonso-Zarazaga & Zhang, 2013 in Ren *et al.* (2013). Spiculum ventrale of moderate length (Fig. 8D), with thin and straight apodeme; plate fused (more or less sclerotised), roundish or triangular in shape, about 0.5-0.6× length of the entire sternite, beset of abundant hairs on its apical margin. Ovipositor very short (Fig. 8A-8C), as wide as long, about half length of spiculum ventrale; gonocoxite 1 membranaceous, gonocoxite

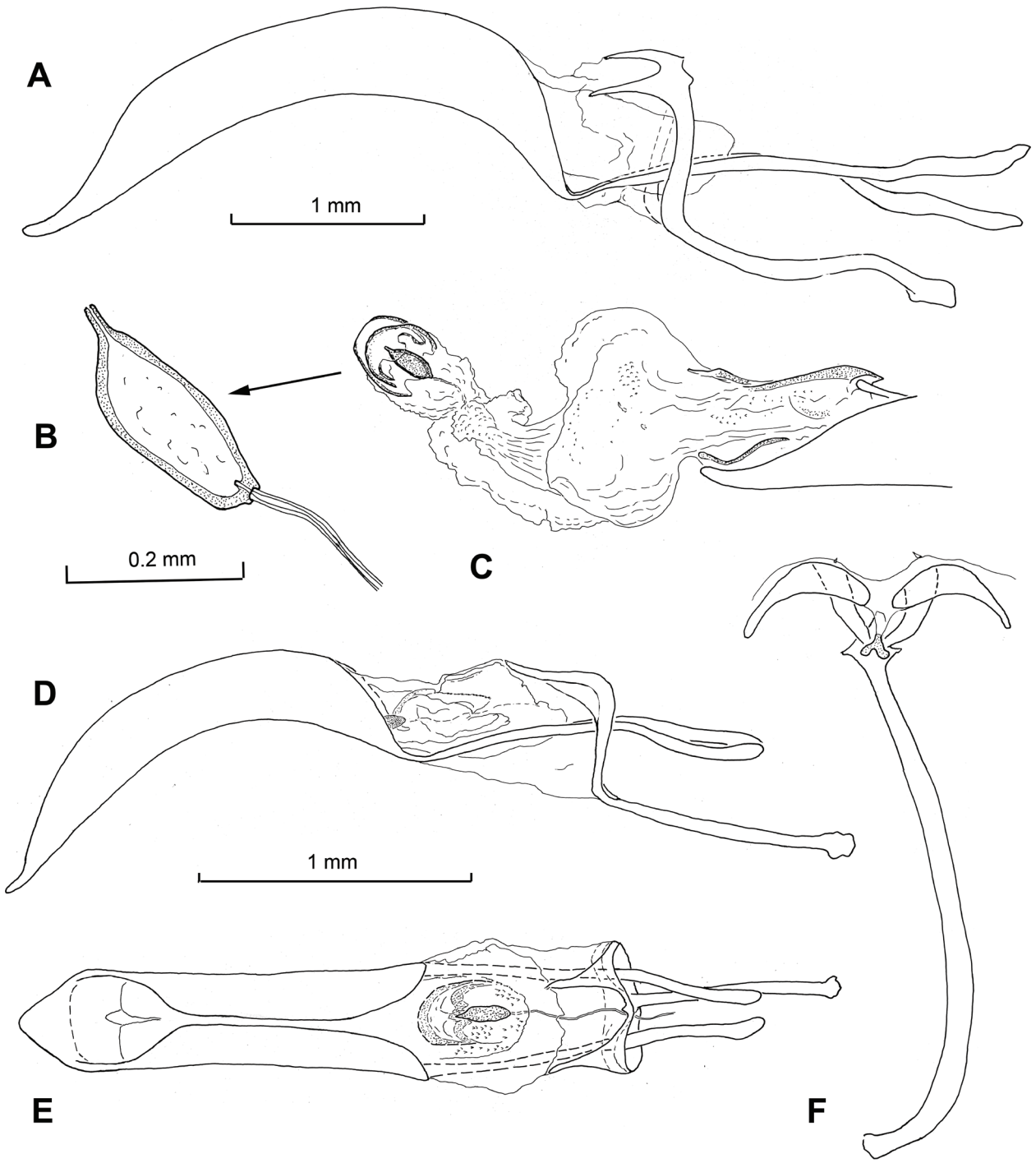

Fig. 6.— Male genitalia. *Herpisticus laesicollis*: **A** = Aedeagus in lateral view, **B** = spermatic bulb, **C** = everted endophallus.— *Herpisticus rectipes* **n. sp.**: **D** = Aedeagus in lateral view, **E** = idem in dorsal view, and **F** = ♂ sternite 8 and spiculum gastrale.

Fig. 6.— Genitalia masculina. *Herpisticus laesicollis*: **A** = Edeago en visión lateral, **B** = bulbo espermático, **C** = endofalo evertido.— *Herpisticus rectipes* **n. sp.**: **D** = Aedeagus in lateral view, **E** = idem in dorsal view, and **F** = ♂ sternite 8 and spiculum gastrale.

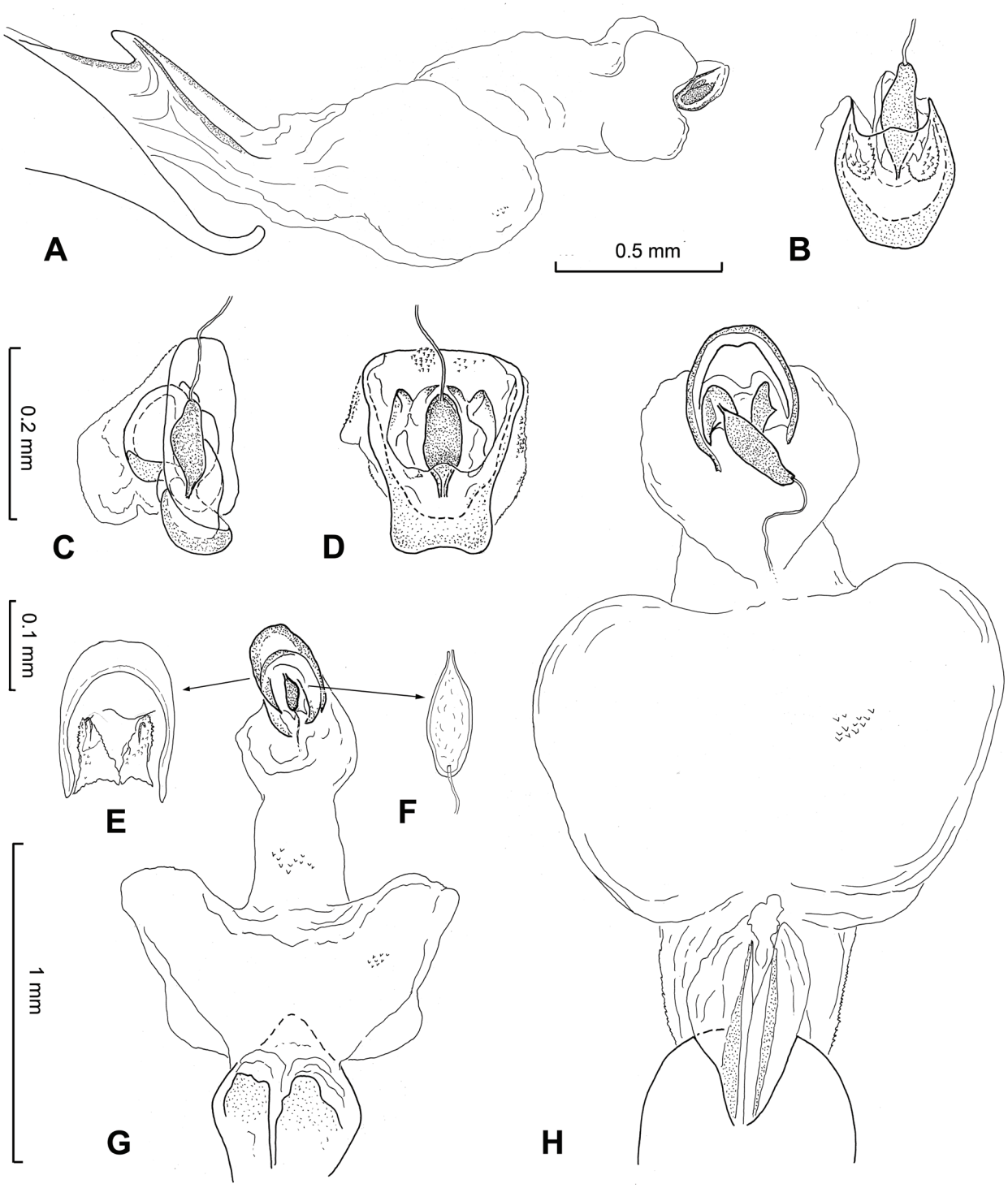

Fig. 7.— Endophalus and transfer apparatus of *Herpisticus*. **A** = everted endophalus of *H. subvestitus pseudolanatus* **n. ssp.** (C: Arinaga), **B** = transfer apparatus of *H. aridicola* **n. sp.** (T: Barranco del Infierno), **C-D** = Idem of *H. denudatus* **n. sp.** (C: Degollada de la Yegua) in lateral and dorsal view.– *Herpisticus calvus*: **E =** everted endophallus, **F** = capsule of transfer apparatus, **G** = spermatic bulb detached.– **H** = everted endophallus of *H. hirtus* **n. sp**. (G: Degollada de Hernia).

Fig. 7.— Endofalo y "transfer apparatus" de *Herpisticus*. **A** = endofalo evertido de *H. subvestitus pseudolanatus* **n. ssp.** (C: Arinaga), **B** = "transfer apparatus" de *H. aridicola* **n. sp.** (T: Barranco del Infierno), **C-D** = Idem de *H. denudatus* **n. sp.** (C: Degollada de la Yegua) en visión lateral y dorsal.— *Herpisticus calvus*: **E =** endofalo evertido, **F** = cápsula del "transfer apparatus", **G** = bulbo espermático sepatado.– **H** = endofalo evertido de *H. hirtus* **n. sp**. (G: Degollada de Hernia).

2 elongate blade-like and sclerotised, with flat styli distant from apex, bearing 4-5 setae (not surpassing apex). Bursa copulatrix without sclerites, with a fold or in continuum with common oviduct (characterised by microspiculed integument). Union of spermathecal duct simple; spermatheca (Fig. 8B) U-shaped, with globose body, long curved thin cornu, broad short ramus, and flat

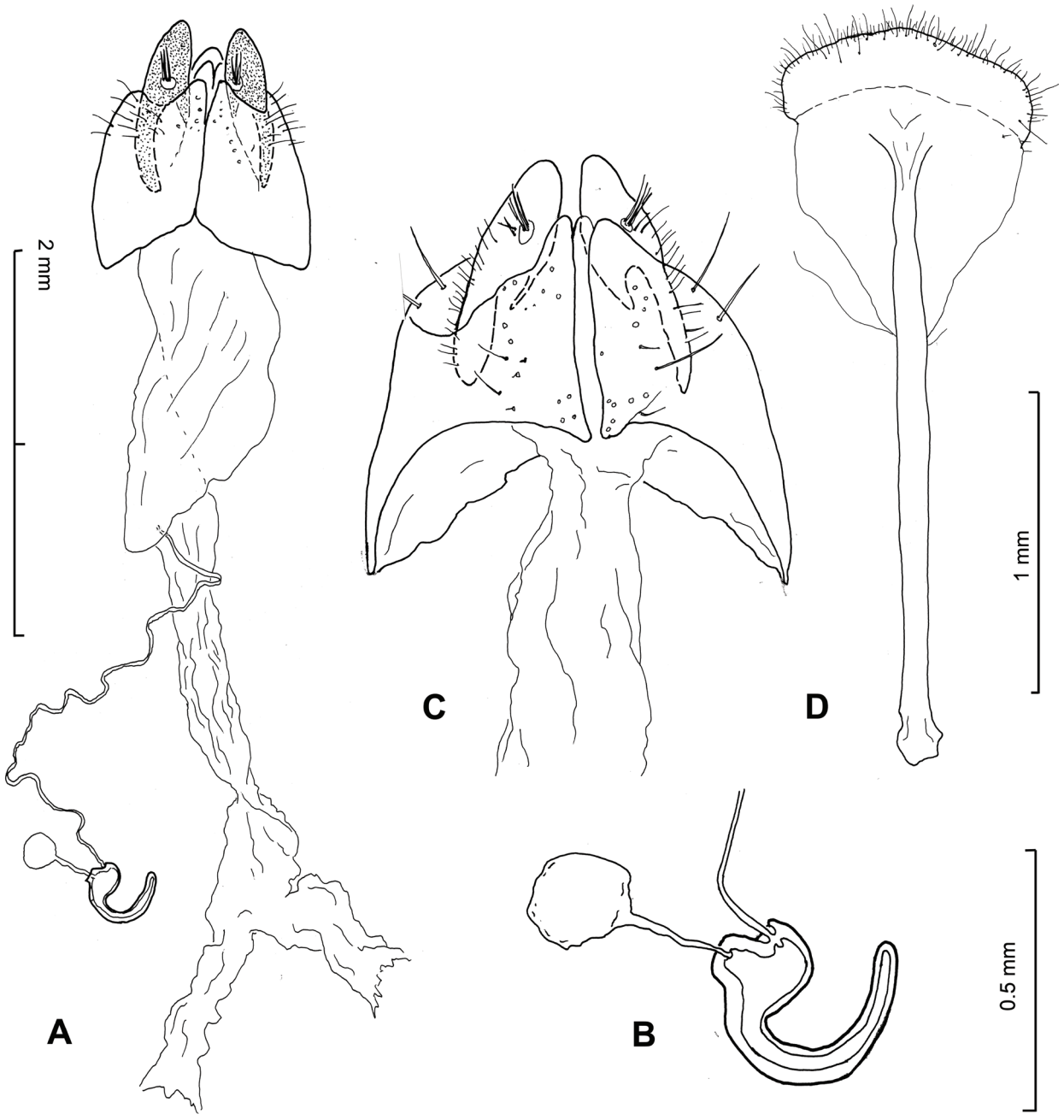

Fig. 8.— Female genitalia of *Herpisticus famarae* **n. sp**. (L: Yé): **A** = ovipositor, genital chamber, and oviduct, **B** = spermatheca with spermathecal gland.— Same of *Herpisticus calvus* (F: La Antigua): **C** = ovipositor with styli, and **D** = spiculum ventrale (sternite VIII).

Fig. 8.— Genitalia femenina de *Herpisticus famarae* **n. sp**. (L: Yé): **A** = ovopositor, cámara genital y oviducto, **B** = espermateca con la glándula espermática.— Lo mismo en *Herpisticus calvus* (F: La Antigua): **C** = ovopositor con styli, y **D** = spiculum ventrale (esternito VIII).

nodulus pointing to the same side; spermathecal gland globose, smaller than spermatheca and duct about as long as its diameter.

Teratology. The following deformities have been observed in isolated specimens of *Herpisticus*:

- Head capsule expanded laterally above right ocular area, with deformed eye (1♂ *H. nanus* n. sp.) from Punta Arenas, Gran Canaria).
- Left elytron with a large tumefaction at apical third (1♀ *H. famarae* n. sp. from Risco de Famara, Lanzarote).
- Each elytron with a small preapical tubercle (1♂ *H. laesicollis?* from Aguamansa, Tenerife).
- Each elytron with a symmetrical depression on apical third (*H. subvestitus grancanariensis* from Piso Firme, Gran Canaria).
- Elytra at tip briefly truncated and expanded laterally (1♀ *H. subvestitus pseudolanatus?* from Melenara, Gran Canaria).

Description of the egg. Eggs of *Herpisticus* are oval (L/W 1.6-1.7), of a whitish colour that turns dark to blackish as they mature. They bear a hyaline film that adheres them to the substrate (e.g., a leaf). This coating shrinks into an irregular polygonal pattern when not humid, protecting the egg, which mantains its oval shape. Size of eggs in *H. lanatus* is 1.36 × 0.88 mm, in *H. subvestitus pseudolanatus* n. ssp. 1.30-1.36 × 0.78-0.82 mm, and in *H. denudatus* n. sp. 1.80-1.86 × 1.08-1.10 mm.

Description of the larva (*H. subvestitus pseudolanatus* n. ssp.). Size about 10 mm or longer (Fig. 9A), body curved, rounded in cross section, yellowish-creamy in colour, with pronotum slightly darker and head showing a characteristic pattern (Fig. 10A) of dark brown-reddish patches on a yellowish background as follows: a trident-shaped patch on frons (median branch longer), a longitudinal more or less pigmented stripe at each side of epicraneal suture, and two lateral pigmented bands leaving ocellar area (around des4) and a stripe along des2 seta unpigmented; clypeus with three darkened basal patches; mandibles dark brown except traslucid scrobal area.

Head (Fig. 10) roundish, moderately globose; head capsule wider than longer (L/W 0.85); frontal sutures indistinct; epicraneal suture shallow; endocarinal line absent. Setae filiform, of different lengths: epicraneum with 5|5 *des* and 3|3 sensillae aligned with des_1 in basal half; 2|2 *fs,* 2|2 *les*, and 1|1 *ves*. Two pairs of pigmented stemmata (anterior and posterior to des_4). Antennae (Fig. 10B) monomerous with 4 small conical sensillae on the basal membranous segment; sensorium cushion-like, oval in cross-section, twice as long as high. Clypeus trapezoid and transversal (L/W 0.4), with 2|2 small *cls*. Labrum (Fig. 10E) about 2.6× as wide as long, with 2|2 *lms* and 1|1 *lls* (all straight, equal, rather long). Epipharynx (Fig. 10F) with 3|3 *als* (broad and long), 2|2 *ams* (shorter), and 3|3 large *ems* (apical pair with broader leaf-shaped setae less separate than finger-like setae of other pairs); labral rods divergent, with fringed integument. Mandibles (Fig. 10D) relatively elongate (L/W ≈ 2), bifid, with cutting edge simple, scrobe traslucid, and 2 *mds* of equal length. Maxillae with 1 *stp* and 2 *pfs* of same length, 1 tiny *mbs* (sensillae?); mala with 4 straight *vms* different in length, and 11 *dms* (9 blade-like, 2 posterior finger-like). Maxillary palpi with two palpomeres; basal one with 1 *mxps*. Praelabium with 2|2 tiny *ligs* (apical pair, longer) and 1|1 long *prms*. Labial palpi with two asetose palpomeres. Premental sclerite well visible, medial extension elongated. Postlabium with 3|3 *pms* (small, long, small).

Prothorax smaller than meso- and metathorax together; spiracle located below lateral midline, narrow, simple, with two internal digitate projections and no developed airtubes (Fig. 9B). Setae on each side; 7 *prns* (different sizes), 1 *as*, 1 *eps*, 1-2 *ps*, 6 *pds* (in circular disposition), 1 *lsts*, and 1 *eus*. Mesothorax and metathorax with two dorsal folds bearing on each side: 1 *prs*, 4 *pds*, 1 *as*, 1 *eps*, 7 *pda* (4+1+1+1), 1 *lsts*, and 1 *eus*.

Abdominal segments I-VII of equal length, with three dorsal folds; spiracles located above lateral midline (vertical); on each side: 1 *prs*, 5 *pds* (1 short + 1short, 1 long + 1 short, 1 long), 1 small *sps*, 2 *eps* (short, long), 2 *ps* (long, short), 1 lsts, and 1 *eus*. Segment VIII shorter, with two dorsal folds; same chaetotaxy but 4 *pds* and spiracle pointing backwards. Segment IX (Fig. 9C) of type A (*v.* Van Emden, 1952), terminal, with 4 slightly sclerotised lobes converging around segment X: two large triangular at each side (with middle carina, almost touching at apex) bearing 1 *psx*; one dorsal with 3|3 *ds*, and one ventral squarish, located ventrally, with 2|2 *ts* (aligned distally, of equal small size). Segment X rather small, placed below midline, with four soft lobes around anus; the lateral lobes with 1 *ts*.

Description of the pupa (*H. subvestitus pseudolanatus* n. ssp., Fig. 11). With the characters of the entimine pupae according to Marvaldi (1997); length 7.7 mm, width 2.5 mm (across the thoracic segments); body elongate, of white-creamy colour, with setae arising from conical elevations of various heights (papillate setae). Most setae are somewhat thorn-like but not very robust and with the tip usually bent; the thinner ones are hair-like, more curved or twisted apically.

Head little visible in dorsal view; slender, rostrum medium-short, with parallel sides, slightly divergent towards apex; interior margin of mandibular theca smooth. Antennae in repose slightly surpassing prothorax. Chaetotaxy: 1|1 *vs*, 5|5 *os* (os_4 long hair-like, the rest shorter), 3|3 *sos* (hair-like), 1|1 *pas* (small, hair-like), 4|4 *rs* (one ventrally placed, hardly visible), and 1|1 *es*; mandibular theca with 2 *mts* (the external longer).

Prothorax wider than long (L/W 0.8), widest at base, anteriorly rouded. Chaetotaxy: 1|1 *as*, 2|2 *ds* (two rows), 3|3 *sls* (hair-like), 2|2 *ls* (hair-like), and 2|2 *pls*. Mesothorax with 8|8 dorsal (*d*) setae in three rows (on each side: 2 (microchaetae) near posterolateral margin of pronotum, 1 postapical and 1+3+1 median). Metathorax with 6|6 dorsal setae in two rows (on each side: 1+1 anteriad and 1+3 posteriad, d_2 hidden by pterotheca). Femora with 2 *fes* (fes_1 longer).

Abdominal segments I-VII of almost equal length (except VII, ventrally), narrowing smoothly and with setae increasing gradulally in size and more strongly papillate from IV towards apex. Five spiracles, not pigmented, inconspicuous, difficult to observe. Segment IX hardly visible from above. Chaetotaxy: 1|1 d_1 hair-like located anteromediad (longer and twisted in VII-VIII), 5|5 $d_{2\text{-}6}$ aligned posteriad (1+2+2); 2|2 hair-like

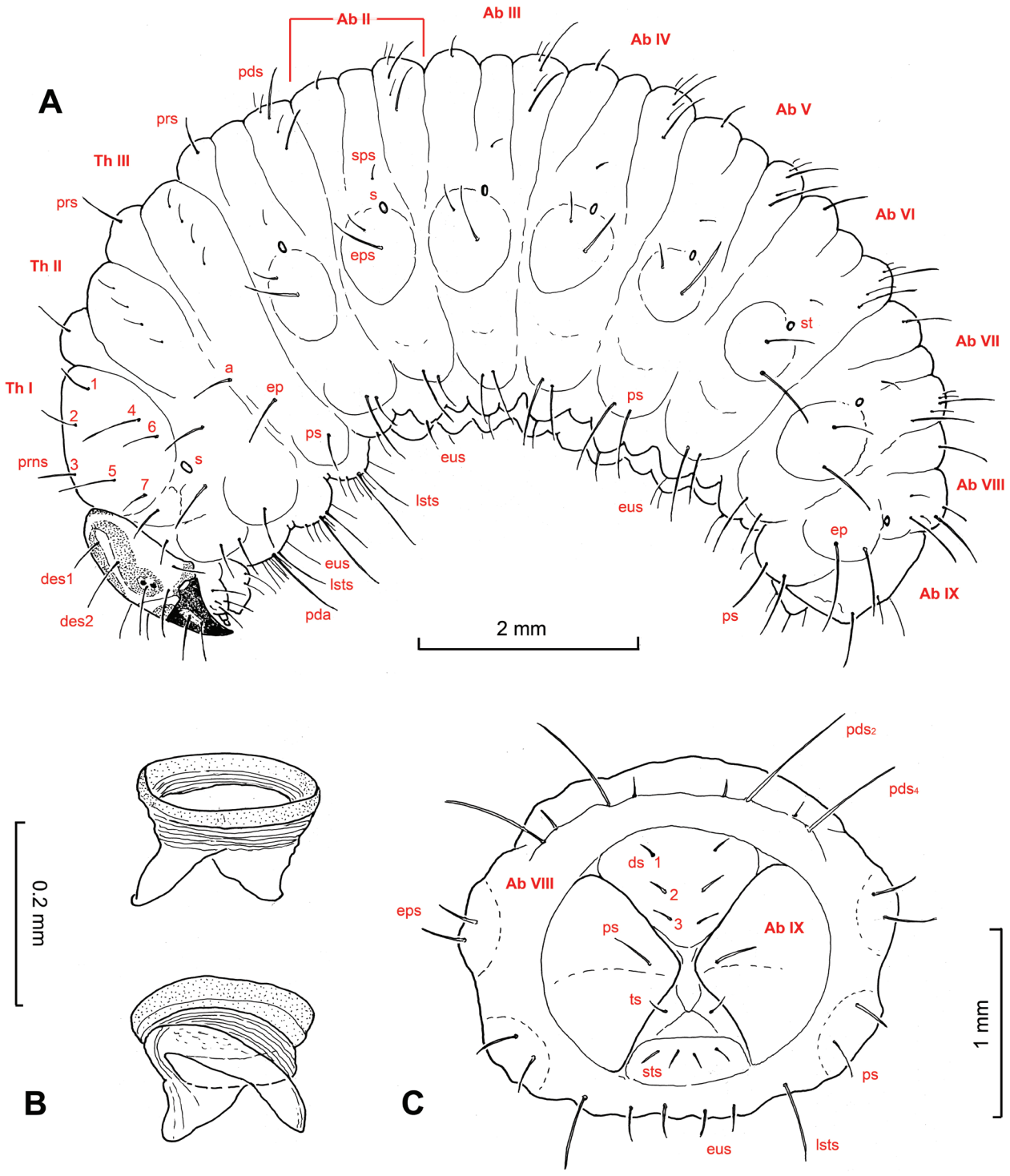

Fig. 9.— Larva of *Herpisticus subvestitus pseudolanatus* **n. ssp**. (C: Arinaga): **A** = body in lateral view, **B =** abdominal stemmata, and **C** = body in rear view. For abbreviations see Material and Methods.

Fig. 9.— Larva de *Herpisticus subvestitus pseudolanatus* **n. ssp**. (C: Arinaga): **A** = cuerpo en visión lateral, **B =** stemmata abdominales, y **C** = cuerpo en visión trasera. Ver abreviaturas en Material y métodos.

ls located near the tergum-sternum border, and segment VIII terminal with the median seta d_2 missing, and d_5 crowning a rather protruding longitudinal lobe. Ventrally, 3|3 small *v* (1+2) with the pair of v_1 more distant among them on segments VII and VIII. Segment IX almost ventral, with gonotheca divided (♀ pupa), 1 *v* at each side of it and 3 |3 *pc* not very outstanding ($pc_{1\text{-}2}$ on small papillae).

Remarks. *Herpisticus* are short-nosed weevils (Entiminae) of the tribe Tanymecini, as they bear a row of vibrissae –although short and not very

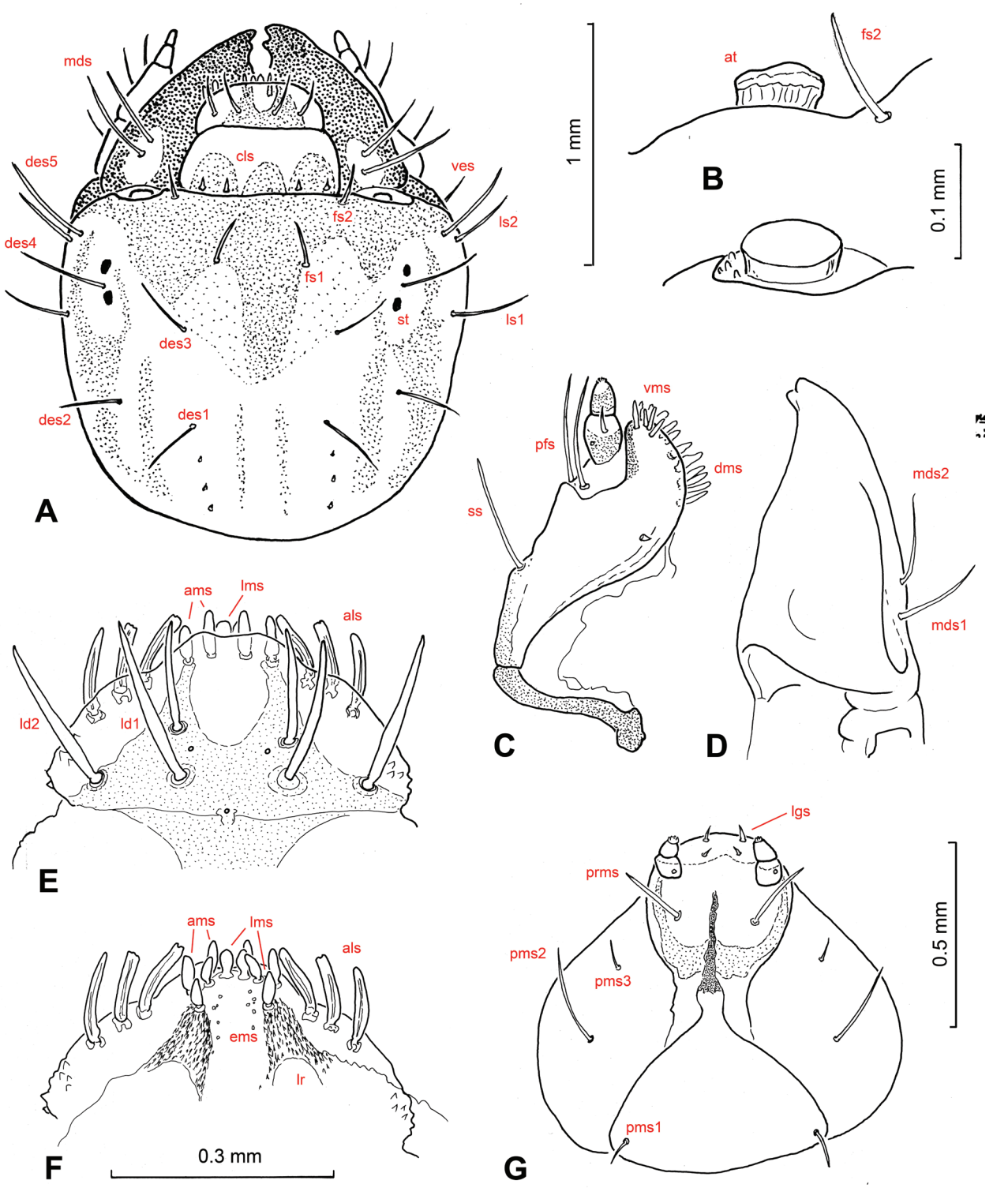

Fig. 10.— Head of larva of *Herpisticus subvestitus pseudolanatus* **n. ssp.** (C: Arinaga): **A** = head in dorsal view, **B** = antenna in oblique and lateral view, **C** = right maxilla in ventral view, **E** = right mandibula, **F** = labrum in dorsal and ventral view, and **G** = labium in ventral view. For abbreviations see Material and Methods.

Fig. 10.— Cabeza de la larva de *Herpisticus subvestitus pseudolanatus* **n. ssp.** (C: Arinaga): **A** = cabeza en visión dorsal, **B** = antena en visión oblicua y lateral, **C** = maxila derecha en visión ventral, **E** = mandíbula derecha, **F** = labro en visión dorsal y ventral, y **G** = labio en visión ventral. Ver abreviaturas en Material y métodos.

conspicuous in some species– along the front margin of each side of the prothorax, which is straight; claws are connate at their base (subtribe Piazomiina), and the second ventrite is longer than the third and separated from the first by an obliterated suture (Morimoto *et al.,* 2006). Morphologically, it can be related to the

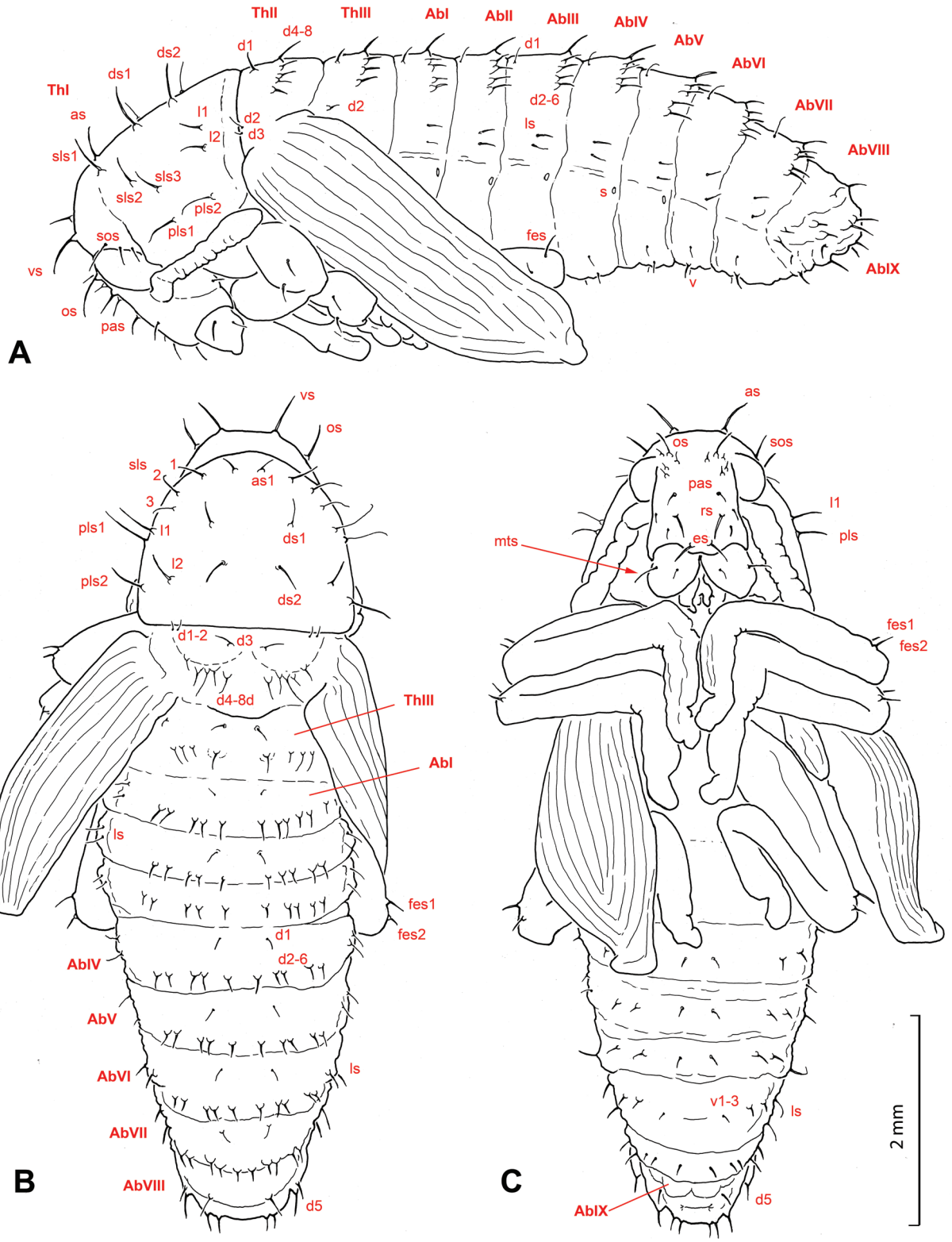

Fig. 11.— Pupa ♀ of *Herpisticus subvestitus pseudolanatus* **n. ssp.** (C: Arinaga): **A** = lateral view, **B =** dorsal view, and **C** = ventral view. For abbreviations see Material and Methods.

Fig. 11.— Pupa ♀ de *Herpisticus subvestitus pseudolanatus* **n. ssp.** (C: Arinaga): **A** = visión lateral, **B =** visión dorsal, y **C** = visión ventral. Ver abreviaturas en Material y métodos.

Piazomias - *Leptomias* generic group (*Leptomias*, *Geotragus, Hyperomias*, *Pachynotus*, *Xizanomias*, *Triangulomias, Odontomias,* etc.), which is very speciose and mainly distributed in Asia (India, Pakistan, Himalayan countries, China, Siberia, Korea, etc.), but also in the southern Ethiopic region in the case of one lineage of *Piazomias* (Congo, Angola, Namibia, and South Africa). However, potential relations with

other extended African forms (*Polyclaeis, Cimbodes, Beardiella,* etc.) should be checked.

Herpisticus is endemic to the Canary Islands and represents a rather isolated disjunct geographical situation. It can be recognised by the crenulated or denticulate protibiae (no spiniform teeth) and the six-segmented looking funiculus of the antennae because the seventh antennomere is cup-like and attached to the club. Moreover, the scrobe is tangent to the eye (separated in *Leptomias*), its dorsal margin pointing to mid-eye, and the rostrum is dorsally free of carinae. The transfer apparatus found in *Herpisticus* is likely to be specific to this genus (more complex than in *Geotragus*), and may be important in separating species, but it is a difficult structure to study due to its size and the obscure scheme of folds inside it. The presence of a spiculum relictum in the male sternite VIII suggests an old lineage for this genus.

In habitus, *Herpisticus* resembles most *Molybdotus vermicularis* (C.O. Waterhouse, 1881) from the island of Socotra, possibly due to convergent adaptation to similar semi-arid habitats. *Molybdotus* has antennomere 7 broader than antennomere 6, but is clearly separated from the club, and the tibiae have thick stiff spine-like setae attached to each strong denticle (soft setae in *Herpisticus* and denticles less developed).

The morphological variation in shape and vestiture within species of Tanymecini is a known drawback in taxonomic studies. However, the variability attributed to pilosity in *Herpisticus* is far from real, and pilosity has shown to be largely coherent with the groups molecularly postulated as different species, being a good character, although mainly useful with males. Pilosity in females is usually less developed and for some species the following keys do not work well with females. Moreover, special care has to be taken in the observation of pilosity, as specimens kept in museums often have their hairs eaten by mites or booklice, and just a stump remains.

The larva of *Herpisticus* best fits the characters of 'Group A' of Entimini as defined by Marvaldi (1997), but has some peculiarities in the maxillae (beset with 4 dms and 11 dms), combined with simple spiracles, reduced and subventral segment X, etc., that could require a separate entry. Unfortunately, there is scarce information on preimaginal stages of related Entiminae, particularly for genera of Piazomina, as to enable a sound comparison (May, 1993; Marvaldi, 1998; Gosik & Sprick, 2013; Gosik *et al*., 2016). The larva of *Tanymecus palliatus* (Fabricius, 1787), for instance, has aligned frontal setae (fs), long clypeal setae (*cls*), 3 *ams* and 4 *als* on clypeus, only 7 *dms* on maxillae, etc. (Gosik *et al.*, 2019). The general appearance of the pupa (see photo in Fig. 51) resembled that of some *Otiorhynchus* or *Brachyderes,* but with shorter antennae and no developed pseudocerci as in *Brachyderes.*

Common names.The Spanish official common name for *Herpisticus* is '*gorgojo gandul'* (idle weevil) (Machado & Morera, 2005), the term '*gandul*` in the Spanish spoken in the Canary Islands also having the local meaning of a large young person, who is somewhat indolent. Etymologically, the generic name derives from the Greek *ἑρπυστικός* (herpystikós), which means creeping.

Herpisticus oculatus Wollaston, 1864
Figs. 12, 52A, 53A, 55A, 57A, 58A, 69A
Proposed Spanish common name: *Gorgojo gandul conejero*

Herpysticus oculatus Wollaston, 1864: 373, 1865: 334; Marseul, 1874: 246; Winkler, 1932: 1490; Uyttenboogaart, 1937: 109.
Herpysticus eremita [?], in Heer, 1857: 141.
Herpisticus eremita, in Uyttenboogaart, 1940: 61 [= *oculatus,* syn.]; Lindberg & Lindberg, 1958: 45 (expressing doubts, p. 46).
Herpisticus oculatus, in Español, 1947: 97; Lindberg & Lindberg, 1958: 46; Palm, 1974: 34, figs. 2A, 2C, 3A; García *et al*., 1993: 241; Gurrea & Sanz, 2000: 334; Machado & Oromí, 2000: 79; Oromí *et al*., 2001: 211, 2003: 173, 2004: 224, 2010: 272; Ren *et al.*, 2013: 394; Stüben, 2014a: 94 fig. HERocu.1LTF, 2014b: 4 [lectotype designation]; Alonso-Zarazaga *et al.,* 2017: 381; Stüben, 2018b: 22 [pars].

Type locality: Between Haría and Teguise (possibly Los Valles). Lanzarote, Canary Islands.

Material examined. **Lanzarote**. Between Haría and Teguise, 1♀ (lectotype des. P. Stüben) 22-1-1858 leg. T.V. Wollaston (NHM).– Arrecife 1 ex (MNCN).– Puerto Arrecife 1 ex leg. L. Maltusgues (NMNH).– Montaña Roja 1 ex 25-3-1949 leg. H. Lindberg (FMNH).– Teguise 4 exx 6-7-1971 leg. J.M. Fernández (TFMC).– Arrecife 3 exx 12-11-1980; Teguise 3 exx 12-11-1989 leg. J. de Ferrer (MAAZ).– Cortijo de las Maretas 4 exx 28-2-2019 (RGB).–Guatiza, 100 m 2 exx 22-4-2010 (RVLL); Teguise N 333 m (29°04′05.0″N 13°33′34.3″W) 62 exx 5-8-2019 leg. R. Valle (20 RVLL, 42 AMC).– Los Valles 300 m 1 ex 29-11-2007; Yaiza: Cortijo de las Maretas (28º54′16″N 13º49′55″W) 8 exx 4-1986, 1 ex 28-2-2019 [DNA 10335L | MN432584]; Puerto del Carmen 3 exx 2-12-1988; Teguise 4 exx 4-7-1971 leg. A. Machado. Costa Teguise 2 exx 11-2-2017 [DNA 10325L | MN432587]; Los Ancones 2 exx 11-2-2017 leg. S. Zola & M. Daccordi (AMC).

Redescription. *Herpisticus* small (body size ♂ 7.8×3.0 mm - 8.3×3.3 mm), long-oval; colouration usually clear, with whitish, beige, and testaceous scales forming patches, on ventral side dominantly white and glaucous (metallic tint); scales flat, large, polygonal, and coalescent; elytral pilosity uniform and open, 2-3 short curved fine whitish hairs (tip pointing backwards) across the interstriae, barely overlapping longitudinally, hairs near

Fig. 12.— *Herpisticus oculatus* Wollaston, 1864 ♂ (Lanzarote, Teguise).

Fig. 12.— *Herpisticus oculatus* Wollaston, 1864 ♂ (Lanzarote, Teguise).

as long but not longer than a claw. Antennal flagellum ×1.9 length of scape; club thick L/W about 2.7 (incl. desmomere 7). Rostrum short (L/W 0.74-0.78), sides convergent apicad; forehead slightly depressed between eyes. Eyes slightly oval (L/W 1.16), the most prominent in the genus (convexity 33-45%); post-ocular vibrissae greatly reduced, almost residual. Pronotum (L/W ♂ 0.81) rather uneven, pitted with large and deep varioles; sides moderately curved, anterior constriction usually well marked (collar) and latero-basal sulcus poorly developed, forming no marked angular tooth. Scutellum long-triangular. Elytra long-oval (L/W 1.6-1.7), widest at middle, about 2.74× length of pronotum; convex in lateral view, with declivity starting at mid abdomen; striae with large punctures (partially hidden by scales), broader than interstriae. Legs long; profemora somewhat inflated at middle; protibiae crenulated, clearly longer (> 1.15×) than metatibiae; denticles absent in meso- and metatibiae. Spiculum relictum of sternite VIII (Fig. 52A) with broad arms, shorter than its base and apical sclerotisation (head) boot-like. Penis tube short, uniformly curved and with straight apex in lateral view (Fig. 53A), tapering with blunt point in dorsal view; tegmen withous median process between parameres (Fig. 57A); endophallus midsection globose (Fig. 55A); base of transfer apparatus inflexed at middle.

Female as male, larger and with elliptical appearance (body size 8.4×3.5 mm - 9.9×4.1 mm); pronotum wider (L/W 0.73); elytra broader and laterally more curved (L/W 1.57), about 3.31× length of pronotum. Spiculum ventrale with apically semi-circular plate (Fig. 58). Spermatheca with wide nodulus (Fig. 59A).

Remarks. *Herpisticus oculatus* has the most protruding eyes in the genus, is one of the smallest in size (together with *H. rectipes* n. sp. and *H. nanus* n. sp.), and has the longest protibiae, somewhat resembling *Coelositona* when walking. When they are being

disturbed on the ground, they abruptly turn up-side down and freeze with their extremities stretched, a behaviour not yet observed on other *Herpisticus*.

It can be recognised by the sparse uniform pilosity of the elytra, with curved hairs hardly overlapping longitudinally. The other *Herpisticus* from the eastern Canary Islands have both recurved setae and a less sculptured pronotum. Wollaston grouped this species and *H. calvus* as having the second desmomere of the funiculus clearly longer than the first, however it can be the opposite and in many cases they are of equal length. This character is not stable, as already highlighted by Uyttenboogaart (1940).

The genetic distance between a sequence from the central part of the island (Teguise) and another from the south (Yaiza) is 5.3%, suggesting a geographical split within this species, but with no appreciable morphological differentiation.

Distribution and ecology. *Herpisticus oculatus* is endemic to Lanzarote. It dwells in the arid central and southern parts of Lanzarote on clayey soil, avoiding the young extensive volcanic lavafields and sandy habitats (Fig. 14). In the north of the island it is replaced by *H. famarae* n. sp. Usually collected below stones and debrie, it is a summer animal and rather uncommon in winter, in comparison to *H. calvus* on the neighbour island of Fuerteventura. It feeds on *Atriplex semibaccata*, *Salsola vermiculata*, *Medicago* sp. and oder scrubs.

Herpisticus famarae Machado **n. sp.**
urn:lsid:zoobank.org:act:7B2A2E87-426D-4D5D-AC2A-24C5582EAF4A
Figs. 7A, 8A-B, 13, 52B, 53B, 58B
Proposed Spanish common name: *Gorgojo gandul de Famara*

Herpysticus oculatus, in Simony, 1892: 398 [?].
Herpisticus oculatus, in Lindberg & Lindberg, 1958: 46 (pars); Oromí & García, 1995:184.
Herpisticus calvus (pars), in Lindberg & Lindberg, 1958: 46; Gurrea & Sanz, 2000: 333; Stüben, 2018b: 22, figs. HERocu1M, HERocu2, HERocu1LTF.

Type locality. Fuente de las Ovejas Lanzarote, Canary Islands.

Material examined. Holotype: **Lanzarote**. Famara: Fuente Ovejas 290 m (29°10′30″N 13°30′46″W) 1♂ [GBIF 6.906] 26-6-2004 leg. H. López (DZUL).– Paratypes: Pico de Famara 1 ex 9-3-1935 leg. A. Cabrera (MNCN).– Mirador del Río 1 ex 31-7-1990 leg. P. Oromí (POM).– Famara: Fuente Ovejas, 290 m 1 ex 26-6-2004; Mirador del Río, 1 ex 8-4-2004 leg. H. López (DZUL).– Malpaís de La Corona 1 ex 2-10-2002 leg. A. Aguiar (AAC).– Yé, Finca la Corona, c/ Las Rositas, 350 m (29°11′48″N 13°29′33″W) 2 exx [DNA 10066L | MN432529] 4-1-2017 leg. P. Stüben (PST), ídem 1 ex [DNA 2926-PST | MH051985] (ZFMK). – Same locality 12 exx 5-8-2019 leg. R. Valle (4 AMC, 8 RVLL).– Between Mirador del Río and Yé 1 ex 28-2-2019 leg. R. García (RGB).– Yé: Las Rositas 12 exx 5-8-2019 leg. R. Valle (8 RVLL, 4 AMC). – Mirador del Río 1 ex 6-7-1971 leg. A. Machado (AMC).– Non-paratypes: Montaña Roja (?) 1 ex 25-3-1949 leg. H. Lindberg (FMNH).– Lanzarote 23 exx. (without further data; possibly leg. Escalera); La Atalaya 1 ex 12-3-1952 leg. J. Mateu (MNCN).– Famara 1 ex (deformed) 6-7-1971 J.M. Fernández (TFMC).– **Alegranza**: Interior of La Caldera, 4-5-1990 leg. P. Oromí (POM).

Description. *Herpisticus* of moderate size and long-oval appearance (body size ♂ 8.5×3.35 mm - 10.3×3.9 mm); colouration variable like in *H. oculatus,* but scales round and smaller, detached from each other. Elytral pilosity uniform and dense, hairs very small, dark, recurved (tip almost touching integument), overlapping longitudinally, about half the size of claw (a few longer and less recurved at apex). Antennae thicker than in *H. oculatus*; flagellum about 2× length of scape; club thick (L/W about 2.8). Rostrum short (L/W 0.86) parallel, dorsally with longitudinal rugosity and punctate; forehead slightly depressed between eyes. Eyes little oval (L/W 1.11), rather prominent (convexity 30-31%). Pronotum (L/W 0.85) with post-discal depression noticeable, less sculptured than in *H. oculatus*; sides less curved, subparallel, sometimes uneven and slightly constricted at mid, widest about middle or before middle; median line thin. Elytra long-oval (L/W 1.71); about 2.9 times length of pronotum; widest after middle, subconvex in profile with declivity starting about middle; interstriae broader than striae. Protibiae slightly longer (> 1.09×) than metatibiae, with crenulation little developed (absent in meso- and metatibiae). Arms of spiculum relictum of sternite VIII (Fig. 52B) much shorter than base, with large globular sclerotised apex. Penis (Fig. 53B) with triangular-pointed apex, somewhat reflexed.

Female as males but much larger and broader (body size 10.9×4.3 mm - 12.2×5 mm); rostrum longer (L/W 0.97); pronotum wider (L/W 0.66); elytra more inflated (L/W 1.65), and about 3.2× length of pronotum. Crenulation of protibiae much smaller. Spiculum ventrale with apically arcuate plate (Fig. 58B). Spermatheca with short collum (Fig. 8B).

Etymology. The specific term “famarae” is the genitive of the name of the massif north of Lanzarote where the species lives, although not exclusively.

Remarks. The presence of this species in addition to *H. oculatus* in Lanzarote has been overlooked despite good morphological differences on rostrum, elytral pilosity, scales shape, etc. Their genetic distance ranks between 15.2-16.8%. It is likely that old records for Lanzarote of *L. calvus*, which is likewise larger than *H. oculatus* and has recurved setae, refer to this species

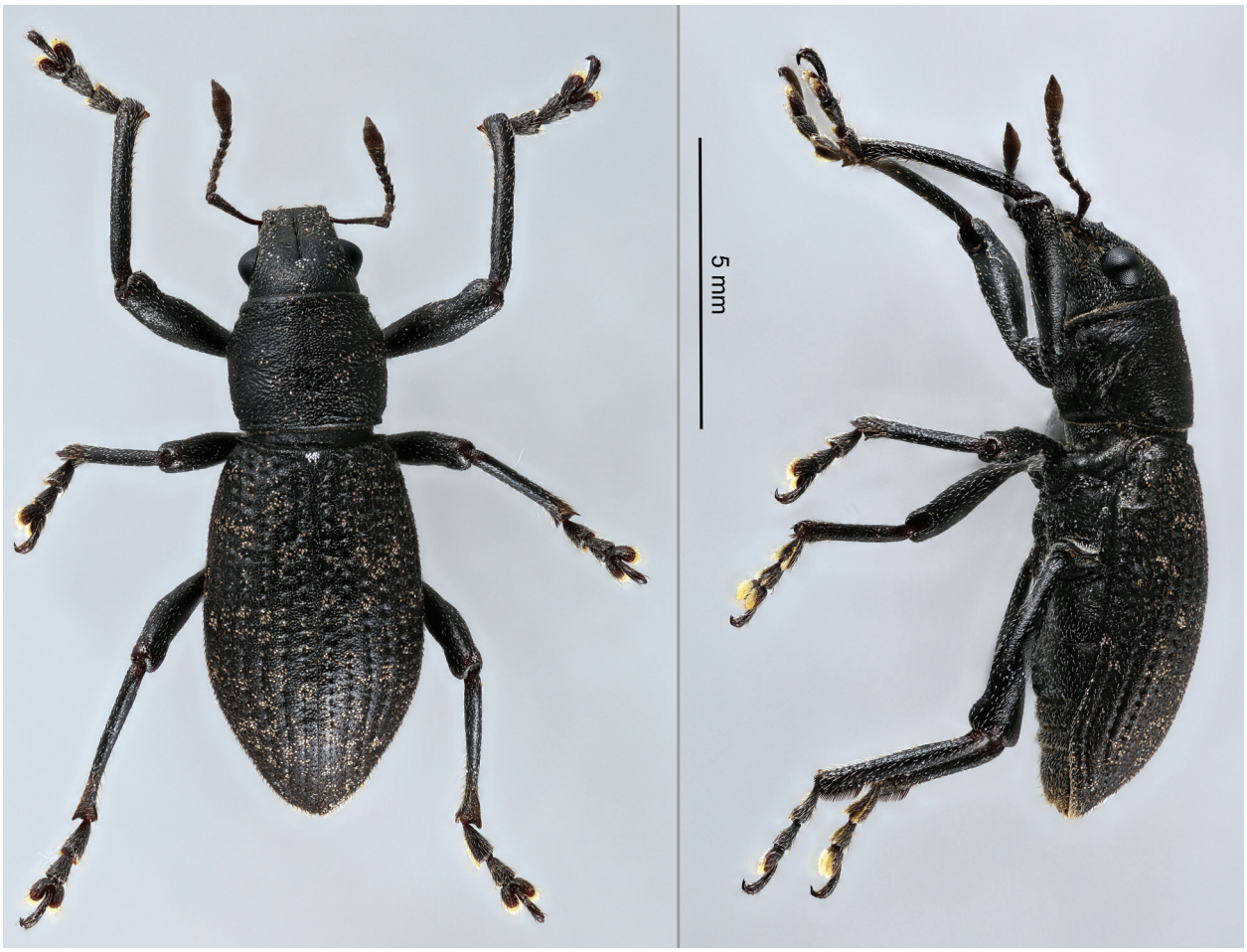

Fig. 13.— *Herpisticus famarae* n. sp., holotype ♂ (Lanzarote, Yé).

Fig. 13.— *Herpisticus famarae* n. sp., holotipo ♂ (Lanzarote, Yé).

(e.g. Simony, 1892) as confirmed with one specimen ex Mateu cited by Lindberg & Lindberg (1958).

Distribution and ecology. *Herpisticus famarae* n. sp. is endemic to Lanzarote and the northern islets known as the Chinijo Archipelago (presence confirmed for Alegranza) (Fig. 14). It lives in the same xerophytic habitats as *H. oculatus,* but possibly allopatrically and restricted to the northern sector of the island, the massif of Famara and flatlands. There is one specimen from the South collected by H. Lindberg on a young volcano near Yaiza (Montaña Roja) together with one specimen of *H. oculatus*, but the locality name was handwritten replacing the original locality "Janubio" in both specimens. A mislabelling cannot be disregarded and the sympatry of these species deserves confirmation. *H. famarae* has been collected under stones on clayey soil, by sifting hanging dead leaves of *Sonchus* and *Aeonium,* and feeding on *Asparagus nesiotes purpuriensis.*

Herpisticus calvus Wollaston, 1864
Figs. 7E-G, 8C-D, 15, 52C, 53C, 55B, 57B, 58C, 59B.
Proposed Spanish common name: *Gorgojo gandul majorero*

Herpysticus calvus Wollaston, 1864: 372, 1865: 334; Marseul, 1874: 246; Winkler, 1932: 1490.
Herpysticus eremita, in Heer, 1857: 142.
Herpisticus eremita, in Uyttenboogaart, 1940: 61 [= *calvus* Wollaston*,* syn.]; Lindberg & Lindberg, 1958: 45.
Herpisticus eremita eremita (pars)*,* in Gurrea & Sanz, 2000: 333.
Herpisticus calvus, in Lindberg & Lindberg, 1958: 46; Palm, 1974: 34, figs 2B, 2D, 3B; García *et al.,* 1993: 241; Gurrea & Sanz, 2000: 332; Machado & Oromí, 2000: 79; Oromí *et al.,* 2001: 211, 2004: 224, 2010: 272; Haitlinger, 2009: 142 [parasites]; Ren *et al.,* 2013: 394; Stüben & Behne, 2013: 30; Stüben, 2014a: 24 fig. HERcal.1LTF, 2014b: 4 [lectotype], 2016: 23 (pars) figs. HERcal1M, HERcal2; Alonso-Zarazaga *et al.,* 2017: 381.

Type locality: Fuerteventura, Canary Islands.

Material examined. **Fuerteventura**. "Fuerteventura" 5 exx leg. Ch. Alluaud (NMNH).– Chilegua 78 exx 1950 leg. H. Langacher, 2 exx 2/12-3-1949 leg. H. Lindberg (FMNH).– El Cotillo 5 m 1 ex 27-9-2014; leg. R. Valle (RVLL).– Barranco de La Torre 10 exx 17-4-1988; La Oliva 2 exx 29-11-1987 leg. M. Morales. Puerto Rosario 3 exx 12-5-1974; La Oliva 1 ex 7-5-1974, 1 ex 13-2-1977; Jandía 2 exx 9-5-1974; Valles de Ortega 1 ex 8-5-1974, 3

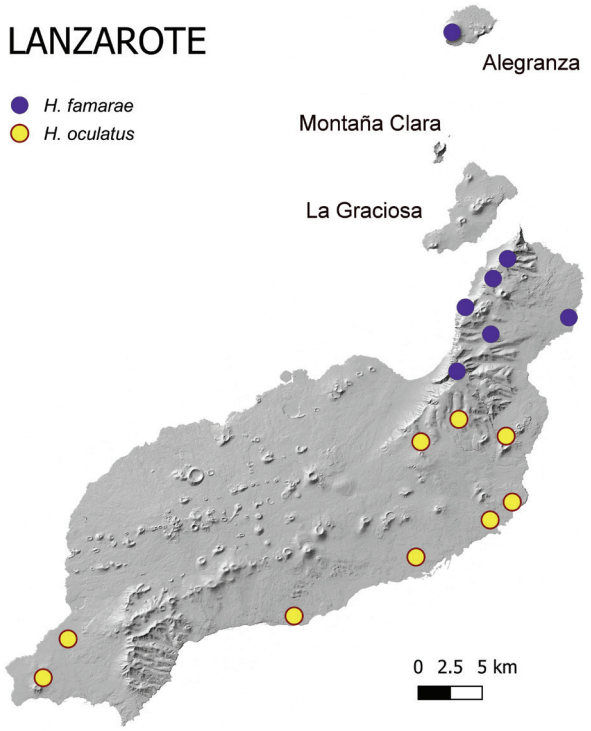

Fig. 14.— Presence of *Herpisticus* species in the island of Lanzarote.

Fig. 14.— Presencia de especies de *Herpisticus* en la isla de Lanzarote.

exx 14-2-1977 J.M. Fernández. Villaverde 1 ex 28-9-1977; La Oliva, 2 exx 13-2-1977; Valles de Ortega 1 ex 14-2-1977 leg. P. Oromí. Jandía 7 exx 5-8-1962 leg. R. Arozarena. Puerto Cabras, 2 exx 5-1986 leg. A. Machado. Pájara 8 exx 1-2-1965 leg. T. Bravo (TFMC).– Montaña del Cardón, 501 m (28°16′03″N 14°09′38″W) 1 ex 14-1-2019 [DNA 3267-PST | MN450155]; Jandía 1 ex 1-4-1983; Playa del Matorral 1 ex 7-2-1983; Playa de los Canarios 1ex 11-2-1992, 1 ex 2-1973; Barranco de La Antigua 1 ex 18-2-1983; La Oliva 1 ex 13-2-1977; Caleta de la Ballena 1 ex 27-4-1084; Jacomar 2 exx 26-2-1999 leg. P. Oromí. Pájara: Playa de la Jaqueta 1 ex 26-2-1990 leg. S. Scholz (POM).– Pico de la Zarza parking spot (28R564520 3180900) 1 ex 15-12-2016; Degollada de Marrrubio (28R 593557 31444312) 1 ex 11-7-2017 leg. D. Suárez (DSR).– Tuineje-Tarajalejo 59 m 12 exx 6-3-2011; La Oliva 211 m 2 exx 6-3-2011 (on Chenopodiaceae); Pájara: Fayagua 192 m 1 ex 6-3-2011 leg. A. Aguiar (AAC).– Costa Caleta 2 exx 20-2-2016 leg. R. Udrzäl (JC).– Pico de la Matanza 550 m 4 exx leg. E. Colonnelli (EC).– La Oliva: Playa Esquinzo 1 ex 31-3-2004; Jandía: Morro Barca 2 exx 2-12-2002, Barranco de la Cierva 4 exx 2-12-2002 leg A. J. Pérez (DZUL).– Barranco del Ciervo 1 ex 2-12-2002; Playa de Mal Nombre (28R 0570097 3106945) 7 exx 18-1-2007 leg. H. López. Valle de Ortega: El Jarde 160 m 1 ex 7-6-2006 leg. B. Rodríguez (HLH).– Tarajalejo 1 ex 14-8-1989; Montaña Tindaya 200 m 2 exx 27-1-1990; Montaña Cardones 300-400 m 14-5-1989; Tetir 1 ex 26-1-1989; Pájara-Esquinzo 40 m 1 ex 16-9-1989; Malpaís de Bayuyo 2 exx 19-11-1989 leg. St. Scholz. Barranco de la Torre 2 exx 27-4-1992 leg. M. Peña (MAPE).– Barranco del Mal Nombre 2 exx 5-3-2011; Majada Blanca 1 ex 5-2-2014; Tiscamanita 1 ex 25-2-2006; Tarajalejo; La Lajita 3 exx 6-3-2011; La Antigua 4 exx 27-3-2001; Caleta de Fuste 2 exx 5-3-2014 leg. R. García; La Oliva 1 ex 11-5-1974, Caleta de la Ballena 2 exx 26-4-1984 leg. P. Oromí; Barranco Los Canarios 15 exx 25-2-2019; Tabla Vinamar 567 m 1 ex (dead) 25-2-2019 leg. R. García (RGB).– Barranco de Esquinzo 145 m 18 exx 24-8-2019 leg. R. Valle (RVLL).– La Antigua 3 exx 12-1981 leg P. Schurmann. La Oliva 1 ex 8-3-2011; Puerto del Rosario 1 ex 20-11-1072, 1 ex 9-5-1986, 6 exx 9-7-1971; Betancuria 2 exx 9-7-1971; Valles de Ortega 3 exx 8-7-1971, Tefía 6 exx 9-7-1971; La Antigua 10 exx 8-7-31; Llanos de la Concepción 200 m 1 ex 27-1-2008 [DNA 10240F | MN432550]; Casas Jumillo 13 exx 6-3-2014; Malpaís Grande (km 2.8) 90 m 2 exx 8-2-2005 [DNA 10171F | MN432542]; Caleta de Fuste 1 ex 6-3-2012 [DNA 10300F | MN432563]; Barranco de La Torre 3 exx 1-3-2006 [DNA 10310F | MN432597, 10311F | MN432568, 10186F | MN432596] Playa del Matorral 1 ex 25-4-2004 [DNA 10155F | MN432540]; Fayagua 1 ex 6-3-2011 [DNA 10287F | MN432560]; Tarajalejo, 9 exx 10-11-1972, 6 exx 28-4-2002, 9 exx 6-3-2011; km 5 Tarajalejo - La Lajita 12 exx 28-4-2004 [DNA 10302F | MN432565]; Gran Tarajal 1 ex 8-6-1971; Barranco de Malnombre 2 exx 5-3-2011 [DNA 10285F | MN432559]; Jandía: Morro de los Canarios 50 m 2 exx 9-11-1971, Jandía: Tabla de Viñamar 1 ex 25-2-2019; Barranco de los Canarios 5 exx 15-1-2005 [DNA 10172F | MN432543], 193 m (28º07′11″N 14º18′44″W) 26 exx 25-2-2019 leg A. Machado (AMC). **Isla de Lobos**: 1 ex 11-5-1974 leg. A. Machado (AMC).

Redescription. *Herpisticus* small to intermediate in size (body size ♂ 7.5×2.65 mm - 9.8×3.7 mm), often of rather cylindrical appearance (elytra/ prothorax width ratio 1.28); integument black, shiny; fore-body and extremities usually dark with few scattered clear scales (two diffuse longitudinal bands on pronotum), and abdomen of generalised golden-beige colouration, spotted with contrasting scales; scales flat, tangential, large, polygonal, round or oval. Pilosity small and inconspicuous (1/2 claw), more uniform and denser than in *L. oculatus,* formed by 5-6 recurved hairs (tip almost touching integument) across the interstriae, overlapping longitudinally; no longer hairs at apex. Antennal flagellum about 1.7-1.9× length of scape; club L/W 2.8-2.9. Rostrum (L/W 0.8) slightly convergent apicad. Eyes a little oval (L/W = 1.16), moderately prominent (convexity 16-27%). Pronotum (L/W ♂ 0.82-0.88 with arcuate sides, widest at middle or just behind; integument (when devoid of scales) rather even and shiny, with flat corneoles (punctured appearance), mid-lateral oblique furrow marked, and three small larger punctures at each side of mid-line (the latter interrupted, usually hidden by scales); mid-line often present; collar conspicuous and latero-basal furrows deep and well-marked. Elytra oval-elongate (L/W 1.6-1.8 (some males may be as broad as females), not acuminate, 2.66-2.85× length of pronotum; less convex at dorsum, declivity starting near apical third; striae as broad as interstriae. Legs on outer face with denser and shorter pilosity than in *H. oculatus;* protibiae slightly longer than metatibiae (1.1×), with denticles little developed (3 tiny near apex, followed by 7 small ones), reduced to granules in meso- and metatibiae. Tarsi normal, with onychium (without claw) shorter than length of scape. Spiculum relictum of sternite VIII (Fig. 52C) with thin capitated arms.

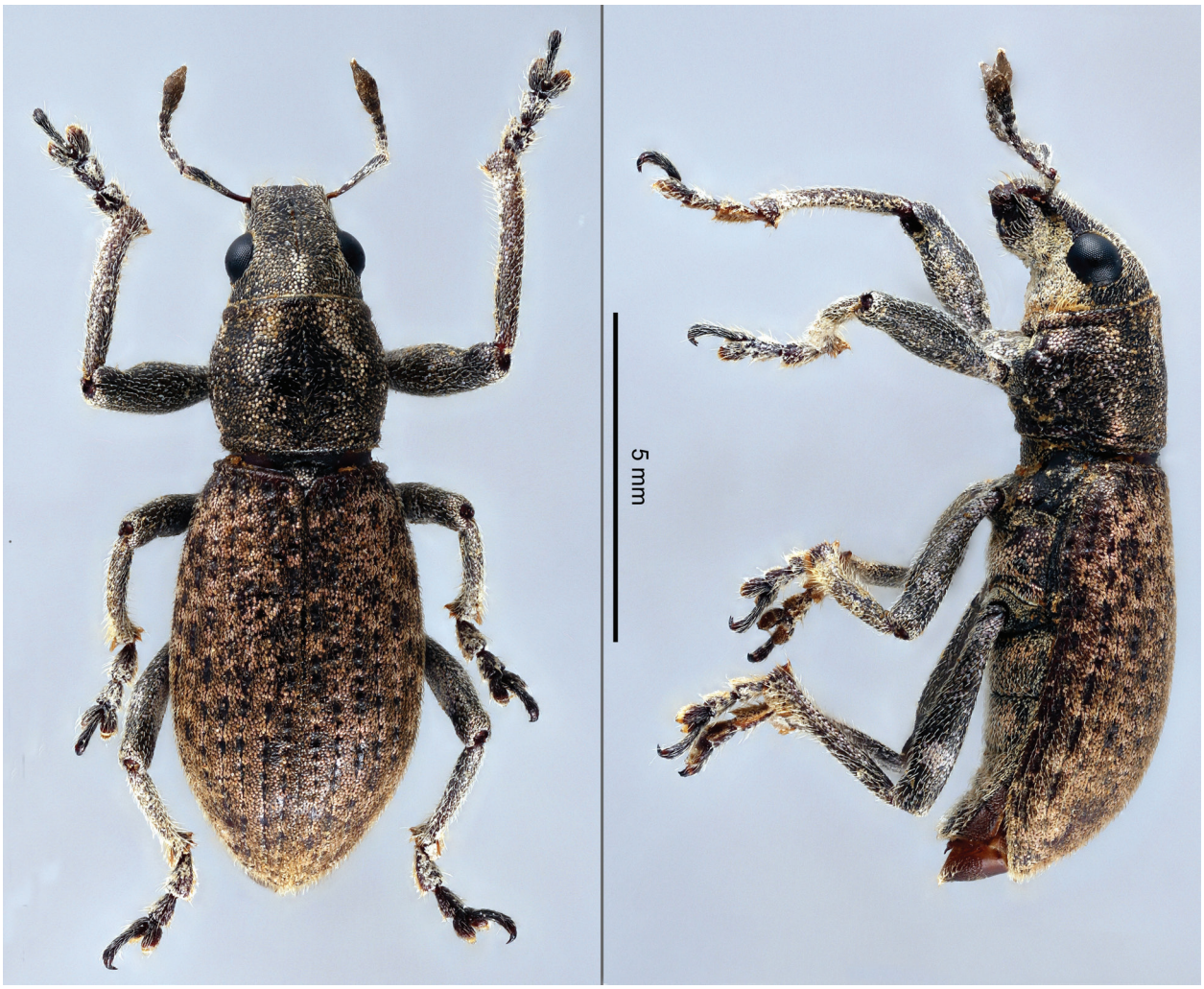

Fig. 15.— *Herpisticus calvus* Wollaston, 1864 ♂ (Fuerteventura, Tarajalejo).

Fig. 15.— *Herpisticus calvus* Wollaston, 1864 ♂ (Fuerteventura, Tarajalejo).

Penis (Fig. 53C) with apex briefly reflexed (lateral view); endophallus mid-section strongly bilobed and with basal lobes (Figs. 7G, 55B); tegmen (Fig. 57B) with sclerotised median dorsal projection; parameres broad.

Females similar to males, but much larger (body size 9.4×3.9 mm - 12.7×4.9 mm); pronotum L/W 0.79-0.81); elytra broader, subelliptical (L/W =1.7), and 3.32× length of pronotum; striae less marked. Tibiae more slender and less arcuate apicad; with denticles even less developed. Spiculum ventrale (Figs. 8D, 58C) with apical margin slightly angulate. Spermatheca (Fig. 59B).

Remarks. *Herpisticus calvus* can be distinguished from *H. oculatus* by its larger size, more contrasting colouration (fore/hind body), less prominent eyes, protibiae not so much longer than metatibiae, smoother surface of prothorax and elytra with more uniform, shorter and denser pilosity (more than 3 recurved hairs across an interval, overlapping longitudinally).

The single record of *H. calvus* from Gran Canaria (García, 1986) is a misidentification of *H. subvestitus pseudolanatus* n. ssp., and its presence on Lanzarote is questionable. Heer (1857) recorded *H. eremita* for Lanzarote and Fuerteventura. Later, Wollaston (1864) refers these records to *H. calvus* as he was able to inspect several beetles collected by Hartung and identified by Heer, but he received only one *Herpisticus* specimen from the Swiss entomologist, possibly that collected on Fuerteventura. So, the assumption he makes (Wollaston, 1865) that the Lanzarote specimen or specimens belong to *H. calvus* is not solid; they could well belong to either *H. oculatus* or to *H. famarae* n. sp. The females of *H. famarae* are much longer than those of *H. oculatus* and can easily be taken for *H. calvus.* On the other hand, Uyttenboogaart (1940)—who synonymised *H. calvus* and *H. oculatus* with *H. eremita*—highlighted a series of six specimens with prominent eyes and long hairs ("var. lanata Woll.") found in Fuerteventura. However, in his collection preserved at Leiden (NMNH), there is indeed a series of six specimens from Ch. Alluaud labelled

"Fuerteventura" from which five are true *H. calvus*, and only one is a hairy *H. subvestitus grancanariensis*. In the abundant material studied from many localities from the entire island (551 exx), we have found no trace of hairy *Herpisticus* on Fuerteventura and, as Alluaud also collected profusely on Gran Canaria (Alluaud, 1891), a labelling error is highly probable.

As previously commented in the genetic results, *H. calvus* seems to be geographically structured over the island, with a subpopulation on the mid-eastern coast, another widely spread in the centre, and another on the peninsula of Jandía. The K2P distance within these groups is 2.0-2.5% and between them it ranks 5.3-6.6%, which is high enough to consider them subspecies. Nonetheless, this species varies considerably in shape, and narrow tube-like males can coexist with broader more oval ones in the same locality. There are no good morphological characters that help distinguishing the genetic subpopulations, and the molecular sampling (n=14) does not cover the whole island (northerly parts and the islet of Lobos are missing) as to permit delimiting the extent of each subpopulation. Therefore, it is prudent to keep *H. calvus* as a monotypic species until a deeper study is conducted, but with one exception. A specimen collected in the massif of Betancuria occupies a basal sister position to the rest of the clade and shows an outstanding K2P distance of 9.7-11.6%, so to merit its description as a separate—almost cryptic—species, which follows next.

Distribution and ecology. *Herpisticus calvus* is endemic to the island of Fuerteventura and islet of Lobos (Fig. 19). A common animal under stones on arid land with clayey soils, scattered but can be locally abundant (fig. 49A). Collected at night on *Launaea arborescens*, *Kleinia neriifolia* and more common on woody Chenopodiaceae (*Salsola, Suaeda*, etc.). The parasitic mite *Leptus (Leptus) maxorata* Haitlinger, 2009 (Acari: Prostigmata: Erythraeidae) was discovered by the first author on specimens from Malpaís Grande.

Herpisticus betancuriae Machado **n. sp.**
urn:lsid:zoobank.org:act:87E44EE1-B6B8-4C9D-A0FF-2ACC2224F57D
Figs. 16, 53D, 58D
Proposed Spanish common name: *Gorgojo gandul de Betancuria*

Type locality: Betancuria. Fuerteventura, Canary Islands.

Material examined. Holotype: **Fuerteventura**. Betancuria 2.5 km S (28º24′13″N 14º03′37″W) 321 m 1♂ 8-2-2019 leg. P. Stüben (TFMC/CO-16030).– Paratypes: 8 exx [DNA 3258-PST | MN450154] same collecting data (7 PS, 1 AMC).– Betancuria: Montaña de la Cruz 1 ex 5-11-2005 leg GIET (DZUL).– Betancuria 1♀ 18-2-1995 leg. P. Oromí (POM).– Betancuria: Monte Veloso 2♂♂ 28-2-2006 leg R. García (RGB).– Betancuria: Degollada de Tegetuno 583 m (28R 593557 3144312) 1 ex 11-7-2017 leg. D. Suárez (DSR).– Betancuria 400 m 2 exx 9-2005; Betancuria: Castillo de Lara 450 m 2 exx 11-4-2010, 64 exx 26-8-2019 (*Salsola*) leg. R. Valle (25 RVLL, 42 AMC).— Non-paratypes: Betancuria 1 ex 11-3-1939 leg. H. Lindberg (FMNH). Las Peñitas 1 ex 3-10-1933,1 ex 18-11-1934, 4 exx 3/6-3-1935; Betancuria 1 ex 3-3-1935; road to Betancuria 2 exx 6-3-1935; Vega de Río Palmas 1 ex 10-3-1935 leg. A. Cabrera (MNCN); Vega de Río Palmas 8 exx 12-2-1977 leg. J.M. Fernández; same locality 36 exx 7-8-1962 leg. R. Arozarena (TFMC).– Embalse de Las Peñitas 3 exx 15-2-2017; Vega Río Palmas 135 m, 1 ex 15-2-2017 leg M. Daccordi (AMC).– Presa de las Peñitas 1 ex 5-8-1989 leg. St. Scholz (MAPE).– Vega de Río Palmas 1♀ 28-2-2006 leg. R. García (RGB).

Description. *Herpisticus* of moderate size (body size ♂ 8.7×3.2 mm - 10.5×4.2 mm) and similar appearance as *H. calvus*, but darker, usually with very few scattered isolated coppery scales (on elytra forming small patches of 3-9 scales); integument black and shiny beset with a dense cover of small recurved setae (1/2 length of a claw), devoid of longer hairs at apex. Antennal flagellum ≥ 2× length of scape; club L/W = 3. Rostrum (L/W 0.8) converging apicad, with dorsolateral margins more sharply rimmed than in *H. calvus* (blunt), and sides above scrobe less vertical and more visible from above; base broader (ratio rostrum width at base / interocular distance usually > 1.15). Eyes a little oval (L/W 1.12), more prominent (convexity 30%). Pronotum (L/W 0.86) with more or less curved sides, widest at middle or just behind; sculpture as in *H. calvus*, with mid-line usually marked. Elytra oval-elongate (L/W 1.8), not acuminate, rarely subparallel; striae rather conspicuous with large punctures, interstriae usually subconvex and outstanding. Tibiae with denticles a trifle more developed, but not always; hairs on outer side of protibiae slightly longer. Spiculum relictum of sternite VIII with thin capitated arms. Penis (Fig. 53D) with apex almost straight (lateral view); endophallus as in *H. calvus,* slightly less bilobed; tegmen without short dorsal projection between parameres; parameres broad.

Females as males, but larger and broader (body size 10.5×4.1 mm - 12.1×4.8 mm); pronotum L/W 0.76; elytra broader, subelliptical (L/W 1.65), and 3.32× length and 1.5× width of pronotum; striae less marked; legs slenderer. Plate of spiculum ventrale with emarginate margin at apical third (Fig. 58D); spermatheca as depicted for *H. guayarmina* (Fig. 59K), with slightly longer ramus.

Etymology. The specific term "betancuriae" refers (in genitive) to the old island capital and now village of Betancuria, which gives its name to the massif where the species lives. This first settlement was so named after Jean de Bethencourt, the Norman knight that conquered the island in 1405.

Remarks. This species could be considered an almost cryptic taxon, as the morphological differences with

Fig. 16.— *Herpisticus betancuriae* n. sp. holotype ♂ (Fuerteventura, Betancuria).

Fig. 16.— *Herpisticus betancuriae* n. sp. holotipo ♂ (Fuerteventura, Betancuria).

H. calvus are subtle, particularly within the wide variation range of the latter. The edged or blunt lateral margins of the rostral dorsum are not easy to distinguish unless specimens of both species are available to compare. Doubtful specimens can be discerned by dividing the rostrum width at its base by the interocular distance. In *H. betancuriae* n. sp. this ratio usually falls in the range of 1.15-1.17, while it is below 1.15 in *H. calvus,* and the exceptions are few. Moreover, the antennae are longer in *H. betancuriae*, and their flagellum is at least twice the length of the scape, while in *H. calvus* it is less (1.7-1.9×).

Distribution and ecology. *Herpisticus betancuriae* n. sp. is endemic to the island of Fuerteventura, living apparently restricted to the massif of Betancuria, along its interior valley, but not reaching Pájara in the south (Fig. 19). This massif represents the basal complex of the island and is considered the oldest emerged part of the Canarian archipelago (ca. 20 Ma).

The new species dwells in arid and semiarid habitats and is allopatric with *H. calvus*, despite their sharing the same ecology.

Herpisticus jandiensis Machado **n. sp.**
urn:lsid:zoobank.org:act:4D3A14D5-6D4C-43D9-A4C8-852F06E1C334
Figs. 17, 52F, 53E, 59C
Proposed Spanish common name: *Gorgojo gandul de Jandía*

Type locality: Cumbres de Jandía, Fuerteventura, Canary Islands.

Material examined. Holotype: **Fuerteventura**. Cumbres [summits] de Jandía (28º05′41″N 14º21′55″W) 1♂ 4-5-1975 leg.

Fig. 17.— *Herpisticus jandiensis* n. sp. ♂ (Fuerteventura, Pico Jandía).

Fig. 17.— *Herpisticus jandiensis* n. sp. ♂ (Fuerteventura, Pico Jandía).

P. Oromí (TFMC/CO-16031).– Paratypes: Cumbres de Jandía 1♀ 15-2-1977 leg. P. Oromí (TFMC).– Cumbres de Jandía 1♂ 15-2-1977; Valle del Ciervo 1♂ 17-2-1995: Pico de la Zarza 1 ex 18-1-2007 leg. P. Oromí (POM).– Pico del Mocán 600 m 1 ex 15-2-1989; Pico del Fraile 500 m 3 exx 30-4-1989 leg. St. Scholz (MAPE).– Jandía: Barranco del Ciervo, summit 3 exx 4-4-2004 leg. H. López (DZUL, HLH, AMC).– Cofete: below Pico de la Palma 1 ex 4-4-2004 leg. H. López (HLH).– Jandía: Barranco del Ciervo, 300 m (28º05′19″N 14º22′19″W) 2 exx 26-2-2019 [DNA 10336F | MN432585] leg. R. García (RGB).– Jandía, Morro del Puerco 560 m 4 exx 26-8-2019 leg. R. Valle (RVLL).– Pico del Fraile 500 m 1 ex 30-4-1989 leg. St. Scholz. Cumbre barranco del Ciervo 1♂ 2-12-2001 [DNA 10120F | MN432537] leg. A. Machado (AMC).

Description. *Herpisticus* of moderate size (body size ♂ 9.7×3.8 mm - 10.6×4.2 mm), long-ovate; integument black and shiny, flattish corneolate; general colouration dominantly dark (scales deciduous), elytra with variable patches of scales; scales round, small and separated (pink, coppery, blue, beige, white, etc.); pilosity uniform but inconspicuous, hairs flat, recurved and very small (1.5× scale diameter) on elytra, pronotum and also on external face of femora and tibiae, not or little overlapping. Antennal flagellum as long as twice the scape; club L/W about 2.8. Rostrum of rather trapezoidal appearance (L/W about 0.8), sides convergent apicad; paraepistome more or less abruptly depressed; median sulcus deep and broad, with a shallow longitudinal line on each side (apical half); lateral margins blunt, area between them and upper somewhat carinate margin of scrobes depressed, forming a step. Eyes a little oval (L/W 1.09), moderately convex (24-26%); post-ocular vibrissae short, not longer than width of anterior rim of prothorax. Pronotum (L/W 0.81-0.82) with sides little arcuate, widest at middle; anterior and basal

margins broad, basal constriction brief, with little marked angular tooth; disc without pits or median line; lateral linear impressions deep and long, and some shallow transverse rugosity. Scutellum triangular, blunt. Elytra oval-acuminated (L/W 1.6), widest at middle, about 2.77× length of pronotum, with smooth declivity; striae with large punctures in basal third; external interstriae slightly subconvex; with 4-5 hairs across. Protibiae with small denticles as in *H. calvus*, little longer (> 1.06×) than metatibiae; meso- and metatibiae crenulated. Spiculum relictum of sternite VIII with arms shorter than base and sclerotised in distal half (Fig. 52F). Penis triangular at apex, tip blunt, almost straight in lateral view (Fig. 53E).

Female as male, larger (body size 11.6×4.8 mm); rostrum of trapezoidal appearance, pronotum L/W 0.82-0.83; elytra inflated (L/W 1.46), more curved laterally, elliptical in appearance, about 3.32× length of pronotum. Protibiae with reduced denticles, absent in meso- and metatibiae. Spermatheca (Fig. 59C).

Etymology. The specific term "jandiensis" refers to the peninsula of Jandía in Fuerteventura, where the species lives.

Remarks. The K2P genetic divergence between *H. jandiensis* and *H. calvus* is greater (> 14%) than with species from other islands, like *H. guanarteme* n. sp. (12.1%) and *H. denudatus* n. sp. (11.9%) from Gran Canaria or *H. famarae* n. sp. (12.9%) from Lanzarote. In size and shape it resembles the latter, which likewise has a rostrum with weakly defined lateral margins, but less elliptical elytra, slightly longer hairs and longitudinal rugosity all over the rostral dorsum. *Herpisticus jandiensis* n. sp. is easy to distinguish from the other species living on Fuerteventura by the very small non-protruding recurved setae on femora and tibiae, and by a lateral step on its rostrum.

Distribution and ecology. Endemic to the island of Fuerteventura, where it lives on the summits of the peninsula of Jandía, in the extreme south, whereas *L. calvus* lives on the same peninsula but at lower altitude (Fig. 19). These summits of the Jandía massif have sufficient elevation (Pico de la Zarza, 807 m altitude) to receive the direct influence of the clouds formed by the trade wind, maintaining a more humid habitat in strong contrast with the xeric habitats of the rest of the island. There are many endemic species of beetles restricted to this narrow biodiversity hotspot.

Herpisticus rectipes Machado **n. sp.**
urn:lsid:zoobank.org:act:B315E9D3-822B-4764-8549-6EBBFC153986
Figs. 6D-E, 18, 53F, 58E
Proposed Spanish common name: *Gorgojo gandul del Jable*

Herpisticus calvus (pars), in Stüben, 2016: 23, fig. HERcal1F [♀].
Type locality: Istmo de la Pared. Fuerteventura, Canary Islands.

Material examined. Holotype: **Fuerteventura**. Istmo de La Pared: Loma del Granillo 40 m (28º11′01″N 14º12′54″W) 1♂ 25-2-2019 (*Ononis*) leg. A. Machado (TFMC/CO-16032).– Paratypes: Same collecting data 4 exx [DNA 10338L | MN432586] (AMC).– Pájara: Istmo de La Pared 100 m (28º12'06"N 14º13'10"W) 2 exx 9-3-2011 (*Ononis*) leg. A. Aguiar (AAC).– Istmo de La Pared: Lomo Negro 65 m 1♀ 9-3-2011; Loma del Granillo 40 m 4 exx 26-2-2019 leg. R. García (RGB).– Jandía: Risco del Paso 16 m 1 ex 5-1-2015 [DNA 2730-PST | MH051984] leg. P. Stüben (ZFMK).– Costa Calma: Barranco de la Barca 12 m (28°7′25″N 14°15′20″W) under Chenopodiaceae 1 ex 11-1-2015 leg. Stüben. Costa Calma 4 exx 3-11-1997 leg. Müller (PST).– Costa Calma: el Jable 100 m 1 ex 21-5-2011; Istmo de La Pared: Lomo Negro 4 exx 27-8-2019 (*Lotus, Ononis*) leg. R. Valle (RVLL).– Costa Calma: Degollada de los Verodes 92 m (28º08'55"N 14º14'48"W) 13 exx 9-9-2019 (*Suaeda)* leg. M. Arechavaleta (1 AAC, 12 AMC).

Description. *Herpisticus* of small size (body size ♂ 7.0×2.9 mm - 8.1×3.2 mm), long-ovate; scaling of light patchy colour (whitish, beige or pale blue) if scales not missing (deciduous); scales round and polygonal, tangent; pilosity inconspicuous, hairs bent, scarce and tiny, about as long as one 1-1.5 scale diameter, 2-3 hairs across an elytral interstriae; suberect on tibiae and femora. Antennal flagellum 1.9× length of scape; club oval (L/W 2.7). Rostrum slightly convergent apicad (L/W 0.77-84), with flat dorsum and broad median sulcus, surrounded by a middle groove. Eyes slightly oval (L/W 1.13), moderate in convexity (26-28%); post-ocular vibrissae long (clearly longer than width of anterior rim of prothorax). Pronotum (L/W 0.76) with sides arcuate or curved, widest at middle or behind; anterior postmarginal depression marked; posterior angular tooth small; median sulcus fine and complete, no discal pits; lateral groove distinct. Scutellum small, not raised, long-triangular. Elytra broad-elliptical, bulky in appearance (L/W 1.6), widest at middle, narrowed basally, about 3× length of pronotum and 1.5 its width, with declivity starting at middle; anterior rim complete but not very abruptly raised (no basal sulcus and humeral tooth moderate); striae as wide as interstriae. Abdominal transversal convexity about 77%. Legs long and slender; profemora inflated, clearly wider at middle than apically (1.5×), more than in *H. oculatus* (1.3×); protibiae longer than metatibiae (1.11×), straight apically, somewhat narrowed preapically and slightly bent at middle, truncate at apex with inner and outer angles right or slightly protruding outwards; denticles on inner rim very small (crenulate); meso- and metatibiae with smooth inner rim; tarsi slender with elongated onychium, as long (without claw) as scape. Spiculum relictum of sternite VIII (Fig. 6F) monopodic with Y-shaped distal sclerotisation. Penis (Figs. 6D-E,

53F) with oval apex, not expanded laterally, and tip almost straight; base of transfer apparatus U-shaped. Tegminal ring narrow, with inicipient dorsal projection between the parameres; parameres very broad at base, tappering.

Female as male, but larger (body size 8.4×3.7 mm - 9.9×4.3 mm); pronotum L/W 0.8; elytra L/W 1.5 and 2.75 length of pronotum. Crenulation of protibiae almost vanished. Spiculum ventrale (Fig. 58E) with rounded plate, as in *H. oculatus*.

Etymology. The specific epithet *rectipes* is an invariable Latin adjective composed of the terms "rectus" (straight) and "pes" (foot), in reference to the straight fore tibiae characteristic of this species.

Remarks. *Herpisticus rectipes* is apparently as small as or even smaller than *H. oculatus*, although the series available are too limited to confirm this. It is equally long-legged but with broader elliptical elytra. It can easily be separated from any other species of *Herpisticus* by its elongated onychia and its straight and flattish protibiae, truncated apically, with the outer angle right or even protruding outwards. The hairs on protibiae are stiff and suberect, while in *H. calvus* they are recurved. The clear coloured scaling is probably related to the calcareous-sandy ground where it lives, a tendency in this genus that was already commented on by Wollaston (1864).

Among all the *Herpisticus* species inhabiting the eastern Canaries, *H. rectipes* n. sp. is the most divergent morphologically. Its relationship to any of them is obscure, as it clusters very closely in the COI

Fig. 18.— *Herpisticus rectipes* n. sp. ♂ and ♀ (Fuerteventura, Istmo de la Pared).

Fig. 18.— *Herpisticus rectipes* n. sp. ♂ and ♀ (Fuerteventura, Istmo de la Pared).

phylogram with specimens of *H. calvus* from the same region, southern Fuerteventura (Fig. 3, clade C). This is probably due to a mitochondrial introgression, as postulated in the section of Genetic Results. An alternative to this hypothesis would be incomplete lineage sorting, if we attribute a recent speciation to *H. rectipes* and explain its greater morphological disparity by forced differentiation due to habitat shift (elongation of onychium to walk on sand, for instance). In support of this possibility, the aeolian sandy environment of El Jable in the Istmo de la Pared is of Pleistocene and recent origin, much younger than the Miocene shield basalts north and south of it (Carracedo & Troll, 2016).

Distribution and ecology. Endemic to Fuerteventura and located in the sandy belt that separates the southern peninsula of Jandía from the rest of the island (Fig. 19), whereas its presence in the two other nearest sandy sectors, Jable de Vigocho and Jable de la Angostura, has not yet been checked. Specimens have been found on *Ononis natrix*, on *Launaea spinosa*, on *Suaeda vera,* and under stones (Fig. 49B).

Herpisticus lanatus Wollaston, 1864, **bona species**
Figs. 20, 25H, 55C, 58F, 59D
Proposed Spanish common name: *Gorgojo gandul lanudo*

Herpysticus eremita var. *γ lanata* Wollaston, 1864: 371; Heyden, 1875: 143.
Hypersticus eremita, in Cott, 1934: 321 [possibly].
Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45.
Herpisticus grancanariensis (pars), in Palm, 1974: 35, fig. 2F.

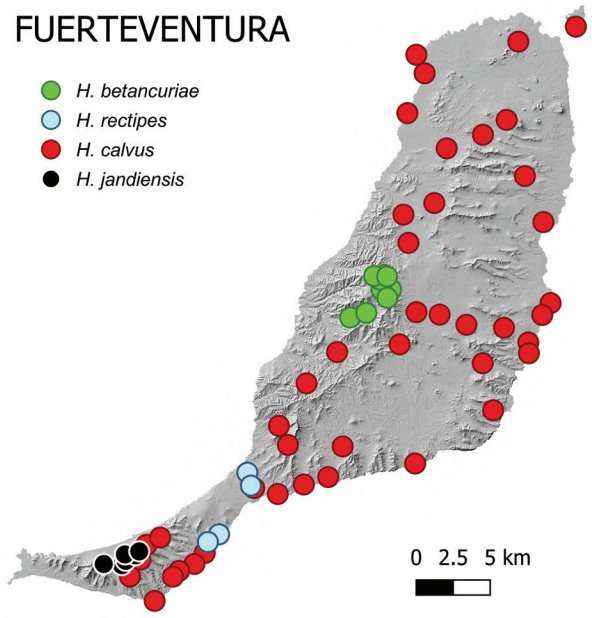

Fig. 19.— Presence of *Herpisticus* species in the island of Fuerteventura.

Fig. 19.— Presencia de especies de *Herpisticus* en la isla de Fuerteventura.

Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpisticus subvestitus (pars), in Stüben & Behne, 2013: 30; Alonso-Zarazaga *et al.,* 2017: 381.
Herpisticus eremita lanata (f. γ), in Stüben, 2014a: 94, figs. HERlan.1LTM, HERlan.2LT, 2014b: 4 [lectotype ♂ designation].

Type locality: Maspalomas, Gran Canaria, Canary Islands.

Material examined. **Gran Canaria**. Maspalomas 1♂ (lectotype des. P. Stüben) leg. T.V. Wollaston (NHM).– Maspalomas 1 ex 2-6-1963; Fataga 1 ex 9-3-1977 leg. J.M. Fernández. Pajonales 6 exx 13-2-1994 leg. M. Morales. (TFMC).– 6 km N of Maspalomas 2 exx 17-12-2015 leg. O. Konivicka; 1.7 km S Arteara 428 m 1 ex 29-1-2016; Degollada de las Yeguas 2 exx 29-1-2016 leg. J. Krátky (JK).– Maspalomas (28R 441740 3069297) 1♀ [DNA GC161 | MN432588] 25-4-2002 leg. H. López; Barranco de Arguineguín (28R 434256 3075234) 2 exx [DNA GC189 | MN432590] 16-3-2002 Juncalillo del Sur (27°47′29″N 15°29′55″W) 4 exx [DNA GC191 | MN432592] 16-3-2002 leg. P. Oromí & H. López (DZUL).– Ojeda 1 ex 10-11-1996; Barranco de Mogán, El Palmito 1♀ 16-3-2002 leg. P. Oromí (POM).– Arteara 2 exx 22-2-2009 leg. R. García (RGB).– Barranco de Mogán (7th bus stop) 3 exx 17-3-2002 leg. H. López. Juan Grande 1♀ 17-8-2001 leg. López & Contreras (DZUL).– Inagua 1 ex 23-4-2011 leg. H. López (HLH).– Tarajalillo: Playa del Cardón 1 ex 6-1984 2 exx 22-2-2009; Barranco de Fataga 375 m, 1♂ 2♀♀ 10-12-2000 (*Kleinia*); Arteara km 48, 425 m 3 exx 22-2-2009 [DNA 10253C | MN432553]; km 42 infra Degollada de las Yeguas 506 m (27º49º05″N 15º34′45″W) 1 ex 7-12-2018 (*Kleinia*); El Tablero: El Salobre 135 m (27º 46′23″N 15º37′26″W) 22 exx 11-7-2019 (*Vitis*); Mogán: Presa del Mulato, 740 m 1♀ 20-6-1985 (doubtful); La Plata: El Laderón 1170 m (27º56′19″N 15º36′55″W) 1 ex 11-7-2019 [DNA 10019C | MN432524] leg. A. Machado (AMC).

Redescription. *Herpisticus* of intermediate size (body size ♂ 8.5×3.0 mm - 11.0×3.9 mm); body elongate and narrow (elytra/prothorax width ratio 1.26-1.32); of testaceous-brown colouration, forebody darker and abdomen (patchy pattern) lighter; scales large, roundish (some occasionally oval), subconvex, and tangent. Pilosity very dense and conspicuous (woolly appearance) formed by a mix of shorter inclined and longer erect silky hairs (1-2.5× tarsal claw), often irregularly shaped or arcuate pointing forwards; 6-7 across elytral interval, long at base but longer towards apex (apical tuft not differentiated); hairs less developed but also protruding on head, pronotum (in profile view), and on legs (hairy tibiae). Antennal flagellum slightly longer than twice the scape; club slender (L/W 3.3). Rostrum slightly convergent apicad (L/W 0.81); rostral sulcus deep on epifrons, narrow on forehead and not surpassing mid-eye level. Eyes a little oval (L/W = 1.1), moderately prominent (convexity 22-25%). Pronotum (L/W 0.83) with evenly arcuate sides, usually widest at middle; collar conspicuous and latero-basal furrows little developed (no angular tooth). Elytra narrow, elongate (L/W 1.82) widest behind middle; dorsally

flat with soft declivity towards apex; punctures of striae small. Elytra/pronotum length ratio 2.7-2.8. Protibiae slightly longer (1.1×) than metatibiae; protibiae with 3-4 strong denticles and 1-2 smaller ones in the intervals, shorter on mesotibiae; metatibiae crenulated. Penis tube (Fig. 53H) almost uniformly arcuate; apex moderately curved (lateral view) and tapering (dorsal view), tip slightly twisted to one side; everted endophallus with bulb-shaped median part (Fig. 55C). Tegminal ring between parameres broad, without dorsal median projection. Spiculum relictum of sternite VIII with short thin arms.

Females as males but larger and broader (body size 10.9×4.2 mm - 12.7×5.0 mm); pronotum wider (L/W 0.79): elytra wider (L/W 1.72) but clearly longer and apically subacuminate (elytra/ prothorax length ratio 3.2m, width ratio 1.47); less hairy, with shorter curved hairs intermixed with erect longer hairs that persist mainly in apical half of elytra. Pigidium covered by dense pubescence. Protibiae usually with only 3 conspicuous denticles. Spiculum ventrale (Fig. 58); spermatheca (Fig. 59D).

Remarks. There is a COI K2P distance of 8.3-10.5% between this species and *H. subvestitus pseudolanatus* n. sp., despite their striking resemblance (Fig. 22). Both have a woolly appearance due to the dense and very long upraised pilosity over the entire elytra, and shorter but equally conspicuous on pronotum, head and legs. *H. lanatus* tends to be larger, the males not so narrow, the sides of pronotum usually less rounded, and the eyes less convex (20-25% vs 25-28% in *pseudolanatus*). However, these differences are hard to gauge even with several specimens for comparison, as

Fig. 20.— *Herpisticus lanatus* Wollaston, 1864 ♂ (Gran Canaria, Degollada de la Yegua).

Fig. 20.— *Herpisticus lanatus* Wollaston, 1864 ♂ (Gran Canaria, Degollada de la Yegua).

they may overlap due to their respective variation. The apex of aedeagus is a little less curved, more acute (in dorsal view) and slightly twisted in *H. lanatus,* and the mid-section of its endophallus is not cordiform but bulb-shaped, characters that are not easy to inspect. Nonetheless, the geographical location of specimens may be a useful practical criterion. All specimens originating in the older western part of Gran Canaria (9-14 Ma, Miocene phase with phonolites and trachytes) belong to *H. lanatus,* while those of *H. subvestitus pseudolanatus* n. ssp. are restricted to the younger eastern part (Pliocene and Quaternary phase with basanites and alkali basalts), where the eastern margin of the Amurga massif, near the Tirajana ravine, acts as a factual separating border.

Other *Herpisticus* species of woolly appearance, like *H. aridicola* n. sp. from Tenerife, or *H. hispidus* n. sp. from La Gomera can be separated by their penis being slightly bent at the apex, instead of curved as in *H. lanatus* and even more curved in *H. subvestitus pseudolanatus* n. ssp.

Distribution and ecology. Endemic to Gran Canaria and distributed in the south-west sector of the island (ancient part), between the ravine of Tirajana and the ravine of Mogan (Fig. 33). It can be found in diverse kinds of arid and semiarid habitats from the coastal and lower zones, up to lofty elevations bordering the pine-forest in the mountains. It has been obtained by beating *Kleinia neriifolia* at night, but most specimens were collected from below stones. Occasional damage to pumpkin fields has been reported near Maspalomas.

Herpisticus subvestitus subvestitus Wollaston, 1864
Figs. 22, 25A, 52D, 53I, 55D, 57F, 58-G, 59E.
Proposed Spanish common name: *Gorgojo gandul de Tirajana*

Herpysticus eremita var. *ß subvestita* Wollaston, 1864: 371; Heyden, 1875: 143.
Herpysticus eremita (pars), in Wollaston, 1865: 333.
Herpisticus eremita v. subvestita, in Uyttenboogaart, 1937: 110.
Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45.
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpisticus eremita subvestita (pars), in Gurrea & Sanz, 2000: 334.
Herpisticus subvestitus (pars), in Machado & Oromí, 2000: 79; Oromí *et al.,* 2001: 211, 2004: 224, 2010: 272; Ren *et al.,* 2013: 394; Stüben & Behne, 2013: 30; Stüben, 2014a: 94, fig. HERsub.1LTM, HERsub.2LT; Alonso-Zarazaga *et al.,* 2017: 381.
Herpisticus eremita subvestita (f. *β*), Stüben, 2014b: 4 [lectotype designation]

Type locality. "Larajana" [= Tirajana]. Gran Canaria, Canary Islands.

Material examined. **Gran Canaria**. Tirajana 1♂ (lectotypus des. P. Stüben) leg. T.V. Wollaston (NHM).– Tirajana 1 ex 5-1934; Cruz de Tejeda 1 ex 5-1934 leg. A. Cabrera (MNCN).– San Bartolomé de Tirajana 7 exx 14-3-1950; Majada Alta 3 exx 7-6-1057; Arteara 1 ex 30-3-1949; between Pozo de las Nieves and Tejeda 1950 m 3 exx 13-3-1950 leg. H. Lindberg (FMNH).– Barranco de los Cernícalos 3 exx 19-6-1985 leg. A. Aguiar (TFMC).– Cruz de Tejeda 2-6-1999; Cazadores 1 ex 1-10-1999; Ingenio: La Pasadilla 750 m 2 exx 26-7-199, 1 ex 13-8-1999, 1 ex 16-8-1999 leg. H. López (HLH).– Tejeda 1 ex 25-12-1974; Caldera de los Marteles 15-3-1981 leg. M. Peña (MAPE).–Supra Tejeda, 1520 m 1 ex 5-12-2002 leg. A. Aguiar (AAC).– Pinar de Tamadaba a Monte Inagua 1♂ 3-4-1985 leg. R. García. San Bartolomé 1 ex 30-12-1988 leg. P. Oromí (POM).– Tenteniguada (28R 448114 309342) 1♂ 29-7-2017 leg D. Suárez (DSR).– Guayedra 3♀ 23-10-1987 leg. R. García (RGB).– San Bartolomé de Tirajana: El Sequero, 1034 m (27º55′56″N 15º34′39″W) 5 exx 7-12-2018 (*Teline*) [DNA 10321C | MN432574], 11 exx 11-7-2019. Tejeda: Cuevas Blancas: Los Cascajales 1705 m (27º 57′46″N 15º32′51″W) 1 ex 11-7-2019 (*Teline*) [DNA 10017C | MN432523]; Ayacata: path to Roque Nublo 1580 m 2 exx 11-3-2015 leg. H. López (IPNA).– La Aldea cemetery 180 m (27º18′59″N 15º47′3″W) 6 exx 25-4-2010 (*Atriplex halimus*) leg. A. Machado (AMC).

Redescription. *Herpisticus* of intermediate to large size (body size ♂ 11.8×4.0 mm - 12.3×4.9 mm), oblong in appearance (elytra/pronotum width ratio 1.34). Vestiture dominantly greenish or brown, variable; usually devoid of pink scales on femora; scales polygonal, subconvex, and separated; elytra with cover of depressed bent hairs of different sizes (about as long or longer than a claw), overlapping irregularly, with apical tufts; hairs shorter on head and pronotum; short and hardly overlapping on femora; on outer edge of tibiae not longer than their diameter. Antennal flagellum 2.16× length of scape; club elongate (L/W 3.2). Rostrum (L/W 0.86) slightly convergent apicad, lateral margins not sharply defined and antero-lateral angles blunt. Eyes almost round, moderately prominent (convexity 24%). Pronotum (L/W 0.85) with sides arcuate, widest about middle, base briefly constricted without marked angular tooth; dorsum rather even (less sculptured than in *H. grancanariensis*), discal pits inconspicuous. Scutellum usually U-shaped. Elytra rather elongate (L/W 1.9), about 2.9× length of pronotum (lectotype); dorsum flat (occasionally slightly depressed at disc); widest at middle or slightly behind, sides arcuate until apical third, wider at base and somewhat acuminate (less acuminate than in *H. guanarteme* but more than in *H. subvestitus grancanariensis*); interstriae at disc wider than striae. Abdominal longitudinal declivity starting at apical 1/3; transversal convexity about 77%. Protibiae with many denticles (usually starting apically with four short ones, then four strong denticles each followed by two smaller ones); meso- and metatibiae (not always) with small denticles or granules. Spiculum relictum of sternite VIII with base narrower than length of arms (Fig. 52D). Penis tube (Fig. 53I) only slightly arcuate

in middle third, with apex notably recurved and in dorsal view acuminate (tip stronger than in *H. subvestitus grancanariensis*); mid part of endophallus widely bulb-shaped (Fig. 55D); tegmen with short manubrium short and apodeme between parameres (Fig. 57F).

Females like males, but larger (body size 12.3×5.0 mm - 14.4×5.9 mm) and with pilosity shorter and less widely spread; pronotum broader (L/W 0.81), elytra wider, more rounded laterally and widest behind middle (L/W 1.78). Ventrite 5 densely pubescent, with a median tuft of strong setae at base. Plate of spiculum ventrale (Fig. 58G) short, with apical margin slightly emaginate in middle third. Spermatheca with short collum (Fig. 59E).

Remarks. Wollaston characterised his var. *β subvestita* as having "long silky erect hairs mostly in apical half of elytra, but not many". However, the lectotype designated and photographed by Stüben (Stüben, 2014a) has long silky hairs over the entire elytra, although not so erect and perhaps slightly longer apicad. The Wollaston label of the lectotype depicted by Stüben (*op. cit.*) reads "Larajana", which can only refer to the village of San Bartolomé de Tirajana, located in the large circus bearing the same name Tirajana, which forms part of the central mountain ridge of the island. Specimens collected in this area belong either to *Herpisticus subvestitus subvestitus* or to *H. guanarteme* n. sp., and both have hairy elytra. The former can be recognised by its shorter and slightly convergent rostrum with blunt antero-lateral angles, while the latter has a longer, squarish and parallel-sided rostrum with more sharply angulated dorsal margins, and its suberect pilosity is more uniformly spread over the entire elytra (hairs not twisted).

Having fixed the morphological concept of *H. subvestitus*, the COI molecular analysis (Fig. 3, clade K) reflects that *H. subvestitus* from the type locality of Tirajana is related to a complex of genetically differentiated populations from the lower zones, which cluster together and separated from *H. lanatus,* which was considered one of its synonyms. Figure 22 shows the range of COI K2P distance among them, supporting the resurrection of *grancanariensis* Palm, 1974 as subspecies of *H. subvestitus* (previously also considered a synonym), with a 4.5-5.9% genetic distance, and the establishment of *H. subvestitus pseudolanatus* n. ssp. with a similar

Fig. 21.— *Herpisticus subvestitus subvestitus* Wollaston, 1864 ♂ (Gran Canaria, San Bartolomé).

Fig. 21.— *Herpisticus subvestitus subvestitus* Wollaston, 1864 ♂ (Gran Canaria, San Bartolomé).

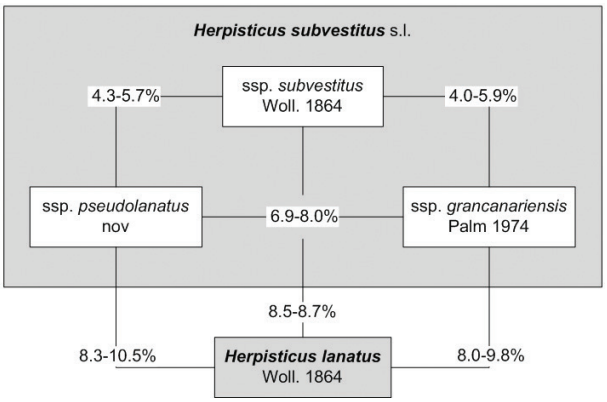

Fig. 22.— COI K2P distances in the *Herpisticus subvestitus* complex.

Fig. 22.— Distancia K2P COI en el complejo de *Herpisticus subvestitus*.

4.3-5.7% distance. The distance from *H. lanatus* is higher (8.3-10.5%), in the range justifying a separate species status.

The nominotype *subvestitus* can be confused with *H. subvestitus grancanariensis*, but the former is a more robust animal, its elytra are laterally less parallel, their declivity in lateral view is restricted to the apical third (not starting progressively before middle), the long hairs are not limited to the apical half and extend over the entire elytron, the eyes are less prominent (22-24% instead of 27-29%) (Fig. 25A), the penis apex is somewhat more sharply pointed and less twisted laterally, and the females bear a protruding more or less developed middle tuft of setae near the base of ventrite 5, which is characteristic of this subspecies.

Two specimens sequenced from La Aldea (cemetery) —not shown in the phylogram—cluster with *H. tasarticus* n. sp., which is present in the same basin, but has less curved apex of penis, longer and more parallel rostrum and less developed elytral pilosity. Again, this discrepancy with the COI results suggest another case of mitochondrial introgression, to be confirmed with nuclear markers.

Distribution and ecology. Endemic to Gran Canaria (Fig. 33). It is distributed at high and intermediate elevations in the central mountain region of the island, including the heads of the watershead of Telde, Tirajana, and La Aldea-Inagua, apparently expanding towards lower elevations in the NW (La Aldea, Guayedra). It has been found under stones and beaten from *Teline microphylla* or *Atriplex halimus* (parking parterre).

Herpisticus subvestitus pseudolanatus Machado **n. ssp.**
urn:lsid:zoobank.org:act:F3C960EA-94D4-48D2-8E72-A23BAE2A169A
Figs. 5A-B, 9A-C, 10A-G, 11A-C, 23, 53J, 55E, 59G
Proposed Spanish common name: *Gorgojo gandul de Arinaga*

Herpisticus eremita (pars), in Uyttenboogaart & Zumpt, 1940: 671; Lindberg & Lindberg, 1958: 45.
Herpisticus calvus, in García, 1986: 78 [C]; Stüben & Behne, 2013: 30.
Herpisticus subvestitus (pars), in García & Peña, 1996: 34.
Herpisticus subvestitus (pars), in Stüben & Behne, 2013: 30, figs. HERsub.1M, HERsub.1F, HERsub.2.

Type locality: Arinaga. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Arinaga: Las Rosas 55 m (27º54′47″N 15º32′02″W) 1♂ 7-11-2018 leg. A. Machado (TFMC/CO-16033).– Paratypes: Same collecting data 23 exx [DNA 10317C | MN432572] (AMC).– Arinaga 1 ex 20-6-1985 leg. A. Aguiar (TFMC).– Arinaga: Playa del Cabrón 1 ex 31-10-2010 leg. R. Valle (RVLL).– Arinaga 1 ex 27-12-2016 leg. D. Suárez (DNR).– Arinaga 3 exx + 2 larvae 8-3-2017 leg. S. Suárez (AMC).– Non-paratypes: Telde: San Antonio 1 ex 15-12-1975 leg. H. Lindberg (DEI). Melenara 7 exx 3-4-1925 leg. D. Uyttenboogaart (NMNH).– Telde: ca. El Goro 2 exx 25-1-2016 (*Kleinia)*; Tufia 40 m 1 ex 28-1-2016 (JK).– Telde 2 exx 11-5-1989; Ingenio: Los Moriscos 1 ex 28-7-1989 1 ex 28-7-1989 (on *Citrus* flower) leg. M. Peña (MAPE).– Las Canteras 1♀ 7-4-1982; Tufia 50 m 2 exx 15-12-1987, 8 exx 23-4-2019; Playa del Hombre 3 exx 23-4-2019; Arinaga: Los Campitos 1 ex 9-9-1982 leg. R. García (RGB); Ingenio: Marfú 100 m 3 exx 24-9-1999; Ingenio: Bco del Draguillo 14 exx 19-4-2019; Ingenio: Carrizal 1 ex 1-4-1999, 1 ex 2-8-1999; Burrero-Vargas 1 ex 23-9-1999, Cementerio del Carrizal 3 exx 19-4-2019 leg. H. López (HLH).– Playa del Burro 1 ex [DNA 10314C | MN432569] 14-8-2018 leg. H. López (DZUL).– Tufia 1 ex 7-12-2000 leg. P. Oromí (POM).– Melanara: Playa del Hombre (28º10′06″ N 15º26′09″ W), 47 m 6 exx [DNA 10112C | MN432532] 23-4-2019; Supra Tufia, 50 m [27º57′29N 15º26º06″W) 1 ex 28-1-2016 (*Launaea, Patellifolia*), 4 exx [DNA 10111C | MN432531] 23-4-2019: Playa de Arinaga 10 m 2 exx 20-6-1985, 3♀ 11-2-2000; Sardina del Sur: Barranco de Tres Palmas 4 exx 20-3-2010 (*Rubia futicosa*); Santa Lucía: Mirador Las Tederas 792 m 1 ex [DNA 10324C | MN432577] 7-12-2016 leg. A. Machado (AMC).

Redescription. Similar to nominotypical subspecies but less robust and smaller in size (body size ♂ 7.7 × 3.0 mm-10.6 × 3.9 mm); body elongate and somewhat tubular in appearance (elytra/prothorax width ratio 1.32); usually testaceous dominant colouration with dark patches, often with rosewood coloured scales laterally on thoracic and abdominal sternites; scales large, roundish (some occasionally oval), subconvex, not separated (tangent), and not particularly deciduous. Pilosity much denser and longer, usually irregular in shape and as conspicuous as in *H. lanatus* (occasionally longer than 2.5× length of claw); on legs more uplifted and clearly protruding (hairy appearance). Eyes more prominent (convexity 26-28%), as prominent as in ssp. *grancanariensis*. Pronotum (L/W 0.86) with rather evenly curved sides, widest at middle or below it; base with lateral angles blunt (no angular tooth). Elytra narrow, elongate and somewhat subparallel (L/W 1.82), widest about middle; with longer soft declivity towards apex. Protibiae slightly longer (1.1×) than metatibiae; protibiae with 3-4 strong denticles and

1-2 smaller ones in the intervals, shorter on mesotibiae; metatibiae crenulated. Penis tube (Fig. 53J) elongate at middle (only slightly arcuate), with short temones (0.6× length of tube); apex strongly and widely recurved; mid-section of everted endophallus narrow and cordiform (Fig. 55E). Tegminal ring between parameres broad, with a small dorsal projection. Spiculum relictum of sternite VIII with short thin arms.

Females as males but larger and broader (body size 10.9×4.2 mm - 12.4×4.8 mm); elytra/prothorax width ratio 1.47, length ratio 3.2; less hairy, with shorter curved hairs intermixed with erect longer hairs which persist mainly in apical half of elytra. Pronotum (L/W 0.79) and elytra (L/W 1.72) wider; elytra in some cases rather expanded and more abruptly acuminate. Protibiae usually with only 3 conspicuous denticles. Spermatheca with short collum and ramus (Fig. 59G).

Etymology. The Greek prefix *pseudo-* ("lying, false") added to the *Herpisticus* species name *lanatus* means that the new taxon looks like it but is something else.

Remarks. It is surprising that this subspecies is morphologically more differentiated from the other subspecies of *H. subvestitus* than from *H. lanatus,* looking almost identical to it despite the greater genetic distance (Fig. 22). It can be separated from *H. lanatus* by more prominent eyes and some genital characters already commented; from *H. subvestitus subvestitus* by its smaller size, more prominent eyes and more developed pilosity over the whole body, including legs; and from *H. subvestitus grancanariensis,* by having additional long protruding hairs in the basal half of elytra.

Distribution and ecology. *Herpisticus subvestitus pseudolanatus* n. ssp. is located in the eastern sector of the island of Gran Canaria, east of the Amurga massif, mainly on the wide arid lowlands, ascending occasionally up to at least 800 m, in what was termed as the "dry-young-sector" by Menéndez *et al.* (2008), in their geomorphological sectorisation of the island (Fig. 33). Its distribution northward seems indeed

Fig. 23.— *Herpisticus subvestitus psudolanatus* n. ssp. ♂ (Gran Canaria, Arinaga).

Fig. 23.— *Herpisticus subvestitus psudolanatus* n. ssp. ♂ (Gran Canaria, Arinaga).

to end after Telde, but there is at least one disjunct record from Las Canteras beach in the city of Las Palmas, within the domain of *H. subvestitus grancanariensis*; otherwise, they are allopatric. It is not uncommon on clayish barren lands and can be found on several plant species or in their vicinity: *Rubia fruticosa, Launea arborescens, Patellifolia patellaris, Atractylis preauxiana,* etc. The flatland areas where it dwells are subject to intense agriculture, and this weevil has become an occasional pest of several vegetables and tropical trees. The populations in organic agriculture greenhouses (e.g. pumpkins, pepper) can reach very high numbers.

Herpisticus subvestitus grancanariensis Palm, 1974, **bona subspecies**
Figs. 24, 25B, 52E, 53K, 57E, 59F
Proposed Spanish common name: *Gorgojo gandul canarión*

Herpisticus grancanariensis Palm, 1974: 35, figs. 2E, 3D; García *et al.,* 1993: 241.
Herpysticus eremita Ol. *subvestita*, in Uyttenboogaart, 1935: 15.
Herpisticus eremita (pars), in Uyttenboogaart, 1940: 61; Uyttenboogaart & Zumpt 1940: 671; Lindberg & Lindberg, 1958: 45.
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpisticus eremita subvestita (pars), in Gurrea & Sanz, 2000: 334.
Herpisticus subvestitus (pars), in Machado & Oromí 2000: 79 [= *grancanariensis*]; Oromí *et al.,* 2001: 211; Oromí et al., 2004: 224; Oromí *et al.,* 2010: 272; Ren *et al.,* 2013: 394; Stüben & Behne, 2013: 30; Alonso-Zarazaga *et al.,* 2017: 381.
Herpisticus subvestitus, in Machado, 2003: 419.

Type locality: Tafira Baja. Gran Canaria, Canary Islands.

Material examined. **Gran Canaria**. Tafira Baja 1 ♂ (holotype, nº 1165:1) 28-11-1968 leg. Th. Palm (MZLU).– Tafira – Tirajana 2 exx. Guía: La Atalaya 4 exx 30-7-1923; Las Palmas 1 ex 6-5-1922; Tafira – Tirajana 2 exx. Guía: La Atalaya 4 exx 30-7-1923 leg. Escalera. Agaete-Los Berrazales 8 exx; Agaete 6 exx 14/18-9-1941; Las Palmas 3 exx 6-6-1922 leg. A. Cabrera (MNCN).– Osorio 2 exx 10-1927; Santa Brígida 1 ex 10-1927 (*Pinus canariensis*); Barranco de Azuaje 2 exx 10-1927 leg D. Uyttenboogaart. Tafira 1♂ (nº 42169), 1♀ (nº 4186) leg. R. Frey, 1 ♂ (nº 3939) leg. R. Stora (NMNH).– Tafira 5 exx leg. R. Frey, 2 exx leg. R. Storå. Las Palmas 2 exx 6-6-1947 leg. H. Lindberg (FMNH).– Bandama 1 ex 24-4-1062, 1 ex 3-6-1963; Las Palmas 4 exx 22-4-1962; El Rincón 2 exx 7-6-1961, 9 exx 26-4-1962; El Confital 2 exx 15-5-1959 leg. J.M. Fernández. Valleseco: Loma de Schamann 1 ex 22-4-1962 leg. M. Morales. Tamaraceite 2-3-1973 1♂ (paratype) leg. Th. Palm (TFMC).– 3 km S of Sardina, 50 m 1♀ 8-6-1999; Utiaca, Barranco de la Mina, 700 m 2 exx (under *Picris echioides*) 04-07-1999, leg. Stüben; Las Lagunetas, Barranco de la Mina, 1300 m, 1 ex 1-7-1999 leg. Stüben (PST).– Moya: Barranco de Pagador (28R 443.497 3112276) 2 exx 17 7-4-2002 [DNA CG190 | MN432591] leg. P. Oromí. Firgas 1 ex 22-7-2004 leg. D. Valentinova (DZUL).– Caldera de Bandama 1 ex 17-6-2002 (POM).– Firgas 1 ex 28-8-1983 leg. J. Díaz (MAAZ).– Fagagesto 1 ex 18-9-2000; Las Palmas: La Milagrosa, 570 m 2 exx 22-7-2000; Valsendero: Barranco Oscuro 1 ex 4-1-2001; Los Berrazales 1 ex 13-4-2004 leg. H. López (HLH).– Telde: Montaña de Tara (28R 457577 309726) 1♀ 10-3-2017; Valsequillo (28R 450864 3096318) 1♀ 10-6-2017 leg. D. Suárez (DSR).– Telde 2 exx 8-1974 leg. M. Peña (MAPE).– Las Palmas: La Pardilla 100 m 1 ex 6-6-2010 leg. R. Valle (RVLL).– Ermita San Juan 2 exx (*Kleinia, Aeonium*) 8-4-2005; Valsendero: Barranco Oscuro 3 exx 9-4-2005 leg. A. Aguiar (AAC).– Moya: Montaña Doramas 2 exx 27-6-2012 leg. B. Faltysová. Las Palmas (28º09′36.3″N 15º16′00.2″W) 1 ex 26-1-2016 (*Kleinia*), Barranco de Los Cernícalos 460 m (27º58′45.9″N 15º28′26.1″W) 1 ex 25-2-2016 leg. J. Krátky (JK).– Las Palmas 1 ex 15-1-1982; Schamann 2 exx 3-6-1062; Gáldar: Cueva de La Lapa 2 exx 7-7-1992; Agaete: Barranco del Sao 1♀ 20-2-2009; Bañaderos 1 ex 23-4-2019; El Agazal 5 exx 24-4-2019; Lomo Betancor 1 ex 23-4-2019 [DNA10114 | MN432534]; Sardina 14 exx 24-4-2019; Puerto de Agaete 8 exx 25-4-2019 leg. R. García (RGB).– Tafira Baja: Las Canteras 267 m (28º03’54”N 15º26’42”W) 3 exx [DNA 10323 | MN432576] leg. R. García. Tafira Baja: Los Frailes 315 m 2 exx 16-4-1984; San Juan: La Montañeta 320 m 8 exx 30-4-2000 (*on Bosea yerbamora*); Bañaderos 10 m (28º08’52”N 15º32’29”W) 5 exx 23-4-2019 [DNA 10113C | MN432533]; Galdar: Montaña de Amagro, 400 m 10 exx 6-1988; Güía: Lomo Betancor 520 m 1 ex 11-12-2000, 490 m (28º7’9”N 15”37’36”W) 1 ex 23-4-2019, 569 m 13 exx 10-7-2019 (*Artemisia, Aeonium*), 615 m 12 exx 10-7-2019 (*Teline*); Agaete: Piso Firme 110 m 1♀ 11-12-2000; Galdar: El Agazal 356 m (28º06’45”N 15º39’35”W) 12 exx 24-4-2019 [DNA 10117C | MN432536] (on *Asparagus*); Sardina: Botica 121 m (28º7’47”N 15º41’29”W) 22 exx 24-4-2019 [DNA 10116C | MN432535]; Agaete: Puerto de Las Nieves 20 m (28º6’7”N 15º42’22”W) 21 exx 26-4-2019 [DNA 10265C | MN432556]; Agaete: Piso Firme 110 m 1 ♀11-12-2000; Agaete: Las Llongueras 134 m 1 ex 21-3-2010 leg A. Machado. (AMC).

Redescription. *Herpisticus* of intermediate size (body size ♂ 9.2×3.4 mm - 11.8×4.2 mm); long oblong in shape (elytra/prothorax length ratio 2.85), less robust than ssp. *subvestitus*; with variable mottled pattern of brown, grey, green and coppery scales; femora usually with a wide ring of pink scales; scales roundish, separate. Pilosity moderately developed, on elytra with recurved and curved hairs mixed on apical half with longer suberect separated hairs (apical tuft present); inconspicuous on *pronotum*, a few short erect hairs on head, moderate on legs, and on tibiae longer than its diameter. Antennal flagellum twice as long as scape; club slender (L/W 3.1). Rostrum slightly convergent apicad (L/W 0.77-0.82); eye convexity 27-29%. Pronotum (L/W 0.82-0.84) usually with curved or arcuate sides, with marked collar and without sharp angular tooth at base, widest near middle; lateral grooves marked, the four discal pits generally well marked; disc uneven. Elytra oblong, somewhat cylindrical (L/W 1.9), about 2.9 times longer than pronotum; broad at base, sides subaparallel, widest about 2/3, then curved, blunt apically; striae as broad as

Fig. 24.— *Herpisticus subvestitus grancanariensis* Palm, 1974 ♂ (Gran Canaria, Tafira Baja).

Fig. 24.— *Herpisticus subvestitus grancanariensis* Palm, 1974 ♂ (Gran Canaria, Tafira Baja)

interstriae, the latter often subconvex; punctures deep. Legs robust, profemora incrassate; protibiae largely arcuate, slightly longer than metatibiae (1.07×), denticles less developed than in ssp. *subvestitus*, reduced to granules on mesotibiae, usually absent on metatibiae. Spiculum relictum of sternite VIII (Fig. 52E) with base about as broad as length of arms. Penis tube (Fig. 53K), elongated with apex recurved like in ssp. *pseudolanatus,* slenderer and acuminate in dorsal view, but not as much as in *H. lanatus;* endophallus as in ssp. *subvestitus*, but distal part longer; tegmen with strong median dorsal projection between parameres and long manubrium (Fig. 57E).

Females as male, larger (body size 11.9×4.3 mm - 12.6×4.6 mm); pronotum L/W 0.82; elytra more or less broad (L/W 1.75-1.87) and more acuminate; 3.2 times longer than pronotum, widest behind middle. Ventrite 5 with abundant separated long hairs, not clustered. Spiculum ventrale as in ssp. *subvestitus* but manubrium longer. Spermatheca with long collum and ramus (Fig. 59F).

Remarks. Palm (1974) described *H. grancanariensis* with abundant material from Gran Canaria, lumping all specimens of *H. eremita* auctt. with the apex of penis strongly curved upwards, despite their variation in sizes, shape and pilosity. Fortunately, he designated a holotype from Tafira that helps to fix its concept. It is difficult to separate from *H. subvestitus*, but its size is on average smaller, the eyes are more prominent with a convexity of 27-29% instead of 22-24%, pronotum more rounded laterally and constricted basally, and the elytra are more parallel and convex, with blunt apex. Some females are not much broader than males (Tafira 12.7×4.4 mm), whereas the difference in shape between sexes in

H. subvestitus subvestitus is more pronounced. In this latter subspecies, the pilosity in the basal half of elytra is formed by small curved hairs mixed with longer ones, and females have a median tuft or field of longer hairs on ventrite 5, which is not the case in *H. grancanariensis* (only small hairs at base, uniform pilosity on ventrite 5).

Sequenced specimens from localities west of Bañaderos (Agazal, Sardina, Agaete, Lomo Betancor) cluster separately from those originating east of it (including Tafira type locality), with K2P distances that reach 6.5% (see clade K in Fig.3). This value suggests the presence of a differentiated western population that would actually justify subspecies status. However, not having found useful morphological characters to separate them, we are reluctant to split ssp. *grancanariensis* and for now we prefer to keep it within the *Herpisticus* complex with strong curved penis apex, as the only taxon that has no long protruding hairs on the basal half of elytra.

Distribution and ecology. Endemic to Gran Canaria, where it is widely distributed in the windward northeastern side of the island –the "wet-young-sector" of Menéndez *et al.* (2008)–, at intermediate and lower altitudes, in the potential habitat of spurge communities and of the sclerophyllous woodland (Fig. 33). It has been beaten from several plant species (*Picris, Aeonium, Artemisia, Bosea, Kleinia*, etc.) and can be locally abundant under stones, even very small ones, if *Patellifolia patellaris* grows in the area (Fig. 49D). It is a common prey of spiders (up to 18 fresh carcasses under one stone).

Herpisticus guanarteme Machado **n. sp.**
urn:lsid:zoobank.org:act:28B2ADA3-4E7B-4824-BCF1-A3DE24563F96
Figs. 25C, 26, 52I, 54A, 56B, 57H, 58K, 59H
Proposed Spanish common name: *Gorgojo gandul de cumbre*

Herspisticus eremita v. lanata, in Lindberg & Lindberg, 1958: 46 [Cruz de Tejeda].
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpysticus eremita Ol. *subvestita* (pars), in Uyttenboogaart, 1935: 15.
Herspisticus subvestitus (pars), in Stüben & Behne, 2013: 30.

Type locality. Cruz de Tejeda Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Cruz de Tejeda (28º00'21"N, 15º35'57"W) 1♂ 16-9-1976 leg. J.M. Fernández (TFMC/CO-16034).– Paratypes: Cruz de Tejeda 13 exx 7-1933 leg. L. Lozano, 11 exx 5-1935 leg. C. Bolivar & F. Bonet (MNCN).– Cruz de Tejeda 1♀ 9-1935 leg D. Uyttenboogaart. Cruz de Tejeda 1800 m 8 exx 18/19-10-1935 leg. B.H. Klynstra (NMNH).– Cruz de Tejeda 1450 m 3 exx 6-3-1950 H. Lindberg (FMNH).– Tejeda 1 ex 16-4-1959, 1 ex 25-4-1962; Cruz de Tejeda 4 exx 16-9-1976, 3 exx 23-9-1973, 1 ex 5-6-1963, 1 ex 10-6-1961, 1 ex 20-4-1957 leg. J.M Fernández (TFMC).– Cruz de Tejeda 1 ex 9-2-1974 leg. P. Oromí (DZUL).– Cruz de Tejeda 1504 m 1 ex 30-1-2009 leg. H. López (HLH).– Cruz de Tejeda 2 exx 9-2-1974, 1 ex 14-2-1996, 1 ex 27-10-1993; Tejeda, 1 ex 16-2-1988 leg. P. Oromí (POM).– Cruz de Tejeda 7♂ 9♀ 8-8-1999 (*Kleinia*); Supra Tejeda 1363 m 2 exx 5-12-2007 [DNA 10227C | MN432549]; Valleseco: Era de Constantino 1633 m (28º00'51"N 15º35'58"W) 22 exx 11-7-2019; Valleseco: Degollada de las Palomas 1622 m (28º00'58"N 15º36'12"W) 2 exx 17-7-2019 leg. A. Machado (AMC).– Non-paratypes: Las Lagunetas 3 exx 10-1927 leg. Uyttenboogaart (NMNH).– Pozo de las Nieves 1 ex 12-3-1950; Valle de Tejeda 8 exx 7-6-1947; between Pozo de las Nieves and Tejeda 1950 m 1 ex 13-3-1950 leg. H. Lindberg (FMNH).– Tamadaba 4 exx 4-6-1963 leg. J.M Fernández (TFMC).– Pinar de Tamadaba 5 exx 26-12-1984 leg. P. Oromí (POM).– Pozo de las Nieves 1780 m 2 exx 5-6-2010; Pinar de Tamadaba 1170 m 2 exx 10-2-2010 leg. R. Valle (RVLL).– Caldera de los Marteles, 1 ex 1-1-2005 leg. H. López. (DZUL).– San Mateo: Hoya del Gamonal 2 exx 14-5-1986 leg. M. Peña (MAPE).– Cruz de Tejeda 1 ex 12-6-1972 leg. P. Oromí (POM).– Cruz de Tejeda 6 exx 23-9-1973; Road Tejeda-Artenara 1150 m 1 ex 8-8-1999 (*Teline microphylla*), 1 ex 8-12-2000 (*Rumex lunaria*); Mirador de Timagada (27º58'39"N 15º36'60"W) 1258 m 11 exx 1-7-2019; Tamadaba: Cortijo Sansó 1150 m 1 ex 6-12-2012 [DNA 10284C | MN432558]; Acusa: Ventanieves 964 m. (28º00'48"N 15º40'39"W) 7 exx 12-7-2019 [DNA 1022C | MN432525]; leg. A. Machado (AMC).

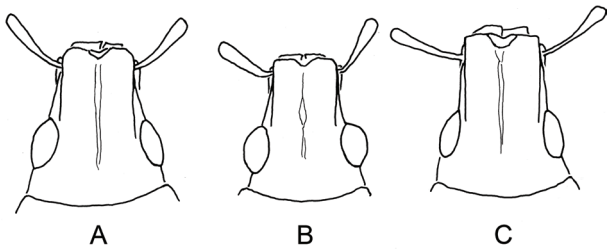

Fig. 25.— *Herpisticus* head: **A** = *H. subvestitus subvestitus*, **B** = *H. subvestitus grancanariensis*, and **C** = *H. guanarteme* n. sp.

Fig. 25.— Cabeza de *Herpisticus*: **A** = *H. subvestitus subvestitus*, **B** = *H. subvestitus grancanariensis*, y **C** = *H. guanarteme* n. sp.

Description. *Herpisticus* of big size (body size ♂ 13.9×4.2 mm - 14.8×5.3 mm), rather elongated; scaling dominantly greenish-brown with some brassy tint; scales small, flattish, detaching (frequently missing in large areas). Elytra with abundant suberect hairs (3-4 across interstria) of golden colour and mixed sizes (1-2× length of tarsal claw), increasing in size towards apex; and occasionally irregular like in *H. lanatus;* hairs on pronotum curved, short, but some clearly protruding from lateral margins; on head recurved, pointing to midline, inconspicuous. Antennal flagellum 2× length of scape; club slender (L/W 3.3). Rostrum long (Fig. 25C), parallel-sided (L/W 0.92-0.97) with antero-lateral angles squarish, and lateral margins sharply angulated; eyes slightly oval (L/W 1.1), not much protruding

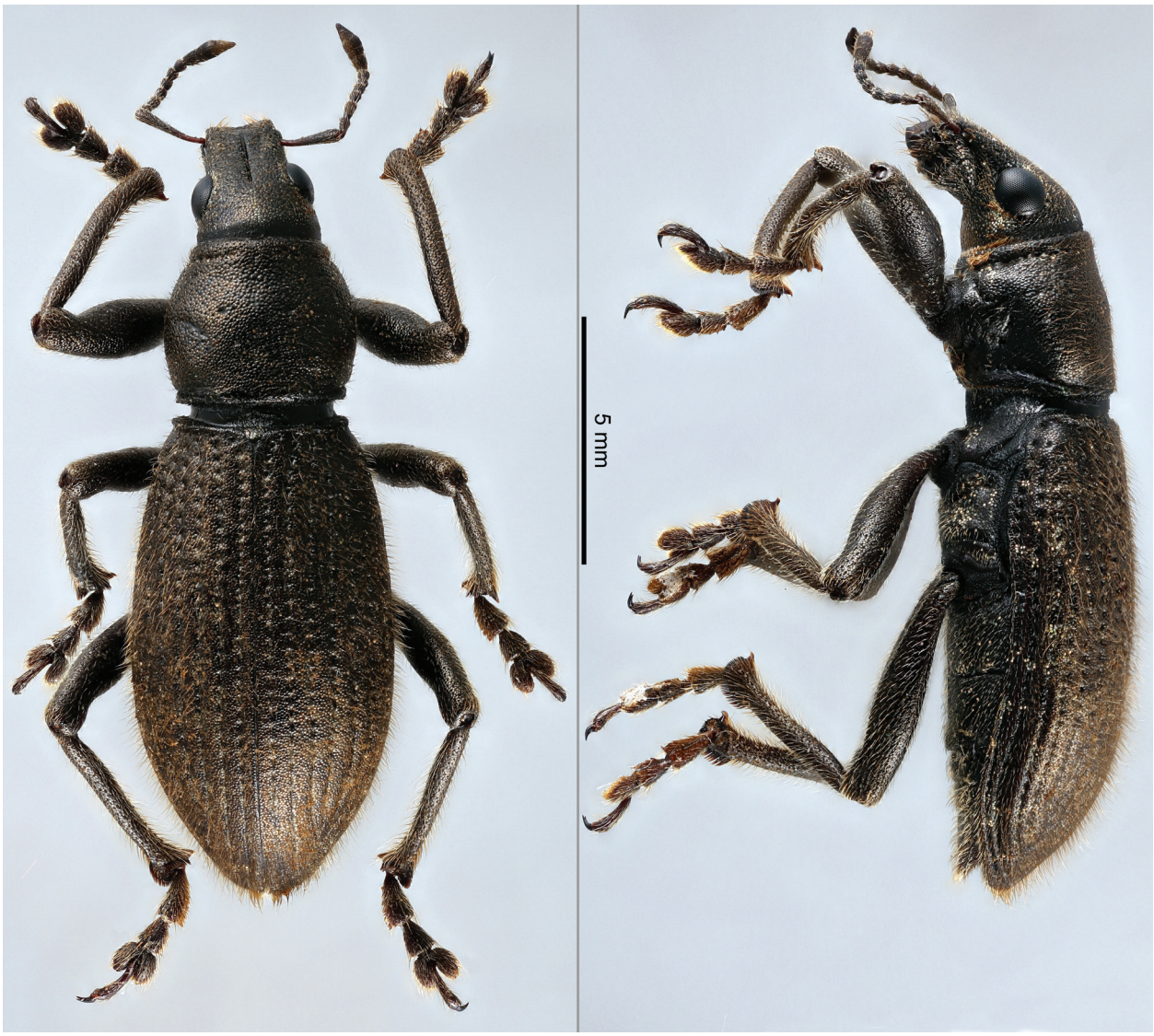

Fig. 26.— *Herpisticus guanarteme* n. sp. ♂ (Gran Canaria, Tejeda).

Fig. 26.— *Herpisticus guanarteme* n. sp. ♂ (Gran Canaria, Tejeda).

(convexity 18-20%). Pronotum (L/W 0.82) laterally arcuate, widest at middle or before; collar conspicuous, posterior angle obtuse (without marked tooth); integument even, discal pits and lateral grooves briefly marked. Elytra long-elliptical (truncated at base) widest at middle (L/W 1.83); 2.9-3.0× length of pronotum; punctures deep, striae as broad as interstriae, the latter somewhat convex; scutellar region often raised. Legs robust; protibiae as long as metatibiae (L/W < 1.0) with strong short denticles (usually alternating between larger and shorter ones); mesotibiae and metatibiae denticulate. Spiculum relictum of sternite VIII (Fig. 52I) with arms longer than its base. Apex of penis (Fig. 54A) ogival, with tip very slightly reflexed; endophallus mid-section broad cordiform, with small lateral bumps (Fig. 56B); tegmen with a short median dorsal projection and long parameres (Fig. 57H).

Females as males, generally larger (body size 13.4×5.0 mm - 16.8×6.5 mm) and with clearly wider and more acuminated elytra; pilosity less developed, on elytra dominated by short bent hairs and scarcer longer suberect ones. Pronotum (L/W 0.84); elytra long-elliptical, more acuminate, widest behind middle (L/W 1.79) and 3.2-3.3× length of pronotum. Spiculum ventrale (Fig. 58K); spermatheca (Fig. 59H)

Etymology. The specific term "*guanarteme*" is a noun in apposition corresponding to the Guanche term for the aboriginal kings of the island of Gran Canaria.

Remarks. *Herpisticus guanarteme* is present in part of the distribution area of *H subvestitus subvestitus*, but can be recognised by its generally larger size, longer and parallel rostrum with sharply marked lateral

margins and squarish anterior angles, more narrowed elytra in basal third and acuminated in apical third; the pilosity is usually longer, more uniform, and of a somewhat golden tint, and the tip of the penis is moderately bent upwards, not strongly recurved like in the group of *subvestitus-grancanariensis-lanatus*. The general appearance of this species is rather stable and can be recognised with some training, despite its varying in details. Some females have a rather arcuate or even subtruncate elytral apex (excluded from the type-series). The long pilosity of elytra can be equally or even more developed than in typical *H. lanatus,* also bearing long twisted hairs; however, hairs are recurved on the head, never upstanding or protruding as in the latter species or *H. subvestitus*.

Specimens of *H. guanarteme* n. sp. from the Tamadaba massif and west of it have less developed pilosity in the basal half of the elytra, and the rostrum is not so parallel, like in *H. subvestitus* (doubts can be solved by inspecting the penis apex). They are likely to belong to a differentiated subpopulation, a hypothesis supported genetically by the 5.0-5.8% K2P distance obtained with two available sequences. Nonetheless, we prefer to wait for more chorological and molecular data before formally establishing another new taxon.

Distribution and ecology. Endemic to Gran Canaria, where it is distributed in the central summits of the island and the Tamadaba massif in the northeast (Fig. 33). It lives in open bushy habitats (Fig. 49E) or exposed spots in pine woodlands, feeding at least on *Adenocarpus*, *Teline, Rumex*, *Kleinia* and *Artemisia.* It is not uncommon in summer.

Herpisticus denudatus Machado **n. sp.**
urn:lsid:zoobank.org:act:0F70283F-3BEF-4391-AB08-AC03E3237DA4
Figs. 4, 7C-D, 27, 52K, 54B, 56A, 58H, 59I
Proposed Spanish common name: *Gorgojo gandul de Fataga*

Herpisticus cf. subvestitus, in Stüben & Behne, 2013: fig. HERsub.1F; Schütte *et al.,* 2013: 33 [DNA]; Stüben *et al.,* 2015: 154 [DNA].
Herpisticus subvestitus, in Stüben, 2014a: 94.

Type locality: Degollada de las Yeguas. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Barranco de Fataga km 42, infra Degollada de las Yeguas 506 m (27º49º05”N 15º34’46”W) 1♂ 7-12-2018 (*Kleinia*) leg A. Machado (TFMC/CO-16035).– Paratypes: Same collecting data 12 exx [DNA 10322 | MN432575]; Barranco de Fataga 375 m 18 exx 10-12-2000 (*Kleinia*) leg. A. Machado (AMC).– Barranco de Fataga: Degollada del Burro 200 m (27°47’27”N 15°34’46”W) 3 exx [DNA 51-PST | KC783762] 22-1-2011 (*Kleinia)* leg. P. Stüben (2 ZFMK, 1 PST).– 6 km N of Maspalomas (27.813244 -15.581146) 11 exx 17-12-2015 leg. O. Konvicka (7 OK, 4 JC).– Degollada de las Yeguas 3 exx 22-2-2009 leg. R. García (RGB).– *Ibidem,* 2 exx (*Artemisia*) 22-2-2009 leg. A. Aguiar (AAC).– Fataga: Mundo Aborigen 6 exx 6-11-2019; Degollada de las Yeguas 3 exx 6-11-2019, leg. R. Valle (RVLL).

Description. *Herpisticus* of large size (body size ♂ 11.9×4.8 mm - 13.5×5.6 mm); robust, somewhat navicular in appearance; scaling rather deciduous (frequently only scattered white, cinereous, bluish or pink scales remain), more persistent on legs and head; integument piceus, shiny, with a superficial granular texture; scales polygonal and separate. Pilosity on elytra rather dense (4-5 hairs across interstria); hairs suberect and bent, variable in length, intermixed, but shorter than a tarsal claw; on head and pronotum depressed, inconspicuous. Antennal flagellum 2× length of scape: club elongate (L/W 3.4). Rostrum long and parallel-sided (L/W 0.97), with lateral margins sharply angulate: eyes slightly oval (L/W 1.07), not overly protruding (convexity 19-22%); central furrow reaching mid eye-level. Pronotum (L/W 0.84) less constricted posteriorly than anteriorly; slightly emarginated at base (middle third), sides widest about middle or before, then straight towards base; posterior angle not rounded (near right), with marked angular tooth; integument rather uneven, collar conspicuous, median line, postdiscal and lateral depression deeply marked; without discal points. Scutellum triangular and narrow. Elytra ovoid-acuminate (L/W 1.71-1.73), widest at middle, broad at base and rather pointed apically (more strongly acuminate than in *H. guanarteme*), 2.64× length of pronotum; striae as broad as or broader than interstriae, punctures large and deep, and interstriae moderately convex (highly conspicuous as they are usually free of scales). Legs slender, protibiae thin, 1.08× length of metatibiae, with 5-7 small denticles decreasing in size posteriad, tiny in mesotibiae, absent in metatibiae; protarsi broad. Spiculum relictum of sternite VIII with arms longer than base (Fig. 52K). Penis tube (Fig.54B) with apex ogival-pointed, a trifle reflexed; base robust; endophallus globose-elongate, with strongly bent apical part (Fig. 56A), transfer apparatus with emarginated base (Fig. 7C-D).

Females larger (body size 13.7×6.0 mm - 18.6×7.6 mm), but not so different in appearance than males; ratio lengh elytra/pronotum = 2.9-3.0 (in males 2.8×). Pronotum slightly more elongated (L/W 0.89); elytra widest behind middle, more expanded (L/W 1.61-1.66) and with more rounded (not pointed) apex; 2.7-2.8× length of pronotum. Hairs on elytra shorter and less dense, remaining longer in apical third but not concentrated at apex (tufts very reduced). Protarsi narrower. Spiculum ventrale with apically arcuate plate. Spermatheca with prominent collum and broad nodulus (Fig. 59I).

Fig. 27.— *Herpisticus denudatus* n. sp. ♂ (Gran Canaria, Degollada de la Yegua).

Fig. 27.— *Herpisticus denudatus* n. sp. ♂ (Gran Canaria, Degollada de la Yegua).

Etymology. The specific term "*denudatus*" is a Latin adjective that means "naked" in reference to the normal appearance of the insect bearing usually very few scales.

Remarks. The series of the specimens studied stand out —including some with the deciduous mandibular processes— for having very few scales on their dorsum, showing their naked brilliant integuments, the sculpture of pronotum very pronounced, and the elytral striae strikingly marked by the large deep punctures. However, one specimen from near the type locality depicted by Stüben & Behne (2013) shows part of the complete scaling, with a beautiful mix of whitish and bluish scales. Being a light-coloured insect, it turns blackish by losing the scales, but this could well be an exception. It is worth studying if the scales are really deciduous or if they are just just incompletely formed, as we suspect.

In *H. denudatus* n. sp. the differences in shape between males and females are less marked, in regards to other *Herpisticus* species, and as an exception the ratio elytral length / pronotal length in females may fall below 3.0 (2.9-3.0).

Distribution and ecology. Endemic to Gran Canaria and present at moderate elevations (200-400 m) in the western margin of the Amurga massif, in the South of the island (Fig. 33). Further data should confirm if this species inhabits the entire massif (difficult access to interior) or if it extends westwards into the neighbouring 'barrancos' (gullies). Amurga is another separate geomorphological sector identified by Menéndez *et al.* (2008), in relation to age of volcanic materials and dominant wet or dry zones. *Herpisticus denudatus* n. sp. has been collected at night feeding on *Kleinia neriifolia,* mainly in winter. Some imagos emerge already in November.

Herpisticus gigas Machado **n. sp.**
urn:lsid:zoobank.org:act:F6F64F16-A49C-471C-A3DC-AABFB0A8B504
Figs. 28, 52J, 54C, 58J, and 59J.
Spanish common name: *Gorgojo gandul gigante*

Herpisticus eremita (pars), in Uyttenboogaart, 1937: 110 (possibly).

Type locality: Lomo Betancor. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Guía: Lomo de Betancor 480 m (28°06′41"N, 15°37′46"W) 1♂ 8-7-1989 leg. A. Machado (TFMC/CO-16036).– Paratypes: Same collecting data 5 exx (AMC).– Non-paratypes: Barranco de Azuaje 2♀ 10-1927 leg D. Uyttenboogaart (NMNH).– Barranco de Azuaje 1 ex 5-5-1934 leg. anonymous (MNCN).

Description. *Herpisticus* of large size (body size ♂ 13.2× 5.3 mm - 14.7×5.5 mm), robust, broad and somewhat elliptical in appearance, moderately depressed; scaling with brown, testaceous, greyish, and pink scales forming patterns of dark patches on dominant greyish or pinkish background; scales polygonal, subconvex, separated. Elytral pilosity inconspicuous (bare appearance); hairs recurved and curved, very small (not longer than two scales) on the entire elytra, except apical tuft. Antennal flagellum 2× length of scape; club L/W 3.2. Rostrum squarish (L/W 0.9), parallel-sided; pterygiae little visible from above. Eyes rather circular (L/W 1.06), moderately prominent (convexity 22-26%). Pronotum almost as long as broad (L/W 0.97), sides little arcuated or sub-parallel, widest towards base; posterior lateral angles right with marked angular tooth; integument uneven, collar marked, pre- and postdiscal depression conspicuous, lateral groove and discal points marked. Elytra long-ovate, broad at base (L/W 1.75), 2.6× length and 1.46× width of prothorax; widest below middle, then acuminate; dorsum little convex, declivity smooth and apex slightly uplifted (in lateral view) as in *H. laesicollis*; striae marked, as wide as interstriae. Protibiae with denticles as in *H. subvestitus*; mesotibiae and metatibiae almost without denticles (subcrenulate). Spiculum relictum of sternite VIII with arms much shorter than base (Fig. 52J). Penis as in *H. laesicollis,* with apex ogival-shaped and hardly bent in lateral view (Fig. 54C); tegmen with incipient median dorsal projection between parameres.

Females as male, but larger and broader (body size 16.3×6.8 mm - 17.8×8.7 mm); pronotum subparallel (L/W 0.88); elytra (L/W 1.6-1.7) strongly expanded at middle (1.7× width of pronotum) and more acuminate apicad; striae narrower. Ventrite 5 with marked lateral grooves in basal half, parallel to margin. Spiculum ventrale with apically semi-circular plate (Fig. 58J). Spermatheca with short ramus (Fig. 59J).

Etymology. The specific term "gigas" is a Greek noun in apposition which means "giant" in reference to the large size and robustness of the species.

Remarks. This species is easily recognised by its large size and inconspicuous very short pilosity of elytra free of longer protruding hairs –except the apical tuft–, which is the only case in Gran Canarian *Herpisticus*. The female has well marked basal lateral grooves on ventrite 5. *Herpisticus scopulus* n. sp. is also large with short pilosity on elytra, but bears some isolated longer hairs scattered on apical third.

In the Cabrera Collection, kept at the MNHN in Madrid, there is a series of 6 males (14.2×5.5 mm - 1.49×5.6 mm) and 10 females (16.6×7.0 mm – 18.3×7.8 mm) with a printed label reading: "Tenerife /La Laguna XI. 1928". Cabrera used labels handwritten by him or his daughter, and not printed labels. Similar printed labels were common use in curatorial work at the Madrid Museum, and Canarian coleoptera specimens, for instance those of Escalera or Bolívar-Bonet, are at present mixed with the Cabrera specimens in his Collection. Part of these materials (including Cabrera's) were not prepared, and it would not be the first case of mislabelling errors attributed to an assistant who worked at the museum, particularly in those years (see Machado 1992: 42). There is one more specimen of *H. gigas* at Madrid*,* from Barranco de Azuaje in Gran Canaria, dated 5-5-1934 (anonymous collector), a locality in which the species was found at least by Uyttenboogaart in October 1927 (two females kept at Leiden, in the NMNH). Uyttenboogaart visited and studied "most of the anonymous Coleoptera" from the Canary Islands at Madrid in 1935 (Uyttenboogart, 1937). He lists the locality Azuaje, among others, and makes comments about the considerable individual variation of *Herpisticus eremita,* from very small males measuring 11 mm, to the largest females of 19-20 mm [head included]. He apparently measured females of *H. gigas,* but did not say how many specimens there were, or if he was referring to those in Leiden or Madrid, but surely not those from Cabrera (mostly from Tenerife), as his collection arrived in Madrid as a legacy, after his death in 1943. Azuaje, in the municipality of Firgas, was a popular health spa —visited by Uyttenboogaart several times before it closed in 1938— and it is a plausible origin for the mysterious series under discussion. Perhaps it is related with the post-congress field excursions of the 6th International Congress of Entomology followed by about 30 entomologists, including Uyttenboogaart, who visited Tenerife and Gran Canaria in September 1935, and part of the insects collected ended up in the Madrid Museum. In any case, it is unlikely that the series originated in La Laguna, Tenerife, an area very well prospected for decades.

Distribution and ecology. Endemic to Gran Canaria (Fig. 33), having been found in the northern sector of the island at intermediate altitude (450-700 m) in open shrub habitat, characterised by the presence of *Euphorbia* species, *Kleinia, Artemisia, Asphodelus,*

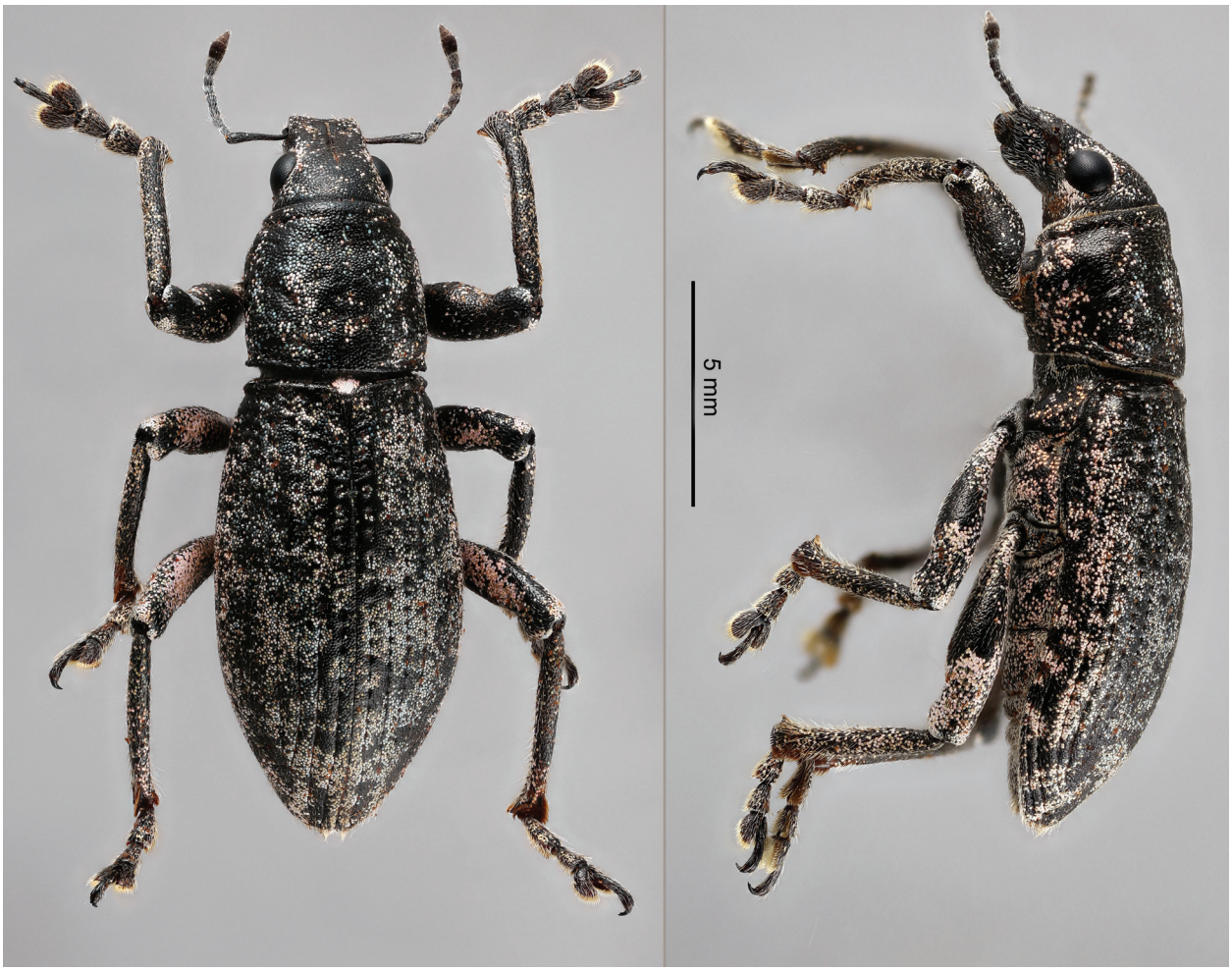

Fig. 28.— *Herpisticus gigas* n. sp. holotype ♂ (Gran Canaria, Lomo Betancor).

Fig. 28.— *Herpisticus gigas* n. sp. holotype ♂ (Gran Canaria, Lomo Betancor).

Rubia, Jasminum, Rumex, etc. The species seems to be rare (searched for in December, April and July without results).

Herpisticus guayarmina Machado **n. sp.**
urn:lsid:zoobank.org:act:161EF493-BB33-4FB7-896C-5D2E27507DA6
Figs. 29, 52G, 53L, 55F, 59K.
Proposed Spanish common name: *Gorgojo gandul de La Isleta*

Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45; Uyttenboogaart, 1940: 61.

Type locality: La Isleta. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. La Isleta: El Confital 1♂ 18-9-1976 leg. J. M. Fernández (TFMC/CO-16037).– Paratypes: La Isleta 7 exx 1-8-1923 leg. A. Cabrera (MNCN).– La Isleta 2 exx 10-1927 leg. D. Uyttenboogaart (NMNH).– Las Palmas: La Isleta 12 m 1 ex 25/27-1-2016 leg. Pélikan (JK).– La Isleta: El Confital 15 m 7 exx 11-11-1972, 4 exx 7-10-1973 leg. P. Oromí (POM).– La Isleta: Las Salinas 15 m 6 exx 23-4-2019 leg. R. García (RGB).– La Isleta: Playa del Confital 8 m (28º09'32N 15º26'02"W) 17+3 exx 20-10-2019 (*Schyzogine, Beta*), Las Salinas 18 m 1 ex 21-10-2019, Morro de los Caminos 9 m 1 ex 21-10-2019, Altos del Confital 70 m 21+16 exx (*Kleinia*) 21-10-2019, Las Coloradas 73 m (28º09'46'N 15º26'14'W) 12+13 exx 21-10-2019, Infra Las Coloradas 57 m 10+6 exx leg. R. Valle (62 RVLL, 38 AMC).– La Isleta (interior valley) 1 ex [DNA 10217C | MN432548] 24-2-2007, Las Salinas 15 m (28º09'37"N 15º26'07) 4 exx 23-4-2019 [DNA10110C | MN432530], 14 exx 13-7-2019 (*Lycium intricatum*) leg. A. Machado (AMC).

Description. *Herpisticus* of moderate size (body size ♂ 12.7×4.4 mm - 15.3×5.9 mm), elongate-elliptical in shape; scales small, round, convex, and separated, of white, pinkish, green, bluish, and brown colour (usually a white strip below the eyes); integument strongly corneolate; elytral pilosity not very dense, combining small recurved and curved hairs (longer than in *H. gigas*) with uniform cover of separate suberect longer hairs (about claw size) that can reach the base. Antennal flagellum 2× length of scape; club L/W 3.0. Rostrum long (L/W

Fig. 29.— *Herpisticus guayarmina* n. sp. ♂ (Gran Canaria, La Isleta).

Fig. 29.— *Herpisticus guayarmina* n. sp. ♂ (Gran Canaria, La Isleta).

0.91) and parallel or slightly convergent, with margins well delimited. Eyes more or less prominent (L/W 25-29%). Pronotum transverse (L/W 0.75), with rounded sides, without protruding basal angle, rather sculptured (middle line and pre- and post-discal depressions impressed). Scutellum U-shaped. Elytra elongate and narrow (L/W 1.9), broadest at middle, acuminate on second half and rather convex in section (83%); 2.8× length of pronotum and 1.3× its width; striae subconvex, marked. Legs slender, rather hairy; protibiae longer than metatibiae (1.1×), with denticles as in *H. subvestius* but usually only one small denticle between the larger ones; mesotibiae serrate, metatibiae at most with granules. Tarsi rather robust, as in *H. tasarticus* n. sp. (tarsomere 3 clearly wider than length of club). Arms of spiculum relictum of sternite VIII longer than base, with large sclerotised apex (Fig. 52G). Penis tube as long as temones; apex shorter than wide, somewhat sinuate laterally (in dorsal view), and moderately reflexed at tip (Fig. 53L); endophallus mid-section globose (Fig. 55F).

Female as male, but larger (11.1×4.4 mm - 16.3×6.3 mm) with shorter and more inflated elytra (L/W 1.6-1.7); rostrum squarish apically but sides slightly convergent; eyes less convex (23-24%); long hairs on elytra more scattered; interstriae also subconvex; ventrite 5 with scarce but long pilosity and no marked lateral grooves. Spermatheca with long ramus and short collum (Fig. 59K).

Etymology. The specific epithet *guayarmina* is a noun in apposition corresponding to the name of an aboriginal princess of Gran Canaria, daughter of the 'guanarteme' (king) Tenesor Semidan, in the 15th century.

Remarks. The elytra of *H. guayarmina* n. sp. are more acuminate at their apex and beset with scattered long hairs in both sexes, never as dense as in *H. subvestitus* or *H. grancanariensis*, two species of similar appearance and size that can safely be separated by inspecting the penis characterised by a strongly recurved apex (moderately reflexed in *H. guayarmina*). It is more similar to its sister species *H. tasarticus* n. sp., particular in pilosity, but it is more narrow-cylindrical, the rostrum is a little longer and more parallel, the pronotum more curved laterally, elytra more elliptical and acute apically, and crenulation of meso- and metatibiae is more developed.

These differences in the external morphology are not impressive despite the 10.8% COI K2P distance among them (Fig. 3, clade H). However, the median lobe of penis in *H. guayarmina* is much shorter and arcuate (long and straight in middle third in *H. tasarticus*) and the apex is less curved and blunt at tip (not sharp-pointed). Both have large tarsi.

Distribution and ecology. *Herpisticus guayarmina* n. sp. is endemic to Gran Canaria, having been found to this day only in La Isleta, at the NE extreme of the island (Fig. 33). There is also another spot-endemic entiminae weevil species, *Laparocerus franzi* Machado, 2012, that is apparently restricted to this same islet of about 850 ha and connected to the main island by an isthmus 4.2 km long by 200 m wide, occupied at present by the harbour and city of Las Palmas. Half of the islet is nowadays a protected area.

H. subvestitus grancanariensis is also present in La Isleta, at least on the western beach of El Confital, where it shares habitat with *H. guayarmina* n. sp. However, the former is found occasionally in early summer while the latter is rather common in late summer and widely spread in the entire islet.

Herpisticus tasarticus Machado **n. sp.**
urn:lsid:zoobank.org:act:B6B64182-877A-4176-A556-2C77232A3731
Figs. 30, 52H, 53M, 55G, 57G, 58I, 59L
Proposed Spanish common name: *Gorgojo gandul de Tasartico*

Type locality: Barranco de Tasartico. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Barranco de Tasartico 1 ♂ [GBIF 6.929] 12-8-2001 leg. H. López (DZUL).– Paratypes: Degollada de Tasarte 1♀ 12-8-2001 leg. López & Contreras; Degollada Venegueras 2 exx 12-8-2007 leg. H. López (DZUL).– Supra La Aldea 1 ex 23-2-2009 leg. R. García (RGB). La Aldea: Degollada Tasartico 575 m 1 ex (*Artemisia*) 21-2-2009; Barranco de Tasarte 678 m 2 exx 21-2-2009 (*Artemisia*) leg. A. Aguiar (AAC).– Degollada de Tasartico 560 m 3 exx 21-2-2009 (*Artemisia*) [DNA 10254C | MN432554]; supra Tasarte 650 m 1 ex 22-2-2009 (*Kleinia*); supra Tocodomán 482 m (27º56'53" N 15º45'44" W) 2 exx 25-4-2019 (*Carlina, Chamaecytisus*) [DNA10264 | MN432555]; Tasarte 525 m (27º55'38"N 15º45'22"W) 3 exx 12-7-2019 [DNA 10023C | MN432526] leg. A. Machado (AMC).– Non-paratypes: Aldea de San Nicolás 3 m 1 ex 2-5-2009 (*Tamarix*) leg. H. López & S. de la Cruz (HLH).– Mogán 10 m 1 ex 8-2002 leg. R. Valle (RVLL).

Description. *Herpisticus* of large size (body size ♂ 12.1×4.5 mm - 13.8×5.2 mm); oblong shape (elytra/prothorax length ratio 2.88); blackish-brown in colour, with variable mottled pattern of brown, pinkish and glaucous scales; scales round, separate, apparently rather dehiscent (integument more or less flattish corneolate); pilosity on elytra formed by small recurved overlapping hairs increasing in size apicad, mixed with separated erect long silky ones (about or longer than tarsal claw) conspicuous on apical fourth (apical tuft little developed); hairs inconspicuous on head and pronotum; little protruding on tibiae (smaller than its diameter). Antennal flagellum 2.1× length of scape; club L/W 3.1. Eyes oval (L/W 1.12), little protruding (convexity 18-21%). Rostrum subparallel (L/W 0.82-0.88) with lateral margins blunt. Pronotum (L/W 0.84) with arcuate/curved sides, widest about middle; angular tooth small, inconspicuous; dorsal sculpture usually well marked. Scutellum broad ogival. Elytra oblong, moderately acuminate, widest slightly behind middle (L/W 1.8), 2.6× length of pronotum; punctures of striae rather conspicuous, interstriae subconvex, about as wide as striae. Abdominal convexity 75%. Protibiae slightly sinuous basad, as long as metatibiae, with strong denticles; meso- and metatibiae with small denticles. Tarsi broad, robust, with tarsomere 2 a trifle longer than wider (tarsomere 3 as long or shorter than length of club). Spiculum relictum of sternite VIII with base narrower than length of arms (Fig. 52H). Penis apex moderately reflexed, wider than longer, triangular and pointed in dorsal view; temones 0.7× length of tube; tube straight in middle third (Fig. 53M); endophallus mid-section broadly cordiform (Fig. 55G): tegmen thin between parameres, with incipient median projection; manubrium long (Fig. 57G).

Female as male but larger and more robust (body size 15.4×6.2 mm - 15.8×6.3 mm); rostrum more convergent apicad; elytra (L/W 1.8) longer, 2.9-3.1× length of pronotum, with punctures similarly conspicuous; long hairs scarcer (some can reach the base). Tarsi more slender. Plate of sternite VII slightly emarginated ad middle (Fig. 58I). Spermatheca with flatish ramus and elongated collum (Fig. 59L).

Remarks. *Herpisticus tasarticus* n. sp. can be distinguished from *H. subvestitus grancanariensis* by its more parallel rostrum, less convex eyes, and less developed pilosity of tibiae (less protruding on outer face), and from *H. subvestitus subvestitus,* by the small recurved pilosity on basal half of elytra and absence of tufts on abdominal ventrite 5. Additionally, the manubrium of tegmen is proportionally much longer (Fig. 57G) and the apex of its penis is less curved than in these species or *H. lanatus*, but more than in any of the other *Herpisticus* inhabiting Gran Canaria, including *H. guayarmina* n. sp., its sister-species. The latter looks rather similar in shape and shares robust tarsi, but bears (♂) long hairs on basal half of elytra and the rostrum is anteriorly more squarish. Scales in *H. tasarticus* n. sp. seem to get lost easily, thus dominating the

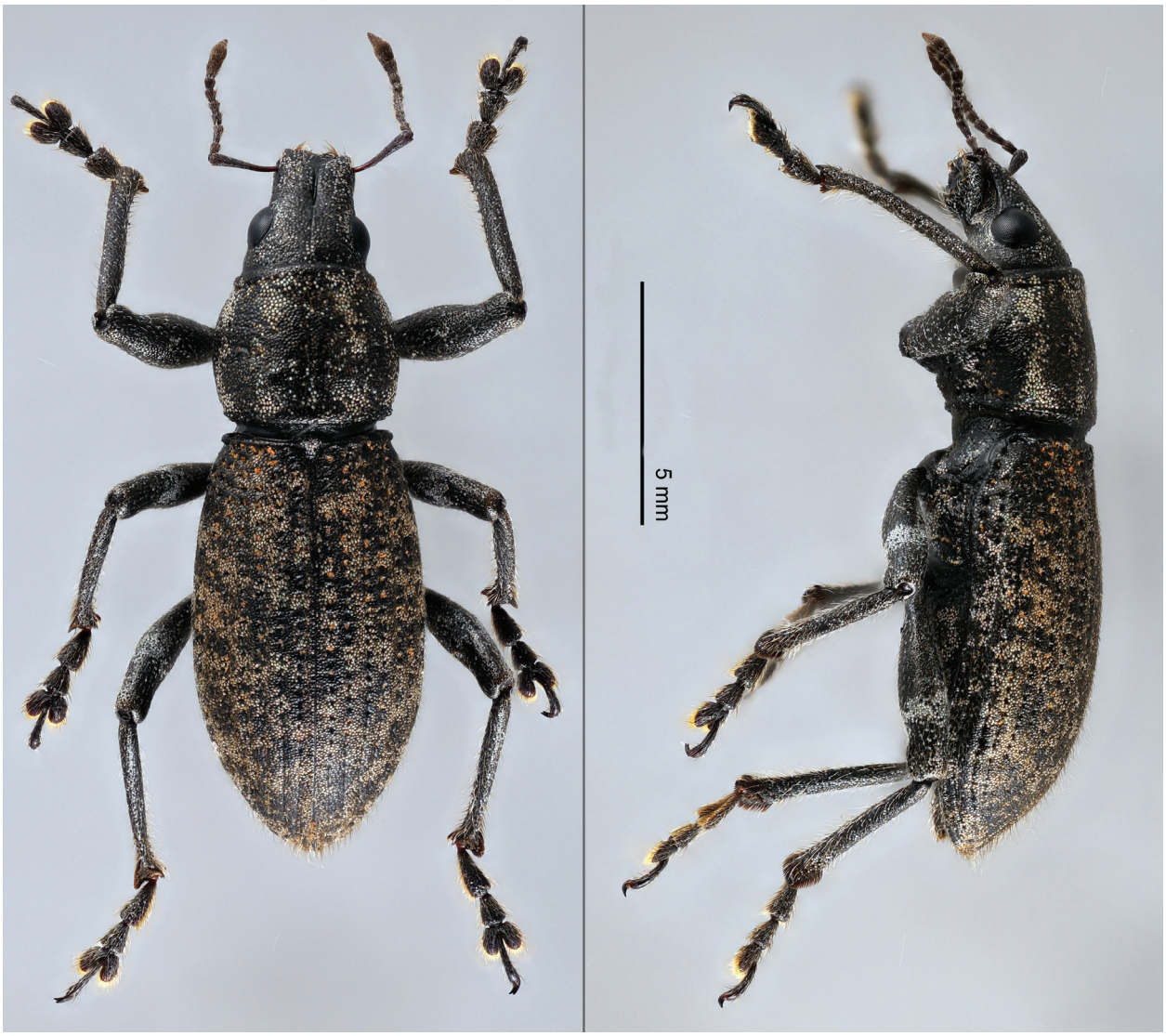

Fig. 30.— *Herpisticus tasarticus* n. sp. ♂ (Gran Canaria, Degollada Tasarte).

Fig. 30.— *Herpisticus tasarticus* n. sp. ♂ (Gran Canaria, Degollada Tasarte).

dark colour (integument with corneoles), making the elytral puncturation very conspicuous.

Distribution and ecology. Endemic to Gran Canaria (Fig. 33), apparently restricted to the SW sector of the island, covering the basins between La Aldea and Mogán (both included). In this sector, *H. lanatus* and *H. subvestitus subvestitus* are also present. Specimens can be found under stones in abandoned fields or its natural habitat, the open spurge formations, and were beaten from *Kleinia* and *Artemisia*.

Herpisticus scopulus Machado **n. sp.**
urn:lsid:zoobank.org:act:E3AC83BF-BCCB-41DC-8417-D1E15A6F0DEA
Figs. 31, 52L, 54D, 56C, 59M
Proposed Spanish common name: *Gorgojo gandul del Andén Verde*

Herpisticus eremita, in Stüben & Behne, 2013: 30 [as doubtful] fig. HERere.1F;
Herpisticus laesicollis, in Stüben, 2014a: fig. HERlae.1CF; Stüben & Behne, 2015: fig. HERlae.1CF.

Type locality: Andén Verde. Gran Canaria, Canary Islands

Material examined. Holotype: **Gran Canaria**. Andén Verde, supra Casa de Job 693 m (28º02'11"N 15º45'28"W) 1♂ 12-7-2019 leg. A. Machado (TFMC/CO-16038).– Paratypes: Same locality 41 exx (*Salvia canariensis, Neochamaelea pulverulenta*) 12-7-2019 [DNA 10024C | MN432527] leg. A. Machado (38 AMC, 1 RGB).– Same locality 5 exx 22-6-2019 leg. R. Valle (4 RVLL, 1 AMC).– Andén Verde 1♀ 7-3-1088 leg. M. Peña (MAPE).– Andén Verde 669 m (28R 0426392 31012149), 1♀ 26-12-2004 leg. H. López (DZUL).– Tirma 1 ex 27-2-1998 leg. P. Oromí (POM).– Andén Verde (near Tirma) 1♀ 2-1-2009 leg H. López (HLH).– South El Risco: Montaña de Tirma 688 m (N28°02'07" W15°44'47") 1 ex 24-1-2011 leg. Stüben

(PST).– Anden Verde 570 m (28º1'41"N 15º46'9.5"W) 2♀♀ 25-4-2019 [DNA 10151C | MN432539] leg. R. García (1 RGB, 1 AMC).

Description. *Herpisticus* similar to *H. tasarticus,* but larger (body size ♂ 12.4×4.5 mm - 13.2×4.7 mm); with variegated greenish-beige colouration on dark background; with whitish scales usually persistent on inner side of femora; integument moderately corneolate, shiny; scales round and tangent; elytra densely beset with small recurved hairs mixed in apical third with slightly larger curved/bent hairs, and a few scattered longer arcuate hairs pointing backwards near apex (many more, erect and longer than a claw in *H. tasarticus*); apical tuft little developed; outer edge of protibiae with suberect hairs (not recurved) smaller than tibial diameter. Rostrum slightly convergent, with straight lateral margins (L/W = 0.85), squarish anteriad; ratio width at base / inter-ocular distance < 1.10 (in *tasarticus* >1.10); eyes similarly little protruding (convexity 18-22%). Pronotum less transverse (L/W = 0.9), with arcuate sides (not rounded), widest at middle or before, and with postero-lateral tooth little marked; disc uneven; lateral oblique impressions and discal points well marked. Elytra slightly more elliptical (L/W 1.85), less convex at base; 2.7× length of pronotum; basal rim not very

Fig. 31.— *Herpisticus scopulus* n. sp. ♀ (Gran Canaria, Andén Verde).

Fig. 31.— *Herpisticus scopulus* n. sp. ♀ (Gran Canaria, Andén Verde).

elevated near scutellum; apical declivity starting at 1/3. Probitiae with a dozen denticles (alternating in size); mesotibiae with small denticles, metatibiae with granules. Tarsi robust. Spiculum relictum of sternite VIII with broad base and thin, short arms (Fig. 52L). Penis shorter, more arcuate, with apex less reflexed, blunter in dorsal view (Fig. 54D); endophallus mid-section cordiform; apical section slender and bilobed (Fig. 56C).

Female as male, but larger and broader (length 15.5×6.2 mm - 16.1×6.05 mm); scales more separated; elytral recurved pilosity smaller, less dense, with protruding long hairs more spread throughout apical half (almost in rows); ventrite 5 with scarce pilosity and lateral grooves little impressed. Meso- and metatibiae without denticles or crenulation. Spermatheca with flatish ramus (Fig. 59M).

Etymology. The Latin noun *scopulus* (escarpment) has been taken in apposition to name this species which lives in the almost inaccessible escarpments of El Risco-Faneque, on the NW coast of Gran Canaria.

Remarks. Besides *H. tasarticus* n. sp., the other Gran Canarian species that can easily be confused with *H. scopulus* is *H. gigas* n. sp. However, it is larger and the females are more inflated; the pronotum is a little more constricted anterior and basally, and the lateral impressions are shorter and less oblique, almost transverse; the elytral apical declivity starts at the middle and the pilosity is less developed than and inconspicuous, almost devoid of protruding hairs on apical third (very few in males, none in females). Moreover, the apex of the penis is even less reflexed, almost straight.

Distribution and ecology. *Herpisticus scopulus* n. sp. is endemic to Gran Canaria, being restricted to the ancient basalt Tamadaba massif with its impressive cliffs of El Risco-Faneque in the NW of the island (Fig. 33). Other entiminae weevils, like *Laparocerus rugosivertex* Machado, 2012, or *Laparocerus fraudulentus* Machado, 2012 are also confined to this region. It is a summer animal that feeds during the night on *Salvia canariensis* (common) and possibly *Cneorum pulverulentum*; during the day it was collected under stones or hiding below flat mats of *Lotus callis-viridis*.

Herpisticus nanus Machado **n. sp.**
urn:lsid:zoobank.org:act:C710AE81-BDED-4526-8848-BEB80CCF656D
Figs. 32, 53G, 57D, 59N
Proposed Spanish common name: *Gorgojo gandul enano*

Herpisticus subvestitus (pars), in García & Peña, 1996: 34.

Type locality: Punta Las Arenas. Gran Canaria, Canary Islands.

Material examined. Holotype: **Gran Canaria**. Punta Las Arenas (28°02'33"N 15°45'59"W) 1♂ (GBIF 6.893) 3-10-2001 leg. Contreras & López (DZUL).– Paratypes: Punta de las Arenas (28°02'24"N 15°45'47W) 2 exx 6-6-2010, 3 exx 27-9-2019 [DNA 10069C] leg. R. Valle (3 RVLL, 2 AMC).

Description. *Herpisticus* of small size (♂ body size 7.7×2.7 mm - 8.5×3.1 mm), elongate-cylindrical in shape; scales large, flat, round and polygonal, adjacent and separated, of white, greyish and testaceous colour (when missing integument blackish, strongly corneolate, and shiny); elytra sparingly beset of straight bowed hairs as long or slightly longer than claw (no recurved hairs); on pronotum similar but shorter, on head more bowed down; on tibiae bowed, not more protruding than tibial diameter. Antennal flagellum 1.8× length of scape; club L/W 3.2. Rostrum short (L/W 0.8) convergent apicad, lateral margins not sharply angulated. Eyes round, prominent (L/W 30%). Pronotum transverse (L/W 0.85), sides arquate, widest about middle; disc rather flat, without median line; basal sulcus rather thin; lateral angles blunt (without tooth); pre- and postdiscal depressions more marked laterally; anterior discal points large, posterior discal points deeper and conspicuous, pit-like and as large as punctures of elytral striae (2× diameter of scale); lateral sulci shallow. Scutellum short, U-shaped. Metendosternite with internal basal margin strongly retracted (about 1/3 of stalk); stalk narrowest before middle. Abdomen narrow, subparallel (L/W 1.8), rather cylindrical in section (H/W 86%), less constricted towards base, widest after middle, 2.6× length of pronotum and 1.25× its width; dorsal declivity starting at middle or before; elytral apex ogival, without apical tuft; interstriae slightly subconvex, wider than striae, punctures moderate, little conspicuous. Legs slender, protibiae rather straight, as long as metatibiae, at apex moderately expanded inwards (not outwards), with some 3-5 larger denticles and tiny ones between them; meso- and metatibiae crenulated. Tarsi robust; tarsomere 2 triangular. Spiculum relictum of sternite VIII with arms than base, and large sclerotised apex. Penis tube longer than temones (Fig. 53G); apex moderately reflexed at tip, in dorsal view somewhat sinuate laterally, and shorter than wider (as in *H. guayarmina* n. sp.). Tegmen (Fig. 57D) with short broad parameres, without median dorsal projection between them.

Female as male, but larger (9.7×38 - 9.8×4.0 mm); elytra longer and more inflated (L/W 1.7 and 3.0× length of pronotum), acuminate in appearance, with small apical tuft and shorter protruding hairs (mostly on apical half) and small recurved hairs (mostly on basal half); eyes less prominent; ventrite 5 with uniform pilosity and little marked lateral grooves. Spermatheca (Fig. 59N).

Etymology. The specific epithet “nanus” (dwarf in Latin) refers to the small size of this species in

Fig. 32.— *Herpisticus nanus* n. sp. holotype ♂ (Gran Canaria, Punta de las Arenas).

Fig. 32.— *Herpisticus nanus* n. sp. holotipo ♂ (Gran Canaria, Punta de las Arenas).

comparison with its congeners on Gran Canaria. It is to be treated as a noun in apposition.

Remarks. This species is easily recognised, apart from being the smallest of the genus on Gran Canaria, by its cylindrical shape, convergent rostrum, protruding eyes, and scarce upstanding long pilosity on its dorsum, including head and legs. It could be confused with *H. lanatus,* but pilosity in this latter species is much longer and denser, usually irregular (twisted) and the tip of its penis is clearly more curved than in *H. nanus* n. sp.

The *Herpisticus* from Punta de las Arenas (30-5-1988) recorded by García & Peña (1996) belongs presumably to this species, but unfortunately this single specimen has been lost. After two failed efforts of Canarian colleagues in May and June 2019 to find it at its locus classicus, success was obtained in September (three specimens). The series of *H. nanus* n. sp. now available is limited to six specimens (one male with a deformed head). The light colouration makes this animal difficult to spot on sandy calcareous soils.

Distribution and ecology. Endemic to Gran Canaria, *H. nanus* n. sp. has been located in the west of the island, on the coastal platform of Punta de las Arenas (Fig. 33). This rather small area (< 0.4 km²) has no easy access and is almost completely natural. The

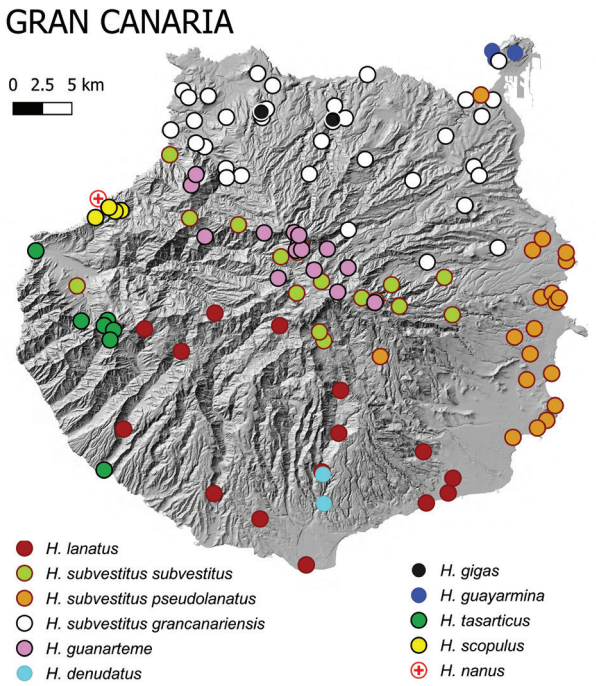

Fig. 33.— Presence of *Herpisticus* species in the island of Gran Canaria.

Fig. 33.— Presencia de especies de *Herpisticus* en la isla de Gran Canaria.

vegetation is dominated by *Euphorbia balsamifera, E. aphylla*, *Salsola vermiculata,* and *Lycium intricatum,* growing on consolidated sandy soils, that mix with clay upslope. This species could well be a spot-endemic, but other equivalent habitat on the western cliffs of Gran Canaria should be inspected before assuming this hypothesis.

Herpisticus laesicollis Germar, 1823

Figs. 1, 5C-H, 6A-C, 34, 52M, 54E, 56D, 57I, 59O

Spanish common name: *Gorgojo gandul común*

Herpisticus laesicollis Germar, 1823: 413, tab. 2, fig. 3 [Type Coll. Germar]; Ren *et al.,* 2013: 394; Stüben, 2014a: 93, figs. HERlae.1TM, HERlae.2T1, HERlae.2T2; Stüben & Behne, 2015: 61, figs. HERlae.1TM, HERlae-2T1; Stüben *et al.,* 2015: 154 [pars]; Alonso-Zarazaga *et al.,* 2017: 381.

Curculio eremita Olivier, 1807: 321, pl. 24 fig. 338 [type Tenerife, leg. Maugé Coll. Chevrolat] (non Herbst, 1784).

Tanymecus alutaceus Sturm, 1826: 201 [Teneriffa], **nomen nudum!**

Herpysticus laevicollis, in Schoenherr, 1833: 10 [typographical error].

Herpysticus tessellatus Dejean, 1834: 248 [Teneriffae], 1836: 271, **nomen nudum!**

Herpysticus laesicollis, in Schoenherr, 1833: 556 [homonymy with *Curculio eremita* Herbst 1784].

Herpysticus eremita, in Brullé, 1839: 72; Wollaston, 1864: 370 [var α *typica*], 1865: 333 [pars]; Heyden, 1872: 83 (?); Koeppen, 1910: 104.

Herpistichus ereusita, in Faust, 1897: 343 [typographical error].

Herpisticus eremita, in Winkler, 1932: 1490; Palm, 1967: 35; Stüben *et al*., 2015: 154.

Herpisticus eremita (pars), in Uyttenboogaart, 1937: 110, 1940: 61; Uyttenboogaart & Zumpt, 1940: 671; Lindberg & Lindberg, 1958: 45; Palm, 1974: 35, fig. 3C; García *et al.,* 1993: 241; Machado & Oromí, 2000: 79; Oromí *et al.,* 2001: 211, 2004: 224, 2010: 272; Schütte *et al.,* 2013: 33.

Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.

Type locality: Tenerife (probably Santa Cruz de Tenerife), Canary Islands.

Material examined. **Tenerife**: "Teneriffa" 1 ♂ lectotype (des. A. Machado, 2018) leg. V. Rebeuer; 3 paralectotypes with no locality label (MLUZS).– "Tenerife" 10 exx 1890 leg. Ch. Alluaud. Bajamar 2 exx 20-10-2022, 1 ex 11-11-1926, 6 exx 9-9-1928; Punta del Hidalgo 3 exx 8-4-1925, 1 ex 10-4-1925, 1 ex 8-5-1925, 1 ex 28-5-1925, 6 exx 8-1930; Monte Aguirre 5 exx 3-1927, 1 ex 4-1927, 8 exx 5-1927; Vueltas de Taganana 2 exx 5-1931; Barranco de Tahodio 5 exx 10-1926, 18 exx 3-1927, 29 exx 4-1928 4 exx 5-1930; Montaña Guerra [La Cuesta] 1 ex 13-3-1927; Valle Tabares 1 ex 16-7- 1918; Güímar 3 exx 12-1927, 1 ex 2-1933, 1 ex 11-1934; Arenales de Güímar 21 exx 6-1928; Güímar, road to El Puertito 1 ex 20-11-1927; El Rosario 1 ex 10-11-1916; Fuente Fría 2 exx 12-12-1926, 4 exx 20-7-1926; Laguneta Alta 8 exx 15-10-1927, 6 exx 10-1927; Montaña Bermeja 2 exx 12-1927; Taganana 2 exx 3-7-1927; Cruz de Taganana 1 ex 4-1935; leg. A. Cabrera. Icod 1 ex 5-1921; La Esperanza 3 exx 2-1921; Fuente Fría 2 exx 22-5-1921, 2 exx 22-6-1921; Barranco de San Andrés 22 exx 5-1921; Santa Cruz 10 exx 5-1922; Bajamar 1 ex 2-1-1921, 1 ex 2-1921; Valle Guerra 3 exx 6-6-1921, 7 exx 10-6-1921; Monte Aguirre 6 exx 1-5-1921, 1 ex 5-6-1921; Taganana 6 exx 2-1921, 1ex 10-10-1921; Vueltas de Taganana 2 ex 5-1921,1 ex 10-7-1921; Cumbres Afur 1 ex 13-6-1921; Cumbres de Taganana 1 ex 3-1921; La Laguna 2 exx 1-1921; San Andrés 8 exx 5-1921; Barranco San Andrés 67 exx 5-1921; Monte de Igueste 700-800 m 3 exx 4-1921 leg. M. Escalera. Barranco del Bufadero 3 exx 22-4-1955 leg. J. Mateu. Candelaria (Araya) 6 exx 23-6-2017 leg. A. González. Monte de Aguirre 2 exx 15-8-1960 leg. M. Morales. La Esperanza 6 exx 10-1987: Monte Aguirre 1 ex 22-5-1958; San Andrés 2 exx 25-5-1958; Santa Cruz 3 exx 28-5-1958 leg. J.M. Fernández; Santa Cruz: Hoya Fría 1 ex 6-8-1985 leg. M.G. París (MNCN).– Teneriffa 2 exx "comparee type d'Ol." Sédillot. Aguamansa 1000 m 2 exx 9-1935 leg. Uyttenboogaart. Pinar La Esperanza, 3 exx leg. E. Appenhagen (NMNH).– Güímar 43 exx 2-6-1947; Santa Cruz 4 exx 1-6-1947; Las Mercedes 1 ex 30-5-1947; Fuente Fría 1 ex 5-4-1949; Puerto de la Cruz 15 exx 7/8-5-1947 (FMNH).– Santa Cruz: Las Mesas 10 exx 6-12-2001, 1 ex 24-1-1993; La Cumbrilla 1 ex 7-1-1990 leg. M. Morales. Santa Cruz 1 ex 16-6-1972; Barranco Antequera 7 exx 13-10-1974; San Andrés 1 ex 4-2-1972; Taganana 1 ex 4-2-1972 leg. M. Brito. Santa Cruz: La Cortadura 2 exx 26-4-1949 leg. R. Arozarena; Santa Cruz 1 ex 18-2-1968, Barranco Grande 1 ex 2-12-1962; Barranco La Leña 1 ex 14-5-1052: Montes Anaga 2 exx 3-3-1974 leg. Fernández. Barranco San Andrés 4 exx 19-4-1989 leg. G. Ortega. Candelaria 5 exx 20-4-1973; Tafada 1♀ 19-3-1977 leg. A. Aguiar. La Perdoma 1 ex 22-6-1949 leg. R. Arozarena (TFMC).– Santa Cruz: Las Mesas 13-12-1960 leg. F. Español. Candelaria (Araya) 6

exx 15-6-2017 (*Vitis*) leg. A. González. Igueste San Andrés 2 exx 27-8-1985 leg. M. Baena (MAAZ).– Anaga: Casas de La Cumbre, 800 m 1 ex 10-12-2001 leg. E. Colonnelli; El Bailadero, 900 m 15-3-2007 leg. M. Mei, P. Cerreti & D. Whitmore (EC).– Anaga: Lomo Las Bodegas 543 m 1 ex [763-PST | MH051980] 25-2-2012; San Andrés: El Suculum 135 m (28°30'40"N 16°11'18"W) 1 ex 17-12-2019 *Artemisia* leg. P. Stüben (ZFMK).– Anaga: Lomo de Las Bodegas, 600 m 2 exx (from *Sonchus*) 5-1-1999; Anaga: Las Carboneras 550 m (28°33′23″N 16°16′27″W) 1 ex 14-10-1989 (*Aeonium*); San Andrés towards El Bailadero 300 m 2 exx 31-3-1999; Anaga: Lomo de las Bodegas 270 m (28°33′43″N 16°08′39″W) 1 ex 22-2-2003; Barranco de Igueste 229 m (28°32′34″N 16°09′41″W) 1 ex 16-2-2012; Anaga: Lomo de las Bodegas 500 m (28°33′38″N 16°09′20″W) 1 ex 26-12-2003; *ibidem* 543 m 1 ex 25-2-2012, leg. Stüben (PST).– Anaga 1 ex 20-1-1974; Cabezo del Tejo 28-9-1988 leg. M.A. Peña (MAPE).– Santa Cruz: Las Mesas 1 ex 21-1-1971 leg. P. Oromí. Candelaria 1 ex 8-5-2004 leg. H. López (POM).– Santa Cruz: Ofra 180 m 2 exx 2002; Arico: Las Listadas 15 m 1 ex 11-2006; Arico: El Tagoro 100 m 1 ex 8-8-2019; Arafo 400 m 1 ex 2-2010, 2 exx 4-8-2019 leg. R. Valle (RVLL).– Güímar 3 exx 28-4-2004, 1 ex 13-3-1982, 1 ex 14-3-1983 leg. Dept. Zool.; La Caleta 1 ex 18-4-1982 leg. I. Hernández; Barranco de Antequera 1 ex 8-4-1974 leg. P. Oromí; Valle Jiménez 12 exx 7-7-2010 leg. GIET; San Andrés 1 ex 25-12-73; Santa Cruz 13 exx 24-3-1072 leg. M. Brito; Las Caletillas 1 ex 12-2-1982 leg. A Morales; Las Mercedes 1 ex 14-1-1989 leg. Dpt. Zool.; Candelaria: Barranco de Samarines 2 exx 5-5-2004 leg. S. de la Cruz (DZUL).– Valle Jiménez (28R 434256 3153124) 1 ex [DNA GC163 | MN432589] 7-8-2010 leg. GIET (DZUL).– Güímar: Las Dehesas 1 ex 25-6-2017; Güímar: Llano Las Chozas 1697 m 1 ex 17-6-2005 leg. H. López. Güímar. La Medida 1 ex 26-1-1999, 1 ex 17-4-199 leg. E. Morales. Hoya Zapata: Las Heras (28R 360656 3121768) 2 exx 14-2-2015; Malpaís de Güímar 1 ex 1-5-2003 leg. H. López (HLH).– San Andrés 4 exx 6-7-2002; Barranco del Cercado 2 exx 6-7-2002; El Bailadero 2 exx (*Aeonium*) 26-10-2002 leg. A. Aguiar (AAC).– Almáciga 1 ex 20-4-1982; Chinamada 1 ex 4-7-2010; Monte Aguirre 660 m 2 exx 25-4-2008; Las Caletillas 12-2-1982; Güímar 2 exx 15-3-1982; Montaña de Fasnia 422 m 1♂ [DNA 10319T | MN432573] 12-10-2018 leg. R. García (RGB).– Santa Cruz 7 exx 12-5-1972, 2 exx 23-9-1972 leg. J. Bonnet. Tacoronte: Guayonge, finca del Cabildo 6 exx 4-2017 leg. Servicio de Plagas (agricultural pest service); Valle de Güímar: Jagua 140 m (28º18′03″N 16º23′55″W) 10 exx 22-6-2019 (*Persea americana, Artemisia*) leg. G. Marcos. Anaga: El Bailadero 500 m 1 ex 1-2-1999; Valle de Brosque 203 m 1 ex 12-5-2018; Barranco del Cercado 2 exx 5-7-2002 [DNA 10305T | MN432566]; Barranco de Tahodio 2 exx 14-2-1970; *infra* Las Mercedes 1 ex 19-1-1971; Los Rodeos: Montaña del Aire 1 ex 25-3-2003 (on *Eucalyptus amygdalinus*); Radazul 16-1-2006 [DNA 10201T | MN432544]; Barranco San Andrés 95 m 30 exx 26-3-2019; Barranco de Tahodio: La Tosquerilla 575 m 15 exx 3-7-2019 (on *Artemisia*) leg. A. Machado (AMC).

Redescription. *Herpisticus* of moderate size (♂ 11.0×4.0 mm - 13.2×5.0 mm), elongate-elliptical in appearance (Fig. 5G). Vestiture composed of somewhat polygonal, subconvex scales variable in colour (pink, bluish, white, beige, etc.), often coppery or pinkish dominant and white stripes at mid-vertex and bordering eyes dorsally; genae, sides of prothorax, scutellum, inner face of femora (two bands) and ventral parts dominant whitish or pink. Elytra covered with short curved overlapping hairs (shorter than claw) in basal half, progressively longer in apical half, long and silky near apex (1-2×claw), with small apical tuft; short on head and pronotum (some visible protruding hairs at antero-lateral margin). Antennal flagellum longer than twice the scape (2.2×); eyes round, little prominent (convexity 16%-21%). Rostrum (L/W 0.84) almost rectangular, parallel-sided. Pronotum more or less transverse (L/W 0.83-0.90); lateral margins arcuate or subparallel, widest at middle or more frequently before middle, little constricted at base (basal angular teeth usually marked); without median line; the four discal pits well marked. Scutellum broadly triangular or semicircular. Elytra rather long and elliptical (L/W1.8-1.9) with blunt apex; 3.0-3.3× length of pronotum; broadest at middle or slightly behind middle, somewhat depressed (abdominal transversal convexity 75%), interstriae 1-2 flat in basal third, then lateral declivity somewhat straight, roof-like; apical declivity smooth and progressive, with apex slightly uplifted; basal rim complete and raised, reaching scutellum (often raised); striae same width as interstriae (larger punctures at base); interstriae usually flat. Legs robust, femora broader than eye diameter (1.16×), tibiae incrassating apicad, protibiae as long as metatibiae, usually with 4-5 short pre-apical denticles and another 4-5 each followed by 1-2 smaller ones covering ¾ length of tibia (Fig. 5D); meso- and metatibiae with very small denticles. Tarsi rather broad. Spiculum relictum of sternite VIII with arms longer than its base and apical sclerotisation (head) elongate (Fig. 52M). Penis tube (Figs. 6C, 54E) with ogival apex, little reflexed at tip (less than *H. daute* n. sp.); endophallus with globose bilobed mid-section (Figs. 6C, 56D); tegmen without median dorsal projection between parameres (Fig. 57I).

Females as males but larger (body size 13.7×5.3 mm - 16.0×6.2 mm), more expanded but not much; pronotum usually broader (L/W 0.82); elytra inflated (L/W 1.74) with a less roof-like appearance at base; broadest usually behind middle; strial punctures smaller. Pilosity less developed, but with some scattered long hairs. Protibiae with smaller denticles, only on distal half. Ventrite 5 with lateral grooves impressed in basal third; disc inflated (Fig. 5F). Spiculum ventrale as in *H. subvestitus subvestitus* (Fig. 59G), with strongly emarginated mid-apical margin and much longer apodeme. Spermatheca with narrow nodulus (Fig. 59O).

Remarks. In the Germar Collection kept at the Martin-Luther-Universität at Halle (Germany), there are nine specimens under the heading *Herpisticus laesicollis,* but only two males and two females belong to this species. The only specimen that bears a label "Teneriffa / V. Rebeuer" is a male here designated as lectotype; the other three as paralectotypes. From the rest of the specimens, two males (one bearing a label "G. Canaria") belong to *H. subvestitus grancanariensis* Palm, 1974, two females without labels to

H. bobadillae n. sp.—which probably originate in the collecting excursion of Walther May to La Gomera, in February 1908 (May, 1912) —and one male that could not be identified with confidence.

The DNA sequences of specimens of *H. laesicollis* originating in the NW of Tenerife (Anaga, Santa Cruz, Radazul) cluster separatedly from similarly shaped specimens from the rest of the island, which form two groups: one with long hairs over the entire elytra—here described as *H. aridicola* n. sp.—in the arid south and west (13.4% K2P distance), and another, *H. daute* n. sp., on the central north and northwestern slopes of the island (12.8% K2P distance). See remarks in these species.

Specimens from the central windward parts of the islands, at intermediate elevations (Montaña Bermejo; Fuente Fría; Las Lagunetas, etc.), show the pilosity on the apical half of elytra more developed than Anaga specimens, but keeping the *laesicollis* pattern (half short / half long). However, sequenced specimens from the Orotava Valley cluster with specimens of Teno as *H. daute* n. sp. This pattern of two related species in Teno (west) – Anaga (east), with somewhat morphologically intermediate species/subspecies in the younger terrains in between is common in several beetles endemic to Tenerife (*Carabus, Eutrichopus, Laparocerus,* etc.) and it is likely to depend on which refuge-area, Teno or Anaga, played a more important role in the re-colonisation of the intermediate parts (v. Machado, 1976: 393).

Specimens from the Valley of Güímar and sothwards of it, on the island leeward side, are in general of paler colouration, less slender, with slightly more covex eyes, and somewhat less developed pilosity. They could represent another differentiated subspecies (4.3% genetic distance) and merit also further study.

Distribution and ecology. *Herpisticus laesicollis* is endemic to Tenerife where it is distributed in the Anaga massif, expanding westwards along the windward north slope of the island towards the Orotava

Fig. 34.— *Herpisticus laesicollis* Germar, 1823 ♂ (Tenerife, Santa Cruz).

Fig. 34.— *Herpisticus laesicollis* Germar, 1823 ♂ (Tenerife, Santa Cruz).

Valley, and on the leeward side until the El Río ravine at the boundary of Arico municipality (Fig. 37). It lives in xerophytic open environments, mostly in the warm lower and intermediate zones, but easily reaching 1000 m altitude in dryer exposed spots within the forested areas. Found mostly under stones, or beaten from different plants during the night when it is active: *Artemisia, Aeonium, Dittrichia, Sonchus, Lavandula, Cynara,* etc. Occasionally, it can develop as a pest to crops like avocado trees (*Persea americana*), mango trees (*Mangifera indica*) or vineyards (*Vitis vinifera*).

Herpisticus daute Machado **n. sp.**
urn:lsid:zoobank.org:act:637F516A-DBEB-41DF-B6FD-5E5793D6A3DE
Figs. 35, 48, 52N, 54F, 58L, 59P
Proposed Spanish common name: *Gorgojo gandul de Teno*

Herpisticus eremita (pars),in Uyttenboogaart & Zumpt, 1940: 671; Lindberg & Lindberg, 1958: 45.
Herpisticus laesicollis, in Stüben *et al.,* 2015: 154.
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.

Type locality: Teno Alto. Tenerife, Canary Islands.

Material examined. Holotype: **Tenerife**. Teno Alto: La Majada 870 m (28º20′10″N 16º52º43,5ºW) 1♂ 6-12-2010 leg. A. Machado (TFMC/CO-16039).– Paratypes: Same collecting data 3 exx [DNA 10296T | MN432562], 25 exx 17-8-2019 (on *Artemisia thuscula* and *Cistus monspeliensis*); Cumbre de Erjos 1184 m 1 ex 8-12-2017 (on *Innula viscosa*): Buenavista: Montaña de Taco 1 ex 14-1-2011 leg. A. Machado (AMC).– Monte Los Silos 1 ex 12-1927 leg. A. Cabrera, *ibidem* 1 ex 30-5-1929 leg. F. Andreu (MNCN).– Buenavista 1 ex 12-3-1950 leg. H. Lindberg, 1 ex 31-3-1957 leg. O. Lundblad [FMNH].– Teno Alto 1 ex 10-4-2009 leg. J. Martín. (TFMC).– Los Silos, Barranco de la Torre 370 m (28°21′24″N 16°52′30″W) 1 ex 24-12-2003; Teno Alto 1 ex 2-1-1995 leg. P. Oromí (POM).– Las Portelas 1 ex (*Aeonium*) 8-11-2003 leg. A. Aguiar (AAC).– Teno: Barranco de Nateros 2 exx 12-10-2004 leg. GIET (DZUL).– Teno: Montaña Picón de Pelado 1100 m 1 ex 17-12-2011 leg. E. Colonnelli (EC).– Teno Alto 1 ex 15-8-2007] leg. A. Santos. Teno Bajo 2 exx 28-7-1968 leg. M. Morales. Buenavista: tunnel to Punta de Teno, 1 ex 21-6-2009 [DNA 10270T | MN432557] leg. H. López (AMC).– Teno Alto: La Majada 879 m 17-8-2019 9 exx leg. R. Valle (RVLL).– Non - paratypes: Agua García 2 exx (doubtful) 6-1925 leg. A. Cabrera. La Orotava 1 ex 6-1921 leg. M. Escalera (MNCN).– La Orotava 2 exx [DNA 10301T | MN432564] 21-9-2007 leg. A. Machado (AMC).– Barranco del Carrizal, 434 m (28°19′14″N 16°52′03″W) 1 ex [DNA 717-PST | KC784291] 13-1-2012 leg. P. Stüben (ZMFK).– Teno: Barranco del Carrizal 370 m 2 exx 2-1-2004 leg. P. Stüben (PST).– Los Carrizales 3 exx 1-11-2002 leg. A. Aguiar (AAC).– Masca 610 m 2 exx! 14-4-2007 leg. R. Valle (RVLL).

Description. Body size ♂ 11.0×4.0 mm - 13.6×4.9 mm. Like *H. laesicollis*, but elytra more convex transversally, broader at base, less elliptical appearance. Colouration likewise variable, often dark and somewhat greenish; scales tangent. Pilosity on elytra dense and rather uniform; hairs curved/ recurved and overlapping, increasing in length towards apex but no longer than a claw (at most a few longer bristles near apex); tuft short. Antennal flagellum twice the length of scape; rostrum more transversal (L/W 0.78-0.80) and slightly convergent apicad. Eye convexity 17-18%. Pronotum (L/W 0.87) laterally more arcuate, often with mid-inflexion (lateral impression); widest towards middle; base without marked angular teeth. Elytra long-oval (L/W 1.80), 3.1× length of pronotum, less constricted at base; striae as broad as interstriae, punctures large and deep; interstriae usually subconvex. Protibiae longer than metatibiae (1.08×), with denticles less developed and more uniform than in *H. laesicollis* (on 2/3 of tibia): denticles of metatibiae hardly discernible. Spiculum relictum of sternite VIII (Fig. 52N) with arms shorter than its base. Apex of penis tube with somewhat acuminate apex (laterally sinuous), a little reflexed at tip, but more than *H. laesicollis* (Fig. 54F); tegmen with median dorsal projection between parameres more or less developed.

Females (size 11.2×4.5 mm - 14.3×5.8 mm) as male but larger; pronotum (L/W 0.86); elytra (L/W 1.72) more inflated and apically acuminated; pilosity reduced, hairs recurved, hard to see on first half. Ventrite 5 without latero-basal grooves. Plate of Spiculum ventrale with arcuate apical margin (Fig. 58L). Spermatheca with long slender cornu (Fig. 59P).

Etymology. The specific epithet is the name Daute in apposition, one of the aboriginal kingdoms of Tenerife, where the species is present.

Remarks. This species looks very similar to *H. laesicollis* despite the 12.8% KP2 genetic distance among them. Females are easier to distinguish because the denticles of metatibiae are usually not developed and elytra are beset with only short hairs and no trace of longer ones. The male elytra are more uniformly convex at base and the pilosity may be more or less developed in size, hairs are curved or recurved, not longer than a tarsal claw, and are spread over the entire elytra, increasing uniformly in size towards the apex, whereas in *H. laesicollis* there is a clear contrasting difference between the curved short hairs in the basal half of the elytra and the longer hairs in the apical half. Moreover, females of *H. daute* do not bear protruding erect hairs among the layer of recurved / curved hairs. Doubts can be solved by inspecting the apex of the penis (Fig. 54F), which is more acuminate in *H. daute* n. sp., with sides sinuous like in *H. aridicola* n. sp., whereas it is ogival with arcuate sides in *H. laesicollis* /Fig. 54E).

Distribution and ecology. Endemic to the island of Tenerife, where it is distributed on its northern slope from Agua García (Tacoronte) in the middle to Teno massif in

Fig. 35.— *Herpisticus daute* n. sp. holotype ♂ (Tenerife, Teno Alto).

Fig. 35.— *Herpisticus daute* n. sp. holotype ♂ (Tenerife, Teno Alto).

the extreme NW (Fig. 37). It lives from the coast up to intermediate elevations (ca. 1000 m altitude), on shrubby vegetation (Fig. 49C, type locality) or at open spots in forested areas. It is more common in Teno than in other areas, but Masca ravine seems to mark its southern limit, being replaced by *H. aridicola* n. sp. southwards. It has been collected at night by beating *Artemisia thuscula,* and less common on *Aeonium pseudourbicum*, *Ditrichia viscosa* or *Cistus monspeliensis*.

Herpisticus aridicola Machado **n. sp.**
urn:lsid:zoobank.org:act:F60BF6D9-507A-431D-A511-6F2C5DD15F2E
Figs. 7B, 36, 52O, 54G, 56E, 59Q
Proposed Spanish common name: *Gorgojo gandul sureño*

Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45.
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpisticus eremita, in Hernández *et al.,* 2009: 89, 96.

Type locality: El Médano. Tenerife, Canary Islands.

Material examined. Holotype: **Tenerife**. El Médano 1♂ 5-1927 leg. A. Cabrera (MNCN).– Paratypes: El Médano 1 ex 17-10-1926, 1 ex 16-9-1926 (Los Arenales), 19 exx 5-1927, 16 exx 11-1927, 1 ex 3-8-1930, 1 ex 6-8-1929, 1 ex 5-1930, 1 ex 25-7-1930, 2 exx 27-7-1930, 1 ex 30-7-1930, 12 exx 9-1931 leg. A. Cabrera (MNCN).– Las Galletas 1♀ 6-6-1972 leg. J.M. Fernández. Malpaís, 2 exx 23-6-1974 leg. M. Brito (TFMC).– Arona 1 ex 25-2-1972; El Médano 1 ex 13-3-1974, 1 ex 31-1-1994 leg. P. Oromí (POM).– San Isidro: Barranco de Castro 223 m (28°05′07″N 16°32′50″W) 6 exx 29/07/2019 (near *Schizogyne sericea*); Granadilla: Atogo 198 m (28°03′38″N 16°35′25″W) 4 exx 29-7-2019; s. Playa de La Tejita (28°02′01″N 16°33′22″W) 4 m 2 exx 29-7-2019 (below *Schizogyne sericea*); Guaza: El Palmar 100 m 5 exx 21-7-2019 leg. R. Valle (RVLL).– Malpaís de Rasca 7 exx 19/28-4-2007 (*Schizogyne, Neochamaelia*) leg. GIET. Arona: La Buzanada 1 ex 7-3-1996 leg. J.S. (DZUL).– Montaña Guaza 1 ex 16-2-2015; Puertito Armeñime (28R 326366 3110832) 1 ex 15-2-2015; Armeñime: Llano Atalaya (28R 327734 3112145) 2 exx 15-2-2015 leg. H. López (HLH).– El Médano 1 ex 8-7-70 leg. J. Bonnet. San Miguel (rotonda) 2 exx 9-3-2009; Granadilla: Chimiche 300 m 5 exx 30-4-2007; Valle de San Lorenzo 200 m 1 ex 7-12-2004 [DNA 10169T | MN432541]; San Isidro 283 m (28º05′02″N 16º33′55″W) 11 ex 20-7-2019 [DNA 10044T | MN432528]; El Médano, Barranquillo Calderones 16 m (28º03′18″N 16º32′14″W) 26-7-2019 12 exx leg. A. Machado (AMC).– Same locality 2 exx 3-11-2019 leg. R. García (RGB).– Non-paratypes: supra Tamaimo 650 m, 28°16′N 16°48′W 10 exx 14-3-1998, leg. G. Müller (PST).– Fasnia: El Guincho 3 exx

2-4-2010 leg. H. López (HLH).– Tamaimo, 600 m 1 ex 22-2-1950; Valle de Santiago, 1000 m 3 exx 20/21-2-1950; Guía de Isora 1 ex 18-1-1947; Adeje: Cuesta de los Pasos 1200 m 2 exx 25-2-1950 leg. H. Lindberg (FMNH).– Valle de Masca 1 ex 12/13-5-1947 leg. H. Lindberg, 1 ex 31-3-1957 leg. O. Lundblad (FMNH).– Masca, 1 ex 29-12-1976 leg. GIET; Teno 3 exx 18-6-2004 leg. E. Cano (DZUL).– Santiago del Teide 1 ex 30-12-1973 leg. M.C. Brito (TFMC). – Adeje: Barranco del Infierno 550 m 1 ex 25-3-1972; Guía de Isora: Las Fuentes (28º03′18″N 16º32′14″W) 26-7-2019 43 exx leg A. Machado (AMC); idem 26 exx leg. R. Valle (RVLL).– Guía de Isora: Tejina 681 m (28º10′52″N 16º45′22″W) 26-7-2019 3 exx leg A. Machado (3 AMC) idem. 8 exx leg. R. Valle (RVLL). Santiago del Teide 900 m (28º17′35″N 16º48′55″W) 31 exx 20-7-2019 (*Bystropogon, Kleinia, Retama, Aeonium*); Santiago Teide: La Serenita 952 m (28º17′205″N 16º48′21″W) 3 exx 20-7-2019 leg. A. Machado (AMC).

Description. Body size ♂ 9.2×3.4 mm - 11.2×4.2 mm. Like *H. laesicollis*, but of smaller size and less elliptical appearance; scaling mottled, usually dominantly cinereous on dark background (white, testaceous and glaucous scales); scales flat, somewhat polygonal and adjacent. Elytra covered (hairy appearance) with straight or arcuate erect long hairs (1-3× claw length, ocassionally irregular) increasing in length apicad; with apical tuft; a few raised short hairs on head and pronotum (protruding at lateral margin). Antennal flagellum twice the length of scape; rostrum (L/W 0.86-0.88) more or less slightly convergent apicad; eye convexity 22%. Pronotum (L/W 0.83) with arcuate sides, but little constricted at base; widest towards middle; base without marked angular teeth; dorsal integument

Fig. 36.— *Herpisticus aridicola* n. sp. ♂ (Tenerife, Punta de Rasca).

Fig. 36.— *Herpisticus aridicola* n. sp. ♂ (Tenerife, Punta de Rasca).

uneven. Elytra long-oval (L/W 1.80), 2.8× length of pronotum, less constricted at base; striae broader than interstriae; punctures deep, very conspicuous. Legs more slender; protibiae straighter, less bent, as long as metatibiae, with pattern of denticles as in *H. laesicollis* but more uniform on 2/3 of protibiae, at most some granules on metatibiae. Spiculum relictum of sternite VIII (Fig. 52O) with arms longer than its base and elongated apical sclerotisation. Penis with apex tube laterally sinuous as in *H. daute* n. sp., and little reflexed at tip. (Fig. 54G); tegmen without median dorsal projection between parameres; endophallus (Fig. 56E); transfer apparatus (Fig. 7B) with narrow curved base, sides somewhat angulate.

Female as male but larger (♀ 12.7×5.2 mm - 15.4×5.7 mm); pronotum (L/W 0.80 - 0.84,); elytra (L/W 1.69) more constricted at base and inflated, 2.9× length of pronotum; interstriae as broad or less than striae; pilosity less dense and little conspicuous, with short curved hairs (< claw) and some scattered longer erect ones, at least near apex. Protibiae with about 4 denticles. Ventrite 5 with lateral grooves marked, disc inflated, and area between groove and margin beset with multifid white scales. Plate of spiculum ventrale with external margin slightly emarginate at middle third (less than in *H. laesicollis*). Spermatheca with protruding collum (Fig. 59Q).

Etymology. The name *aridicola* is a noun in apposition formed by the conjunction of the Latin terms "aridus", an adjective meaning arid or dry, and the ending "cola" meaning inhabitant, in reference to the arid habitats of Tenerife where the species dwells.

Remarks. The hairy appearance of *H. aridicola* n. sp. resembles in extreme cases that of *H. lanatus* from Gran Canaria or *H. hispidus* from La Gomera. From the former it can be distinguished by the denticles of male protibiae being smaller and more uniform, the larger punctures of elytra, and the less recurved apex of the penis; and from the latter species by its more convergent rostrum with blunt apical angles, not parallel with squarish angles.

The other *Herpisticus* species from Tenerife have no long suberect hairs on the basal third of the elytra. Specimens of *H. aridicola* n. sp. with somewhat reduced and less silky pilosity from the western slope of the island—entering the Teno massif— get closer in appearance to *H. daute*. However, the pilosity in *H. daute* is denser with curved/ recurved hairs shorter than a tarsal claw, and void of protruding longer erect/ suberect hairs (at most a few near the apex in the male elytra). Moreover, the male of one pair from Agua Mansa (15-6-1927 leg. A. Cabrera; MNCN) has long hairs over the entire elytra and should be attributed to *H. aridicola*, whereas this locality—if correct—is on the humid north-side of the island. The female bears a pre-apical tubercle on each elytron (teratology?).

Distribution and ecology. *Herpisticus aridicola* n. sp. is endemic to Tenerife (Fig. 37), where it is distributed in the lower and intermediate calcareous districts (0-550 m altitude) of the southern and western parts of the island, which are the most xeric habitats, characterised by the presence of *Euphorbia* species and *Launaea spinosa*. In these orientations, it can reach the limits of the pineforest (ca. 1000 m altitude). It has been collected on *Schizogyne sericea, Artemisia thuscula, Kleinia neriifolia, Dittrichia viscosa, Retama monosperma Foeniculum vulgare, Aeonium pseudourbicum*, *Cneorum pulverulentum*, *Bystropogon origanifolius* and in great numbers on one isolated almond tree.

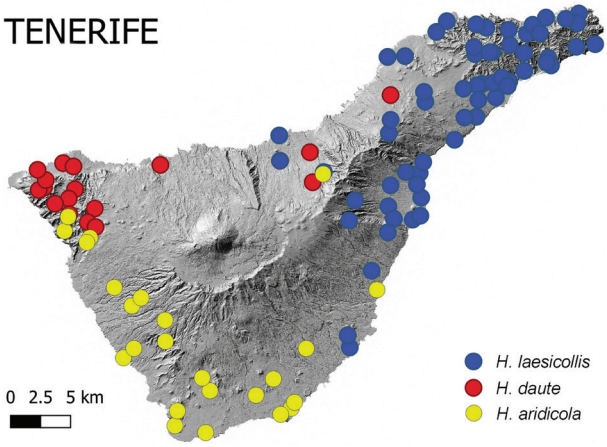

Fig. 37.— Presence of *Herpisticus* species in the island of Tenerife.

Fig. 37.— Presencia de especies de *Herpisticus* en la isla de Tenerife.

Herpisticus gomerensis Machado **n. sp.**
urn:lsid:zoobank.org:act:E645FAA6-8CB1-448A-B00F-3B59D6AB1849
Figs. 38, 54H, 56F, 57K, 58N, 59R
Proposed Spanish common name: *Gorgojo gandul gomero*

Herpisticus laesicollis (pars), in Stüben, 2011: 115, figs. HERere1, HERere2; Stüben, 2014a: fig. HERlae.1GM; Stüben & Behne, 2015: fig. HERlae.1GM.
Herpisticus cf. laesicollis, in Stüben *et al.*, 2015: 153 [DNA].

Type locality: Alojera. La Gomera, Canary Islands.

Material examined. Holotype: **La Gomera**. Alojera: Punta Ujal 520 m (28º09′28″N 27º18′40″W) 1♂ 16-3-2019 leg. A. Machado (TFMC/CO-16040).– Paratypes: same collecting data 9 exx [DNA 10316G | MN432571], on *Retama monosperma*; Cabezo de Epina 630 m (28º10′13″N 27º18′40″W) 2 exx 16-3-2019; Arure: San Antonio cemetery 917 m (28º27′44″N 17º18′55″W) 1 ex 21-2-2019 [DNA 10333G | MN432582]; Las Hayas 2 exx 17-4-2000 [DNA 10134G | MN432538] leg. A. Machado (AMC).– Near Arure 912 m (28°08′13″N, 17°18′00″W) 2 exx 13-12-2009 sifting *Sonchus gomerensis*; Epina - Alojera (28°10'00"N, 17°18'07"W) 694 m 1 ex 19-2-2011 leg. Stüben (PST).– Epina (28R 27384

Fig. 38.— *Herpisticus gomerensis* n. sp. ♂ (La Gomera, Alojera).

Fig. 38.— *Herpisticus gomerensis* n. sp. ♂ (La Gomera, Alojera).

311784) 1 ex 11-5-2003; leg. P. Oromí (DZUL).– Alojera: El Paso 1090 m 1 ♀ 17-8-1977 leg. P. Oromí (POM).– Arure 2 exx 10-7-2001 leg. R. García (RGB).– Non-paratypes: Agulo 1♀ 15-2-1908 leg. W. May (NHMN).– Gomera (without further data) 20 exx leg. F. Navarro. Monte Cruz de Tierno 2 exx 18-6-1934 leg. A. Cabrera. Laguna Grande, 1 ex 13-4-1952 leg. J. Mateu (MNCN).– Hermigua 1 ex 7-1-1977 leg. P. Oromí (TFMC).– Ermita de Santa Clara 3 exx 7-12-2002 leg. M. Peña (MAPE).– Valle Gran Rey: Playa del Inglés 10 m (28°05′56″N 16°17°20′53W) 1 ex [DNA 1663-PST | MH051981] 3-12-2013 leg. P. Stüben (ZFMK).– Hermigua 2 exx 1-1971 leg. P. Oromí (DZUL).– Valle Gran Rey 1 ex 24-12-1976 leg. A. Brito (DZUL).

Description. *Herpisticus* of moderate size (body size ♂ 9.7×3.7 mm - 14.1×5.4 mm), similar to *H. laesicollis* but elytra evenly convex transversally in basal third, beset with short curved hairs towards base (overlapping among them) and longer silky bent hairs increasing in size toward apex (hairs at middle approx. as long as a claw); scaling equally variable in colour; scales small, round, tangent. Antennal flagellum about as long as twice the length of scape (1.9-2.0); club fusiform (L/W 3.3); rostrum long (L/W 0.9), slightly convergent apicad or paralell; eyes a little oval L/W 1.1), moderately prominent (convexity 20-23%). Pronotum (L/W 0.62-0.85) more parallel-sided; posterior angle squarish; dorsum uneven (pre- and post discal depressions conspicuous). Elytra (L/W ≈1.7) more parallel and broader before base, 2.8× length of pronotum; widest behind middle; declivity starting about mid-length; striae as broad as interstriae; interstriae a little subconvex. Legs robust; protibiae slightly longer than metatibiae (1.05×), with rather small denticles and

granules alternating; mesotibiae and metatibiae with smallish denticles. Spiculum relictum of sternite VIII with arms longer than its base and apical sclerotisation (head) elongate. Penis tube (Fig. 54H) with tip of apex triangular and blunt, a little reflexed (less than *H. daute* n. sp.); everted endophallus with short apical section (Fig. 56F) and inverted-trapezoidal mid-section. Tegmen with median dorsal projection between parameres; ring broad (Fig. 57K).

Female like male but larger, broader and more convex (body size 12.8×5.2 mm - 16.4×6.5 mm); antennal club broader (L/W 2.8): pronotum (L/W 0.82); elytra more elliptical and expanded (L/W 1.73), with mix of short curved and recurved hairs, and few scattered or no long silky hairs at apical third. Plate of spiculum ventrale with alrcuate external margin (Fig. 58N). Spermatheca with short collum (Fig. 59R).

Etymology. The specific epithet is an adjective that refers to the species inhabiting the island of La Gomera.

Remarks. *Herpisticus gomerensis* n. sp can easily be separated from *H. bobadillae* because of its long silky hairs on the elytra, but it is rather difficult to distinguish from *H. hispidus* n. sp., which has an even more developed pilosity (see remarks on this species). Surprisingly, it clusters (100 ppb) as clade R with clade S from El Hierro and La Palma (7.7-7.8% K2P distances) and not with the Gomeran lineage (clade M) of *H. bobadillae* and *H. hispidus* n. sp., showing 11.8% and 12.4% K2P distances, respectively.

Distribution and ecology. *Herpisticus gomerensis* n. sp. is endemic to La Gomera and lives in the western half of the island, including the wide valleys of Vallehermoso, Gran Rey, and Alojera, from the coast to the higher parts (1000 m altitude). Specimens were collected in open shrubby habitat, under stones, beaten during the night from *Retama monosperma*, and sifting dry hanging leaves of *Sonchus gomerensis*. Some old specimens originate from the valley of Hermigua, where *H. bobadillae* is also present (western limit). See Fig. 41.

Herpisticus hispidus Machado **n. sp.**
urn:lsid:zoobank.org:act:59172AD1-DC3F-4ADA-B043-90A638F5C4C4
Figs. 7H, 39, 52P, 54I, 57C, 58M, 59T
Proposed Spanish common name: *Gorgojo gandul de Benchijigua*

Type locality. Playa Santiago: Lomada Los Llanos. La Gomera, Canary Islands.

Material examined. Holotype: **La Gomera**. Playa Santiago: Lomada Los Llanos (above airport) 330 m (28º02′07″N 17º13′14″W) 1♂ 22-2-2019 on *Kleinia* leg. A. Machado (TFMC/CO-16041). Paratypes. Same collecting data 6 exx [DNA 10334G | MN432583]; Barranco de Benchijigua 675 m 1 ex 6-12-2006 [DNA 10212G | MN432547]; Degollada de Hernia 532 m 2 exx 20-2-2007, 490 m (28º03′44″N 17º12′12″W) 10 exx [DNA 10330G | MN432579]; Imada: Punta Campillo 1075 m (28º25′08″N 17º14′44″W) 5 exx [DNA 10329G | MN432578] 21-2-2019 on *Cistus* leg. A. Machado (AMC).– Benchijigua 711 m (28°5′02″N 17°12′26″W) 1 ex 17-2-2011 leg. P. Stüben (ZFMK).– Playa Santiago, airport 218 m 1 ex 20-4-2011 leg. R. Valle (RVLL).– Non-paratypes: Tecina 1 ex 11-4-1975 leg. J.M. Fernández (TFMC).– Tecina 50 m 2 exx 17-4-1987 leg. E. Colonnelli (EC).– San Sebastián: Las Nieves 2 exx 20-8-1990; Cumbre Juan Tomé 1 ♀ 3-1-1981 leg. P. Oromí (DZUL).– Supra Hermigua 2 3xx 10-6-2019 leg. R. García (RGB).– Hermigua: Mirador El Bailadero 994 m 2 exx 10-2-2016; Cumbre de Juan Tomé 975 m (28º07′20N 17º12′26″W), 1 ex 2-1-2016, 2 exx. [DNA 10289G | MN432561] 17-3-2019 (sifting *Sonchus*); San Sebastián: Ermita de Las Nieves (28º06′04″N 17º12′08″W) 1052 m 21-2-2019 37 exx [DNA 10332G | MN432581] leg. A. Machado (AMC).

Description. Body size ♂ 10.5×4.0 mm - 12.4×4.6 mm. Much similar to *L. gomerensis* in shape and colouration, with scales more separated and pilosity of elytra more strongly developed. Long hairs as long as tarsal claw at base, increasing in length (2-3× tarsal claw) and often irregular towards apex, of hairy appearance if raised up, like in *L. aridicola* n. sp. Antennal flagellum 2× length of scape; club (L/W 3.0); rostrum (L/W 0.87) squarish at apex, parallel-sided or a trifle divergent apicad; eyes slightly oval (L/W 1.1), convexity 20-22%. Pronotum less broad (L/W 0.9); slightly more constricted anteriorly; pre- and post discal depressions conspicuous; lateral impression strongly marked; posterior angle obtuse, without protruding tooth. Elytra (L/W 1.74) less convex at base, with slight posthumeral depression; 2.6× length of pronotum; widest behind middle; declivity at apical third; striae as broad as interstriae; interstriae a little subconvex. Scutellum U-shaped. Protibia longer than metatibiae (1.1×), with strong denticles alternating with small: meso- and metatibiae with denticles. Spiculum relictum of sternite VIII (Fig. 52P) with arms shorter than its base and with apical sclerotisation elongate. Penis tube with tip of apex triangular and blunt, a little reflexed (Fig. 54I): endophallic mid-sector globose and distally a little concave (Fig. 7H). Tegmen without sclerotised dorsal projection between parameres; ring very broad (Fig. 57C).

Female as male, but larger and broader (body size 10.5×4.0 mm - 14.6×5.9 mm); elytral pilosity very small, inconspicuous (hairs recurved), with only a little apical tuft; pronotum broader (L/W 0.8); elytra broader (L/W 1.6); elytral striae narrower; tarsi slenderer. Tibial denticles less developed but conspicuous. Spiculum ventrale (Fig. 58M). Spermatheca with short ramus (Fig 69T).

Etymology. The specific epithet *hispidus* (“hairy” in Latin) is and adjective that refers to the appearance of the males.

Fig. 39.— *Herpisticus hispidus* n. sp. ♂ (La Gomera, Lomada Los Llanos).

Fig. 39.— *Herpisticus hispidus* n. sp. ♂ (La Gomera, Lomada Los Llanos).

Remarks. Despite the morphological resemblance of *Herpisticus hispidus* n. sp. with *H. gomerensis* n. sp., there is a high enough COI genetic K2P distance (12.4%) to consider it a separate species, although somewhat cryptic. The genetic distance with *H. bobadillae* n. sp., to which it is related as sister-species in our phylogram (Fig.3, clade N), is lower (8.3%), but the absence of long pilosity on the male elytra is sufficient to separate the latter. The extreme reduction of the elytral pilosity in the females is noteworthy, being absolutely inconspicuous (bare appearance). All three Gomeran species have the penis apex a little reflexed, and there are no evident differences except for the shape of the median globose part of the everted endophallus, being concave anteriorly and slightly bilobed in this new species (Fig. 7H)—not in *H. bobadillae*—, and inverted-trapezoidal in *H. gomerensis* n. sp. (Figs. 56F). Additionally, the tegmen has no median dorsal projection between the parameres (developed in the other two species). In cases, the more squarish and parallel rostrum (sometimes with divergent sides) of *H. hispidus* n. sp. may help in separating it from rather hairy specimens of *H. gomerensis* (rostrum slightly convergent).

Distribution and ecology. *Herpisticus hispidus* n. sp. is endemic to La Gomeraand seems to be restricted to the southeastern sector of the island (Fig. 41), like *Laparocerus benchijigua* Machado, 2007 or *L. dilutus* Machado, 2014, which are also apterous Gomeran endemic weevils. It does not overlap with *H. gomerensis* n sp. or *H. bobadillae* n. sp., and is distributed from the arid spurge communities near the coast up to the rim of the watershed at 1000 m altitude, close to the forest limit. An aggregation of many specimens was found on a group of sun-exposed stones on a small grassy clearing in the *Erica-Morella* forest border (Fig. 49F). Other specimens have been obtained by sifting below *Rumex lunaria* and *Cistus monspeliensis*, or beating *Cistus* or *Kleinia neriifolia* directly at night.

Herpisticus bobadillae Machado **n. sp.**
urn:lsid:zoobank.org:act:1F2AF8EA-B02B-4B5E-808D-7745C20836EC
Figs. 40, 52R, 54J, 57J, 58O, 59S

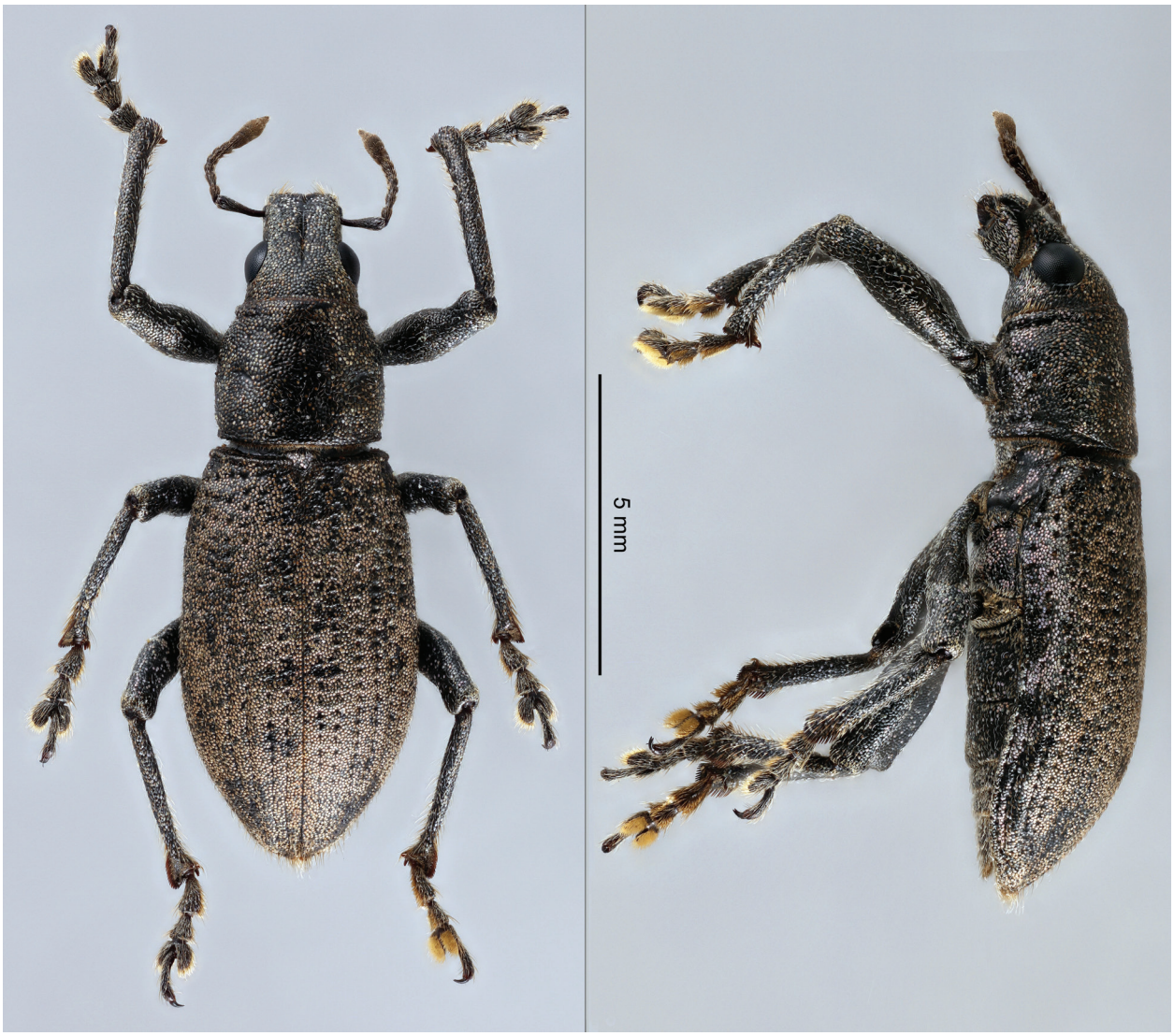

Fig. 40.— *Herpisticus bobadillae* n. sp. ♂ (La Gomera, San Sebastián).

Fig. 40.— *Herpisticus bobadillae* n. sp. ♂ (La Gomera, San Sebastián).

Proposed Spanish common name: *Gorgojo gandul de La Villa*

Herpysticus eremita, in Wollaston, 1865: 333 (pars); Uyttenboogaart, 1935: 15.

Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45; Uyttenboogaart, 1940: 61; Palm, 1967: 35; García *et al.,* 1993: 241; Oromí *et al.,* 2001: 211, 2004: 224, 2010: 272; Morales *et al.,* 2002: 165; Stüben, 2011: 115; Schütte *et al.,* 2013: 33

Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.

Herpisticus cf. *laesicollis*, in Stüben *et al.,* 2015: 154 [DNA].

Type locality. San Sebastián La Gomera, Canary Islands.

Material examined. Holotype: **La Gomera**. San Sebastián [28º05′23″N 17º06′47″W] 1♂ 8-5-1962 leg. J.M. Fernández (TFMC/CO-16042).– Paratypes: Same collecting data 9 exx 8-5-1962 leg. J.M. Fernández. San Sebastián 3 exx 4-7-1973 leg. A. Aguiar (TFMC).– San Sebastián 2 exx 28-4-1957 leg. O. Lundblad; 4 exx 17-3-1950 leg. H. Lindberg (FMNH).– Las Casetas 1 ex 7-12-2006 leg. M. Peña (MAPE).– San Sebastián 1 ex 23-4-1973 leg. P. Oromí (POM).– San Sebastián 3 exx 20-7-1973; Barranco de la Villa: Las Casetas 5 exx 7-12-2006 [DNA 10206G | MN432545], Barranco de la Villa: Langrero 110 m 2 exx 11-1-2014; San Sebastían: Las Galanas 20 m (28º02′07″N 17º13′14″W) 10 exx [DNA 10331G | MN432580] 23-2-2019, 2 exx 17-3-2019 leg. A. Machado. San Sebastián 3 exx 4-7-1973 leg. J. Bonnet (AMC).– Non-paratypes: Gomera (without further data) 8 exx; Cuevas Blancas 1 ex 30-12-1921; Los Canteros 2 exx 30-12-1921 leg. M. Escalera. Hermigua: La Vegueta 2 exx 9/10-6-1934; Hermigua 5 exx 10-6-1934; Monte del Cedro 3 exx 6-1934 leg. A. Cabrera (MNCN).– Hermigua 1 ex. leg R. Storå (FMNH).– San Sebastián 2 exx 8-5-1962 leg. J.M. Fernández. Hermigua 1 ex 7-1-1977 leg. P. Oromí (TFMC).– Puntallana 1 ex 8-12-2002 leg. M. Peña (MAPE).– Majona 1 ex 8-12-2006; Enchereda 1 ex 8-12-2006 leg. R. García (RGB).– Hermigua: El Palmar 312 m 2 exx 6-3-2012 leg. J. Cratky (JC).– La Cumbre tunnel [Aguajilva] 339 m 2

exx 3-12-2012; Los Chejelipes 18-2 exx 12-2015; Hermigua: s. Casas El Palmar 641 m (28°09′28″N 17°09′41″W) 1 ex [DNA 1674-PST | MH051982] 7-12-2013 leg. P. Stüben (ZFMK).– Hermigua: Ermita San Juan 1♀ 9-12-2006; Puntallana (28R 2933 31131) 3 exx 7-4-2009; Hermigua 1♀ 8-8-1987 leg. P. Oromí (POM).– Puntallana 15 m 2 exx 26-4-2011 leg. R. Valle (RVLL).– Hermigua: El Cabezo 516 m (28R 283913 3114739) 1 ex [DNA 10013G | MN432522] leg. D. Suárez. Hermigua 1 ex 9-4-1974 leg. A. Machado. Altos de Juel 1 ex 1973 leg. A. Santos (AMC).

Description. Body size ♂ 10.0×3.9 mm - 14.3×5.2 mm. Similar to *L. gomerensis,* often with scaling dominantly darker; with denser cover of small recurved hairs which barely overlap, and only few straighter longer hairs near apical tuft. Antennal flagellum shorter than twice length of scape (1.8-1.9); club (L/W 3.0); rostrum squarish, parallel-sided (L/W 0.90); eyes round, convexity 17.5-20.0%. Pronotum with less arcuate sides (0.82); posterior angle obtuse, without protruding tooth; dorsum uneven. Elytra (L/W 1.70-1.74) less arcuate laterally; interstriae more convex (particularly 3 and 5); punctures smaller. Protibia longer than metatibiae (1.05-1.08×), with at least 6 strong denticles alternating with small ones: meso- and metatibiae with denticles. Spiculum relictum of sternite VIII with arms longer than its base and apical sclerotisation (head) elongate (Fig. 52R). Penis tube with apex broadly acuminate (tip blunt, sides sinuous), slightly reflexed at tip (Fig. 54J); tegmen with sclerotised dorsal projection between parameres; ring broad (Fig. 57J).

Female as male, but larger and broader (body size 13.6×5.6 mm - 14.5×5.8 mm); rostrum slightly convergent; pronotum L/W 0.84; elytra L/W 1.74; elytral striae narrower; tarsi slenderer. Tibial denticles less developed but conspicuous. Plate of spiculum ventrale with external margin slightly projecting at middle third (Fig. 58O). Spermatheca with long collum and short ramus (Fig. 59S).

Etymology. Species named in honour of Beatriz de Bobadilla (1462-1501), Spanish Overlady of La Gomera who had sentimental affairs with Christopher Columbus during his provisioning stays on the island before sailing to the Americas.

Remarks. Unlike *Herpisticus gomerensis* n. sp. and *H. hispidus* n. sp., which have abundant protruding long curved or silky hairs on the elytra and also inhabit La Gomera, *H. bobadillae* has only a few long hairs near the apex; looking almost bald (occasionally, the apical tuft is absent).

Distribution and ecology. *Herpisticus bobadillae* n. sp. is endemic to La Gomera and lives in the north-eastern sector of the island at low and intermediate altitudes, in the domain of spurge-formations and sclerophyllous forest (Fig. 41). However, most of the specimens have been collected under stones in abandoned fields. In the natural environment it has been beaten from plants like *Periploca laevigata* or *Convolvulus floridus*. A few old collection specimens are recorded from forested areas (e.g. El Cedro, Juel), but possibly from exposed rocky spots or cultivated fields in these localities.

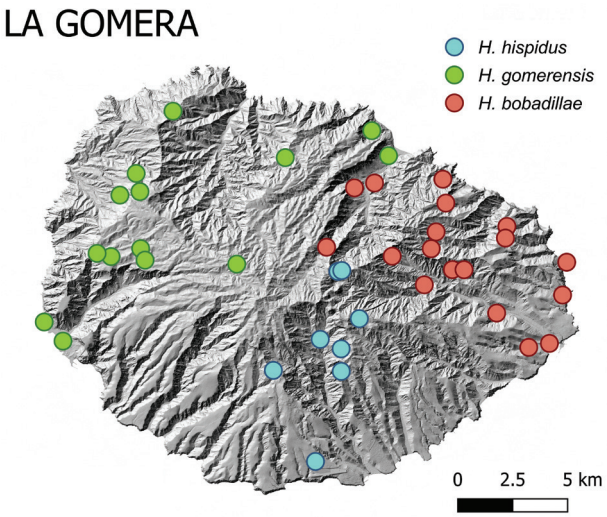

Fig. 41.— Presence of *Herpisticus* species in the island of La Gomera.

Fig. 41.— Presence of *Herpisticus* species in the island of La Gomera.

Herpisticus hierrensis hierrensis Franz, 1979
Figs. 42, 52Q, 54K, 57L, 59V
Spanish common name: *Gorgojo gandul herreño*

Herpisticus hierrensis Franz, 1979: 52, 1996: 121; García *et al.,* 1993: 241; Machado & Oromí, 2000: 79; Oromí *et al*., 2001: 211, 2004: 224, 2010: 272; Ren *et al.,* 2013: 394: Stüben, 2018a: 39 figs. HERhie1HTF, HERHie1MF, HERhie2; Alonso-Zarazaga *et al.,* 2017: 381.
Herpysticus eremita (pars), in Wollaston, 1865: 333.
Herpisticus eremita, in Franz, 1979: 51; Pais & García, 2000: 35 [?]
Herpisticus eremita (pars), in Lindberg & Lindberg, 1958: 45; Palm, 1974: 35; García *et al.,* 1993: 241; Machado & Oromí, 2000: 79; Oromí *et al*., 2001: 211, 2004: 224, 2010: 272; Stüben, 2018a: 39.
Herpisticus eremita eremita (pars), in Gurrea & Sanz, 2000: 333.
Herpisticus cf. laesicollis, in Stüben *et al.,* 2015: 154 [pars, DNA-P]

Type locality. Las Playas El Hierro, Canary Islands.

Material examined. **El Hierro**. Las Playas [27°42′58″N 17°57′30″W] 1♀ (holotype) 8-1-1978 leg. H. Franz (NW).– El Hierro. Bco Tifirave 2 exx 21-6-1934 leg. A. Cabrera (MNCN).– La Caleta 4 exx 30-5-1976, 7 exx 22-5-1963; La Lajita 258-5-1976 leg. J.M. Fernández; Ajare 1 ex 14-11-1952 leg. M. Sánchez (TFMC).– Los Cangrejos 1 ex 23-9-1988 leg. M. Peña (MAPE).– Valverde 1ex

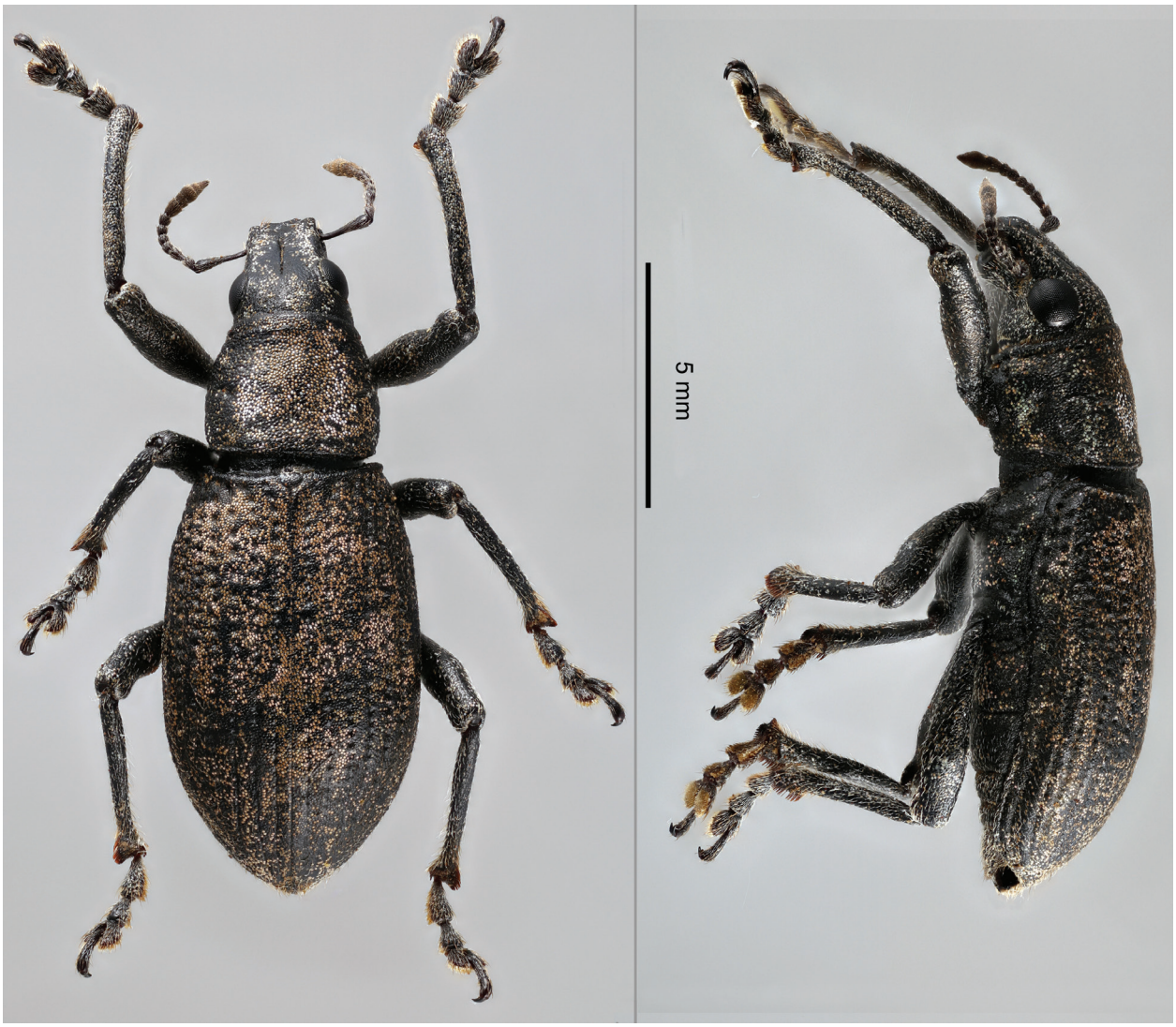

Fig. 42.— *Herpisticus hierrensis hierrensis* Franz 1976 ♂ (El Hierro, La Caleta).

Fig. 42.— *Herpisticus hierrensis hierrensis* Franz 1976 ♂ (El Hierro, La Caleta).

26-7-1991; Monte Jares 1 ex [DNA 10250H | MN432551] 6-12-2008; La Caldereta 1 ex. 5-12-2008 [DNA 10251H | MN432552]; La Caleta 70 m 4 exx 14-3-1985 leg. A. Machado (AMC).– **La Palma**. "La Palma" 1♀ 1888 leg. L. Buchet (NHMN).– Argual: Lomo del Caballo 1 ex 18-5-1934 leg. A. Cabrera (MNCN).– Los Llanos 2 exx 23-5-1947 leg. Lindberg, 1 ex 27-4-1947 leg. C.v Regteren Altena. "La Palma" 1 ex leg. E. Santos Abreu (FMNH).– Bajamar 1 ex 13-5-1973 leg. J.M. Fernández (TFMC).– Los Llanos: Montaña Tenisca 1 ex 9-2-2014 (*Artemisia*) leg. J. Crátky; Tazacorte: Montaña del Río 190 m 1 ex 25-12-2008 leg. T. Forke (JC).– Las Caletas: Las Laderas 300 m 28º29′42″N 17º49′52W 1 ex 27-6-1999 leg. P. Stüben. El Remo 1 ex 29-6-2006; San Antonio-Breña Baja 145 m 1 ex 19-4-1987 leg. R. Jacob (PST).– [Puntallana] Barranco Seco 100 m 1 ex 25-5-1981 leg. P. Noguerol (MAAZ).– Tamanca 2 exx 26-6-2001 leg. Contreras & López. Road to La Grama 1 ex 10-4-1982 leg. J.A. Sánchez. El Remo 2 exx 26-6-2003 leg. López & Morales, 2 exx 15-12-2001 leg. López & Contreras, 1 ex 12-10-2001 leg. H. Contreras; El Remo (28R 217735 3161780) 2 exx 25-6-2001 [DNA CG192 | MN432593] leg. H. López (DZUL).– Los Llanos: Las Norias 260 m 2 exx 3-7-2013 leg. R. Valle (RVLL).– Tamanca 1 ex 20-7-2003 leg. H. López & E. Morales (HLH).– Los Llanos: Cuatro Caminos (*Euphorbia lamarckii*) 1 ex 3-7-2018 leg. A. Aguiar (AAC).– El Remo 1 ex 26-5-2007 leg. R. García (RGB).– El Remo 1 ex 35-7-2001 leg. H. López. Tamanca 1 ex 20-7-2003 leg. López & Contreras (POM).– Carretera a Puerto Naos 2 exx 2-2-2001 [DNA 10306P | MN432567]; Los Llanos: Montaña de Triana 1 ex 19-2-2006 [DNA 10210P | MN432546], 8 exx 4-1-2011 (*Artemisia*) 3 exx 19-2-2012 ; Los Llanos 2 exx 17-6-1999 (*Lavandula*); Montaña Tenisca 1 ex 29-1-2006 leg. A. Machado (AMC).

Redescription. *Herpisticus* of moderate size (body size ♂ 9.9×3.6 mm - 13.0×5.2 mm); long-oval, covered by pink, whitish and dark scales (variable mottled pattern); scales round, subconvex, detached. Elytra with short curved hairs (< length of claw) overlapping and some longer ones scattered near apex (beset with small tufts). Antennal flagellum 2.2× length of scape; club long, fusiform (L/W 3.4) rostrum (L/W 0.80) slightly convergent apicad, with longitudinal shallow rugosity; rostral furrow narrowing posteriad, not surpassing mid-level of eyes. Eyes slightly oval (L/W 1.07), rather flattened (convexity 13-17%). Prothorax (L/W 0.78-0.79),

little arcuate laterally, widest at middle, with marked anterior collar; depressed before disc; discal pits, oblique lateral line and basal lateral depression marked; basal angle near straight (no protruding angular tooth). Scutellum broad-triangular or U-shaped. Elytra (L/W 1.61-1.63) long-oval, broad at base, widest about middle, blunt at apex, 2.8× longer than pronotum. Protibiae as long as metatibiae, with denticles as in *H. laesicollis*; mesotibia with denticles; metatibiae crenulated. Spiculum relictum of sternite VIII with arms shorter than its base and apical sclerotisation short-elongate (Fig. 52Q). Penis with broadened apex), tip blunt, and sides sinuous as in *H. bobadillae* n. sp., but moderately reflexed (Fig.54K); tegmen without (or with a vague trace of) median dorsal projection between parameres; ring narrow, parameres broad (Fig. 57L).

Female as male (body size 11.2×4.4 mm - 13.0×5.4 mm), little different in size and appearance; pronotum (L/W 0.77-0.78), elytra not much broader (L/W1.66), but longer and more acuminate (3.1× length of pronotum)**;** rostrum slightly more transversal (L/W 0.7); flagellum /scape ratio 2.0, and tarsi more slender. Plate of spiculum ventrale with apical margin slightly angulate. Spermatheca with long collum and ramus (Fig. 59V).

Remarks. Franz characterised *H. hierrensis* by flattened eyes and by "antennae inserted after mid rostrum (in *H. eremita* inserted well away from mid rostrum and reaching slightly anterior margin of eye)". This latter observation is clearly erroneous, but the eyes are indeed much flattened.

The genetic COI K2P mean distance between specimens from El Hierro and La Palma is too low (3.5%) to consider them different species. In fact, this seems to be the only confirmed case of a species inhabiting simultaneously two of the main islands, which are actually the youngest of the Canary Islands, with 1.12 Ma and 1.72 Ma, respectively (Carracedo & Troll, 2016).

La Palma specimens have slightly more convex eyes (17-19%) and the pronotum is not so depressed behind the front margin as in specimens from El Hierro. Besides these little differences, the other characters match except in specimens from the interior of the Caldera de Taburiente and the north and northeast slopes of La Palma. Their elytra are beset with suberect hairs (about the length of a tarsal claw) instead of being uniformly covered by short curved pilosity as on El Hierro or SW La Palma. On Gran Canaria, Tenerife and La Gomera there are species with and without long hairs, and it seems that this tendency also occurs on La Palma. To recognise this important morphological differentiation, we split *Herpisticus hierrensis* into two subspecies. Considering that the other subspecies –*H. hierrensis benahoare* n. ssp.– is restricted to the older parts of the island, it is likely that El Hierro was colonised by specimens originating in the southern and youngest part of La Palma.

Distribution and ecology. *Herpisticus hierrensis hierrensis* is endemic to the islands of El Hierro (Fig. 43) and La Palma (Fig. 45). It seems not to be very common, at least on the first island, where it is the only *Herpisticus* species present. Franz found the type near the western coast, below a trunk of *Euphorbia canariensis*, and thereafter not many specimens have been collected in the lower arid coastal zone but rather at intermediate elevations (600-700 m), under stones in mountain shrubby habitat with *Cistus, Asphodelus,* etc.). On La Palma, all recorded specimens originate from the southwest of the island, mostly from leeward arid environments; while the rest and older parts of the island are apparently inhabited by the other subspecies, *H. hierrensis benahoare* n. ssp., but not at high elevations. It has been collected on *Artemisia thuscula, Kleinia neriifolia, Euphorbia lamarckii*, *Lavandula pinnatifida* or just below stones.

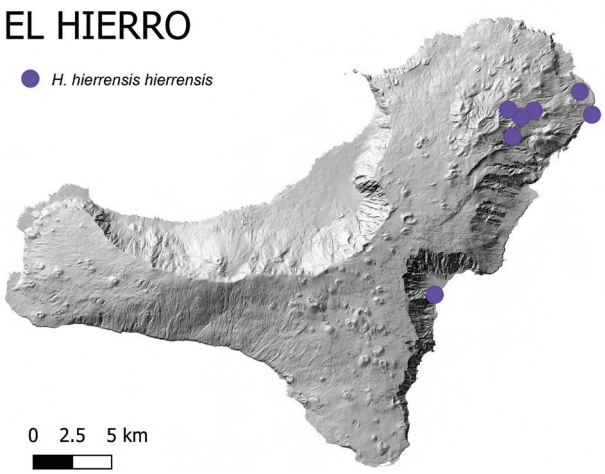

Fig. 43.— Presence of *Herpisticus* species in the island of El Hierro.

Fig. 43.— Presencia de especies de *Herpisticus* en la isla de El Hierro.

Herpisticus hierrensis benahoare Machado **n. ssp.**
urn:lsid:zoobank.org:act:8C4B85AD-94BA-4BA4-901E-2B26C5C1125F
Figs. 44, 54L, 58P
Proposed Spanish common name: *Gorgojo gandul palmero*

Herpisticus eremita (pars), in Uyttenboogaart, 1940: 61.
Herpisticus eremita, in Cosens, 1964: 63.
Herpisticus cf. laesicollis, in Stüben *et al.,* 2015: 154 [DNA].

Type locality: Puntagorda. La Palma, Canary Islands.

Material examined. Holotype: **La Palma**. Puntagorda: Llanada del Puerto 221 m (28º45′34″N 18º00′07″W) 1♂ 6-7-2018 leg. R. García (TFMC/CO-16043).– Paratypes: Same locality and collector 6 exx [DNA 10315P | MN432570] 6-7-2018 (RGB),

29 exx 10-6-2019 (9 RGB, 20 AMC).– ca. Puerto Puntagorda 227 m (28°45′32″N 18°00′08″W) 1 ex [DNA 1747-PST | MH051983] 17-1-2017 (*Kleinia)* leg. P. Stüben (ZFMK).— Non-paratypes: Juan Adalid 1 ex 15-5-2018; Mazo: Salemera 1 ex 23-4-2010 leg. R. García (RGB).– Garafía: Juan Adalid 247 m 1 ex (*Kleinia*) 29-1-2013 leg. J. Cratky (JC)).– El Tablado 2 exx 16-3-1997 leg. G. Müller. Las Tricias 1 ex 10-1-2017 R. Jacob (PST).– Juan Adalid 2 exx 13-8-1992 leg. P. Oromí (POM).– Tijarafe, supra Playa Jurado 382 m (28º42'18 "N 17º58'00"W) 17 exx leg. R. Valle (RVLL).– Garafía 1 ex 6-2-1979; Caldera de Taburiente 12 exx 26-6-1989 leg A. Machado (2 TFMC, 11 AMC).

Differential diagnosis. Similar to nominotype subspecies, of moderate size (body size ♂ 11.3×3.9 mm - 11.9×4.0 mm) but elytra with curved hairs less depressed and slightly longer (2-3× diameter of scale), and with at least the apical third beset with many additional suberect hairs about length of a claw or longer). Rostrum less convergent apicad; eyes a little more prominent (convexity 17-21%); elytral punctures broader and deep (foveiform); protibiae somewhat longer than metatibiae (1.05×), with tiny denticles except 1-2; mesotibia and metatibiae at most with granules (not crenulate). Penis with apex less reflexed (Fig. 54L). Tegmen with arms and ring narrower.

Females larger and broader than males (body size 12.5×4.8 mm -14.6×6.0 mm), with interstriae a little more convex. Plate of spiculum ventrale with apical margin slightly angulate (Fig. 58P).

Etymology. Benahoare is the aboriginal name of La Palma, here used as a noun in apposition as the specific epithet.

Remarks. The genetic distance between this subspecies and the nominal subspecies is not much (2.0-3.9%) in relative terms for *Herpisticus* (see comments under *H. calvus*). However, the morphological differences—particularly the development of long pilosity on the elytra—and the allopatry of the two populations justify the subspecies status proposed here.

Fig. 44.— *Herpisticus hierrensis benahoare* n. sp. ♂ (La Palma, La Caldera de Taburiente).

Fig. 44.— *Herpisticus hierrensis benahoare* n. sp. ♂ (La Palma, La Caldera de Taburiente).

Distribution and ecology. *Herpisticus hierrensis benahoare* n. ssp. is endemic to La Palma, living at low altitudes (0-300 m) in the oldest part of the island (northern half), including the central giant Caldera de Taburiente (Fig. 45). The records are too scarce to infer its real altitudinal range and its distribution on the windward side of the island. One isolated specimen from the SE coast (Mazo, Salemera) contradicts the allopatry of the subspecies and such status, but having been collected near a manure-heap in a banana plantation, an occasional introduction from the north cannot be discarded. When new banana fields are planted in the traditional way using "heads" (basal part of the trunk bearing sprouts), they are brought from a different remote site within the island; moreover, animal manure is also usually produced and sold in the north, where cattle are abundant.

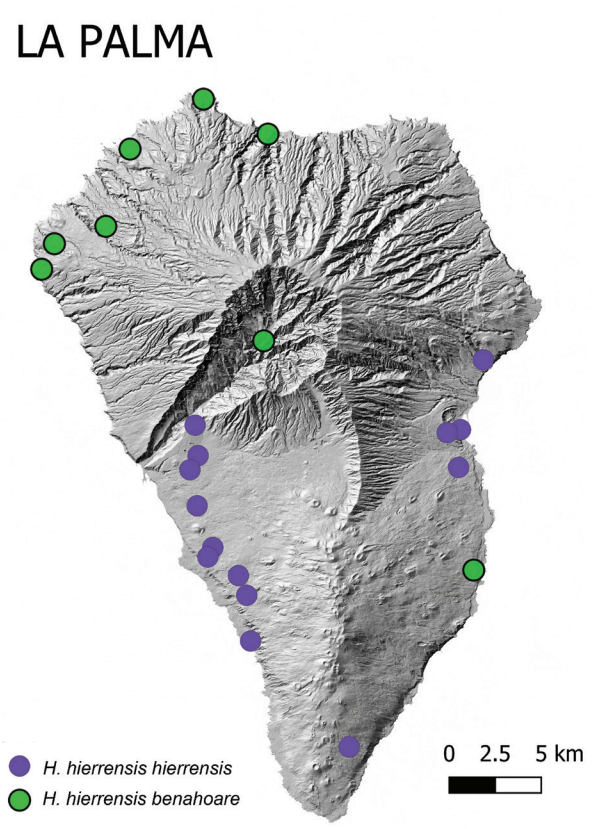

Fig. 45.— Presence of *Herpisticus* species in the island of La Palma.

Fig. 45.— Presencia de especies de *Herpisticus* en la isla de La Palma.

Key to *Herpisticus* (♂)

In this key all references to pilosity refer to males. If sex is doubtful, length of elytra /length of pronotum <3 applies to males, and > 3 to females (except *H. denudatus* 2.9-3.0).

1 Elytra beset only with curved or recurved hairs shorter than the length of a tarsal claw, with apical tuft absent or barely developed. Antennal club including desmomere 7 long-oval and broader (L/W < 3). Body size < 13 mm. Eastern Canary Islands 2
– Elytra with many or some erect or suberect hairs longer than a tarsal claw, mixed or not with shorter ones, at least in apical third or just near elytral apex; otherwise body size > 13 mm; apical tuft usually present. Antennal club including desmomere 7 narrower (L/W > 3). Central and western Canary Islands 6

2 Protibiae straight and narrow; external angle at apex right or projected slightly outwards. Onychium (without claw) as long as scape. Fuerteventura (south)..... ***Herpisticus rectipes*** n. sp.
– Protibiae bent inwards apicad, external angle at apex obtuse and curved, never projecting outwards. Onychium (without claw) shorter than scape..... 3

3 Hairs on outer face of tibiae and femora very small, recurved, not or hardly overlapping. Lateral area of rostrum between the dorsal margin and the upper margin of scrobes depressed, forming a step; epifrons with one longitudinal shallow depression at each side of the median sulcus. Fuerteventura (southern summits)..... ***Herpisticus jandiensis*** n. sp.
– Hairs on outer face of tibiae and femora longer, curved, more projecting, and usually overlapping. Lateral area of rostrum between the dorsal margin and the upper margin of scrobes even, not depressed; epifrons even or with marked longitudinal rugosity. 4

4 Elytral hairs curved pointing backwards, more disperse and hardly overlapping longitudinally. Eyes more prominent (convexity 33-45%). Lanzarote. ***Herpisticus oculatus*** Woll. 1864
– Elytral hairs recurved (pointing downwards), denser and clearly overlapping longitudinally. Eyes less prominent (convexity < 33%)..... 5

5 Epifrons with longitudinal rugosity. Scales round and small detached from each other. Elytra with smaller hairs (about half size of claw) and a few less recurved at apex (N Lanzarote and islets)..... ***Herpisticus famarae*** n. sp.
– Epifrons without longitudinal rugosity. Scales flat, large, polygonal, and tangential (compact tessellate). Elytra with hairs at apex as recurved as at disc. Fuerteventura 6

6 Antennal flagellums < 2× length of scape. Dorsolateral margins of rostrum blunt; ratio rostrum width / interocular distance <1.15. Fuerteventura (most of island). ..... ***Herpisticus calvus*** Woll. 1864
– Antennal flagellum > 2× length of scape. Dorsolateral margins of rostrum sharply marked; ratio rostrum width / interocular distance > 1.15. Fuerteventura (Betancuria massif) ..... ***Herpisticus betancuriae*** n. sp.

7 Living on Gran Canaria 8
– Living on other islands (Tenerife, La Gomera, La Palma or El Hierro)..... 18

8 Rostrum longer (L/W > 0.90), parallel-sided with lateral margins more sharply delimited and antero-lateral angles squarish..... 9
– Rostrum shorter (L/W < 0.90), sides slightly or clearly convergent apicad, with lateral margins less edged and antero-lateral angles blunt..... 12

9 Elytra beset only with short recurved hairs (0.5× tarsal claw) and a small tuft of longer hairs at the apex. Gran Canaria (NW) ..... ***Herpisticus gigas*** n. sp.
– Elytra with longer suberect hairs (≥ tarsal claw) emerging from the cover of curved or recurved smaller hairs 10

10 Pronotum with curved sides, widest at middle, and no marked lateral basal tooth; long hairs of elytra scattered on apical half. Gran Canaria (La Isleta). ..... ***Herpisticus guayarmina*** n. sp.
– Pronotum with arcuate/subparallel sides, widest before middle, and marked lateral basal tooth; long hairs over the entire elytra 11

11 Pronotum with four discal points and rather even (no depressed median line); its base straight, without lateral angular tooth. Ratio ♀ length elytra/ pronotum >3.1 Gran Canaria (summits) ..... ***Herpisticus guanarteme*** n. sp.
– Pronotum without discal points and rather uneven (median line depressed); its base a little emarginated at mid-third, with pointed angular teeth at each side. Ratio ♀ length elytra/ pronotum <3. Gran Canaria (west)..... ***Herpisticus denudatus*** n. sp.

12 Head with some erect or suberect protruding hairs (lateral view); tibiae hairy (hairs longer than tibial diameter) 13
– Head with only depressed hairs; tibiae not particularly hairy 15

13 Pronotum with reduced pilosity and with foveolate discal points; elytral pilosity shorter (hair length ≈ tarsal claw) and scarce. Size ♂ small 7.7-8.1 mm. Gran Canaria (Punta de las Arenas) ..... ***Herpisticus nanus*** n. sp.
– Pronotum with conspicuous pilosity and with shallow or no discal points; elytral pilosity denser with silky hairs longer than 2× tarsal claw, many of them of irregular shape (twisted). Hairy appearance. Size ♂ 8.5-10.6 mm 14

14 Eyes less protruding (convexity 22-25%). Erect hairs of pronotum usually shorter. Gran Canaria (west of the ravine of Tirajana) ..... ***Herpisticus lanatus*** Wollaston, 1864
– Eyes more protruding (convexity 26-28%). Erect hairs of pronotum usually longer. Gran Canaria (east of the ravine of Tirajana) ..... ***Herpisticus subvestitus pseudolanatus*** n. ssp.

15 Elytra covered with small uniform recurved pilosity and at most a few isolated protruding hairs near apex. Gran Canaria (El Risco-Faneque) ..... ***Herpisticus scopulus*** n. sp.
– Elytra with conspicuous additionally long hairs at least at apical third 16

16 Long suberect hairs present on the entire elytra (longer on apical half). Metatibiae usually with small denticles on inner rim (Gran Canaria) ..... ***Herpisticus subvestitus subvestitus*** Wollaston, 1864
– Long suberect hairs (barely exceeding length of tarsal claw) restricted to apical half of elytra. Metatibiae usually without denticles on inner rim 17

17 Eyes more protruding (convexity 28-30%). Elytral interstriae flat. Outer face of protibiae with protruding bent hairs. Apex of penis more curved in lateral view. Gran Canaria (east) ..... ***Herpisticus subvestitus grancanariensis*** Palm, 1974
– Eyes less protruding (convexity 18-21%). Elytral interstriae somewhat subcarinate, conspicuous. Outer face of protibiae with less protruding curved hairs. Apex of penis less curved in lateral view. Gran Canaria (west) ..... ***Herpisticus tasarticus*** n. sp.

18 Elytra beset with recurved and/or curved hairs and additional long suberect silky hairs (as long or longer than a claw), the latter at least in apical third 19
– Elytra beset with recurved or curved hairs and at most a few longer hairs near the apex (never at basal half) or integrating the apical tuft 23

19 Long hairs spread over the entire elytra 20
– Long hairs restricted to apical half; if present in basal half, bent down, not protruding 21

20 Presence restricted to the island of Tenerife (south & west) ..... ***Herpisticus aridicola*** n. sp.
– Presence restricted to the island of La Gomera (NW) ..... ***Herpisticus hispidus*** n. sp.

21 Rostrum longer (L/W 0.9), parallel or slightly divergent toward apex, with lateral margins sharply edged. La Gomera (north) ..... ***Herpisticus gomerensis*** n. sp
– Rostrum shorter (L/W 0.8), slightly convergent apicad, with lateral margins not sharply edged 22

22 Lateral declivities of elytra in basal third somewhat straight (roof-like section). Denticles of protibiae longer than diameter of elytral scale; metatibiae with denticles. Tenerife (NE) ..... ***Herpisticus laesicollis*** Germar, 1823
– Lateral declivity of elytra in basal third evenly curved. Denticles of protibiae very small (less than diameter of scale); metatibiae without denticles. La Palma (north). ..... ***Herpisticus hierrensis benahoare*** n. sp.

23 Rostrum longer (L/W 0.9) and parallel. La Gomera (south) ..... ***Herpisticus bobadillae*** n. sp.
– Rostrum shorter (L/W < 0.9) and slightly convergent apicad 24

24 Antennal flagellum twice as long as scape; hairs of elytra progressively less recurved and longer from base towards apex. Metatibiae not crenulated. Tenerife (NW) ..... ***Herpisticus daute*** n. sp.
– Antennal flagellum longer than twice the scape (2.2×); hairs recurved on the entire elytra, with a few suberect longer hairs near apex. Metatibiae crenulated. El Hierro and La Palma (south) ..... ***Herpisticus hierrensis hierrensis*** Palm, 1979

Additional remarks

There is no information published on the natural history of *Herpisticus*. To undertake such a study would imply at least two years, as it did with the phenology and biology of *Laparocerus* (cf. Machado & Aguiar, 2005, 2019). However, the empirical information gathered from the copious material examined and from our field experience allows us to infer a broad image of the natural history of this weevil.

Phenology. We summarised the number of collection specimens for each month in Fig. 46, disregarding

those collected in 2018 and 2019 in excursions focused on *Herpisticus*, which are not comparable with previous years in which these weevils were taken collaterally. There is a peak in May, and a minimum in September. However, this pattern may be somewhat biased as insect collecting periods in the Canaries are concentrated in winter and spring, and less in summer (dry season). The absence of young imagos bearing the mandibulary deciduous appendix (Fig. 47) in January and February, with a peak in March, suggests that *Herpisticus* is not a winter animal as are most Canarian *Laparocerus* and other Entiminae.

Moreover, our recent field experience reflects that it is after April and mainly in July-August when *Herpisticus* appears in numbers in the countryside, as to justify its appellative as summer animal. However, this should be taken as a general tendency and may not apply to all species (e.g. *H. denudatus* n. sp. emerges in winter). In the Canaries, the phenology of insects is not as sharply tuned as in continental habitats, depending greatly on the shifting first and late rains of each year and on the varied mesoclimate conditions within each island. *Herpisticus* can be found in any month, but more probably in late spring and early summer, after their emergence.

Biology. The imagos are strong animals, long-living, perhaps a whole year (kept in terrarium at least 8 months), and can resist without food 12-47 days (average 27, n = 10). They are active mainly during the night, but we have seen them also moving and feeding during the day, mostly in cultivated fields and greenhouses, less in natural habitats. With daylight, they hide under stones (on the ground or clinging to their underside), in the bunches of dry leaves that hang from plants like *Sonchus*, *Aeonium*, or *Kleinia*, or they just keep still, hanging on to the petiole of leaves, small twigs, below loose bark or any crevice where they feel sheltered.

Herpisticus is very active sexually and is commonly found in pairs copulating or just with the male resting on the females for hours. In the Güímar valley (Tenerife) we recorded a popular name for *Herpisticus laesicollis* as '*el gorgojo follador',* that means something like 'the horny weevil', but this would certainly fit all *Herpisticus*.

During the copula of *H. subvestitus pseudolanatus* the male introduces 2/3 of the penis and from time to time makes a push, keeping almost parallel on the female, not as oblique as in *Laparocerus*. We tried to obtain eggs by providing the terrarium with earth, seedlings, plant leaves, sticks and Van Emden fans (*v*. Machado & Aguiar, 2019), with little success. On 5/12/2018, five white eggs (3+2) were laid in nooks of the plastic cover of the terrarium. In another terrarium with two pairs of *H. denudatus* n. sp., we found one white egg loose on the plastic bottom; two eggs with a slightly greenish tint adhered in a nook of the cover, two eggs (white and dark) exposed on the earth, and three blackish eggs when washing the *Kleinia* leaves provided as food. The terrarium was not inspected for a week, and we conclude that the eggs were not laid the same day and they turn from white to black as they mature, as in *Sitona* and many other broad-nose weevils that drop eggs at random, singly and without cover (Van Emden, 1950; Marvaldi, 1999a). It seems that *Herpisticus* oviposites without making any special arrangements, gluing the eggs free on surfaces —category 3 *sensu* Anderson & Lyal, 1995— but we so far do not know if it is on the plant, the ground or both options. Its very short oviscapt supports this idea. The number of eggs in several inspected females does not exceed ten, five in each ovarium. This is a rather low number for a large-sized weevil, particularly compared with *Laparocerus,* where eggs can reach a hundred kept in the abdomen. The low number of eggs in

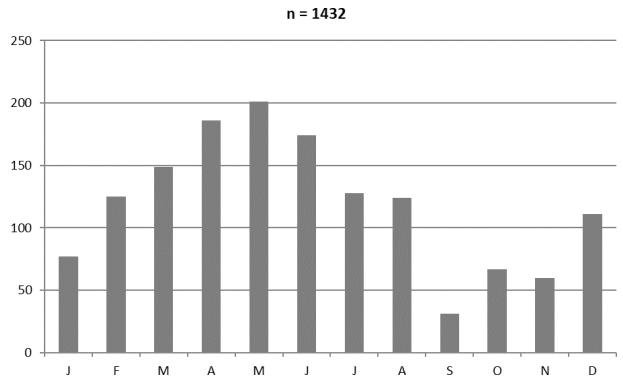

Fig. 46.— Number of collection specimens of *Herpisticus* per sampling month.

Fig. 46.— Número de ejemplares de *Herpisticus* en colecciones según el mes de captura.

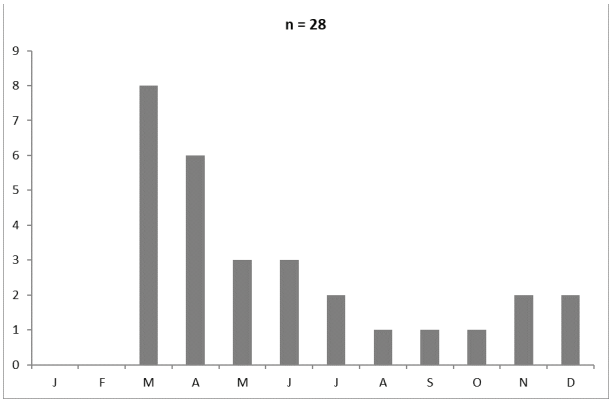

Fig. 47.— Number of collection specimens with mandibular appendix (young imagos) per sampling month.

Fig. 47.— Número de ejemplares de *Herpisticus* en colecciones con apéndice mandibular (imagos jóvenes), según el mes de captura.

Herpisticus, if confirmed by more observations, is likely to be compensated by more repeated oviposition during their life. This is a topic that merits further studies.

Field larvae of *H. subvestitus pseudolanatus* placed in November 2018 in a pot with a young pepper-plant, ended in one pupa (24/3/2019, killed for drawing) and an imago (1/4/2019), and there were still two large but inactive larvae in the earth. Four to five months is a plausible development time for a weevil of the size of *Herpisticus*, in which diapause is likely to play an important role.

Parasites. It is not uncommon to find ectoparasitic mites on *Herpisticus*, especially in the dry summer months. They are normally attached to the underparts of the body and more rarely on the legs or margins of the elytra (Fig. 48). Some heavily infested specimens may hold more than 30 mites on them, but they apparently do not greatly harm the weevil´s activity. *Leptus (Leptus) maxorata* Haitlinger, 2009 (Acari: Prostigmata: Erythraeidae) was described on specimens obtained from *Herpisticus calvus* on Fuerteventura, and at present Dr. Haitlinger (Wroclaw) is studying material provided from other islands, which presumably belongs to several new species.

Habitats. *Herpisticus* species live in open exposed habitats free of the shade of trees or very dense bushes. When they are occasionally found in forested areas or thickets, it is in clearings, along the margins of dirt tracks, or on stony outcrops exposed directly to the sun. Within this limitation and avoiding high humidity, they are rather euritopic. Some species range from the coast to the high mountains (maximum about 1,600 m altitude), where snow can be present in winter. Clayish and calcareous soils are clearly their preference; bare lava or lapilli fields are avoided, but sandy areas count with at least two apparently adapted species: *H. rectipes* n. sp. and *H. nanus* n. sp. Figure 49 shows a sample of the varied natural habitats where *Herpisticus* is present, and several species are not reluctant to enter anthropic habitats (abandoned plots) or cultivated fields where pesticides are not used (organic agriculture).

Herpisticus is not so abundant as *Laparocerus,* both in number of species —19 versus 216— and of individuals. Their presence in nature is also less uniform,

Fig. 48.— Parasitic *Leptus* sp. (Acari, Erythraeidae) on *Herpisticus daute* n. sp. (T: Teno Alto).

Fig. 48.— *Leptus* sp. parásitos (Acari, Erythraeidae) sobre *Herpisticus daute* n. sp. (T: Teno Alto).

Fig. 49.— Sample of habitats of *Herpisticus*. **A** = *H. calvus* in arid lowlands with *Kleinia* (F: La Antigua), **B** = *H. rectipes* **n. sp.** in sandy hills with *Ononyx* and *Launaea* (F: Itsmo de la Pared), **C** = *H. daute* **n. sp.** in mountain open spots with *Cistus* (T: Teno Alto), **D** = *H. subvestitus grancanariensis* in barren fields with *Beta* (C: Sardina), **E** = *H. guanarteme* **n. sp.** in high mountain scrub land with *Teline* (C: Cruz de Tejeda), and **F** = *H. hispidus* **n. sp.** in marginal clearings of *Myrica-Erica* forest (G: Ermita de Las Nieves).

Fig. 49.— Muestra de hábitats de *Herpisticus*. **A** = *H. calvus* en llanuras áridas con *Kleinia* (F: La Antigua), **B** = *H. rectipes* **n. sp.** en colinas arenosas con *Ononyx* y *Launaea* (F: Itsmo de la Pared), **C** = *H. daute* **n. sp.** en zona montana despejada con *Cistus* (T: Teno Alto), **D** = *H. subvestitus grancanariensis* en eriales con *Beta* (C: Sardina), **E** = *H. guanarteme* **n. sp.** en zonas de matorral de montaña con *Teline* (C: Cruz de Tejeda), y **F** = *H. hispidus* **n. sp.** en claros marginales en el bosque de *Myrica-Erica* (G: Ermita de Las Nieves).

showing an aggregate distribution: the habitat may be vast and continuous but *Herpisticus* appears in a limited area, and the next group may be very distant. It is also uncommon to beat down more than a pair of *Herpisticus* from the same plant, while in *Laparocerus* there can be dozens of them.

Food plants. Entimine larvae dwell in the earth and feed freely on roots of plants, thus its scarce specificity compared with endophytic larvae of other weevils. Palm (1974) reports large *Herpisticus* larvae in April, feeding on roots of *Aeonium canariense* in Tejeda, and we have seen larvae of *H. subvestitus pseudolanatus* eating roots of pepper plants, pumpkin and lettuce.

Adults are moderately polyphageous, but it is not uncommon to find them in a given locality feeding only on one species of plant, while in

another locality they select a different species. This may be related to the roots they fed on when growing up as larvae.

With some practice, *Herpisticus* feeding marks on the leaves of plants can be distinguished from those made by other phytophagous insects. They never start feeding from the inside of the leaf leaving holes, like chrysomelids or acridids. They normally eat at the margin of the leaf and move quickly, leaving a set of separate notches trimming the leaf (Fig. 50E), and if they occasionally eat their way further inwards in soft leaves (e.g. *Capsicum*), then the openings are wide and short (Fig. 50B), not as a corridor that may bifurcate or form diverticula, as typical in *Laparocerus* (Fig. 50A), by far the most common and abundant genus of short-nosed weevil present in the Canary Islands (Machado, 2003). The notches and galleries made by microlepidoptera (Fig. 50D) start from the interior of the leaf or margins increasing progressively in width, and those of *Naupactus* are much broader and deeper as they stay longer gnawing at the same place, and have usually a characteristic curved digitiform shape (Fig. 50)

The list of feeding plants registered for *Herpisticus* is not so extensive (Table 1) as it is likely to become. This may derive from the fact that collecting at night—when the adult feeds actively—is a recent practice in the Canaries, and in the past most specimens have been found during the day below stones or sifting plant debris, their refuge-niches. Its presence on several cultivated plants speaks in favour of a wider polyphagy (see next section).

In the wild, the plants most palatable to the genus are apparently *Kleinia neriifolia*, *Artemisia thuscula*, *Patellifolia patellaris,* and perhaps some broom species. *Herpisticus* can be present in barren areas where there is not a single green leaf available. Succulent plants like *Kleinia* or dendroid *Euphorbia* lose their leaves in summer, and other plants simply dry out. What *Herpisticus* eats in such situations is an intriguing question. In the laboratory they can last more than one month without food, but that may be insufficient to overcome a long dry season. Do they eat debris if needed?

Herpisticus as a pest. On occasions, we receive notice of *Herpisticus* producing damage to agriculture crops (eg. Puntagorda, on La Palma; Güímar on Tenerife, Ingenio on Gran Canaria, etc.). There are also some newsletters from the Agriculture Service where *Herpisticus* is depicted as a pest of vines, mango, or avocado trees. However, in more technical publications (e.g. Rodríguez López, 1994) it is not included, as it probably generates more alarm than real damage; at least in these crops. A few leaves being eaten by this weevil does not really harm large trees or their fruits, and if it eats the inflorescence of mango trees, for instance, it may even trigger the generation of more flowers or favour less but bigger fruits. Nonetheless,

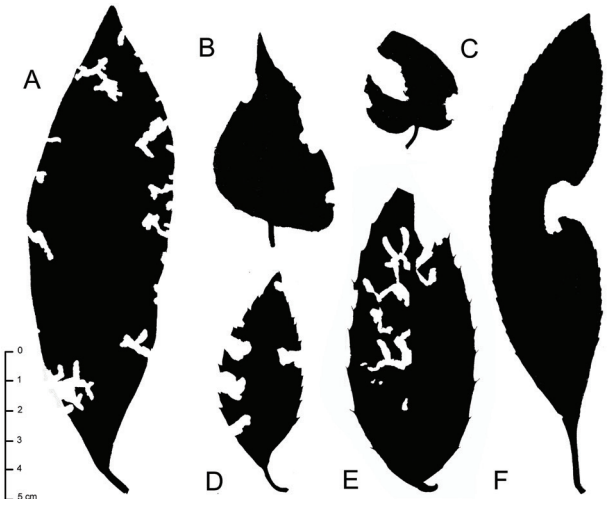

Fig. 50.— Feeding marks. **A** = *Laparocerus excavatus* Woll. 1863 on *Laurus azorica* Seub. **B** = *Herpisticus lanatus* Woll. 1864 on *Capsicum annuum* L. **C** = *Forficula* sp. on *Whitania frutescens* L. **D** = Microlepidoptera larvae on *Ilex platyphylla* Webb et Berthelot. **E** = *Herpisticus subvestitus grancanariensis* Palm, 1974 on *Bosea yerbamora* L. **F** = *Naupactus cervinus* Boheman, 1840 on *Arbustus canariensis* Veill.

Fig. 50.— Marcas de alimentación. **A** = *Laparocerus excavatus* Woll. 1863 sobre *Laurus azorica* Seub. **B** = *Herpisticus lanatus* Woll. 1864 sobre *Capsicum annuum* L. **C** = *Forficula* sp. sobre *Whitania frutescens* L. **D** = Larvas de microlepidóptero sobre *Ilex platyphylla* Webb et Berthelot. **E** = *Herpisticus subvestitus grancanariensis* Palm, 1974 sobre *Bosea yerbamora* L. **F** = *Naupactus cervinus* Boheman, 1840 sobre *Arbustus canariensis* Veill.

real damage may happen during the first year when trees are newly planted and the weevil destroys the few sprouting buds or leaves. A severe case happened in productive mango orchards where weeds (mainly *Patellifolia*) were intensively removed, thus concentrating the weevil's attention on the mango flowers with ca. 90% crop loss (C. Suárez, pers. comm.). The farmers apply pyrethroid insecticides (e.g. cypermethrin) to kill them, until they become convinced it is not worth combatting them in successive years or weeding so thoroughfully. The same in vineyards (e.g. Candelaria in Tenerife), on citrus trees (Telde, Gran Canaria), or almond trees (Puntagorda, La Palma).

The situation is different on vegetables, particularly if they are managed as organic crops. We have visited some fields, usually in greenhouses, where *Herpisticus* thrives in high numbers and causes real damage to watermelon, green bean, cucumber, pumpkin and pepper plants. In Arinaga (Gran Canaria) adult *H. subvestitus pseudolanatus* was destroying the pepper seedlings (5-10%), basically by feeding on their soft stalk 1-2 weeks after planting, and presumably the larvae were also contributing by attacking the roots. These installations were embedded in the arid habitat of the weevil and with *Patellifolia patellaris* bordering the green-houses. In Maspalomas, *H. lanatus* larvae destroyed recently planted pumpkins so completely that the farmers abandoned their cultivation.

Table 1.— Native food plants of *Herpisticus* (*shelter, feeding not confirmed).

Tabla 1.— Plantas alimenticias nativas de *Herpisticus* (* refugio, alimentación no confirmada).

Family	Species	
Amaranthaceae	*Atriplex semibaccata* R. Br.	
Amaranthaceae	*Bosea yerbamora* L.	
Amaranthaceae	*Patellifolia patellaris* (Moq.)	
Amaranthaceae	*Suaeda vera* Forssk. ex J.F. Gmel	
Amaranthaceae	*Salsola vermiculata* L.	
Apiaceae	*Bupleurum salicifolium* R. Br.	
Apiaceae	*Foeniculum vulgare* Mill.	*
Asclepiadaceae	*Periploca laevigata* Aiton	*
Asparagaceae	*Asparagus nesiotes* Svent	
Asparagaceae	*Asparagus scoparius* Lowe	
Asteraceae	*Artemisia thuscula* Cav.	
Asteraceae	*Carthamus lanatus* L.	*
Asteraceae	*Cynara cardunculus* L.	*
Asteraceae	*Dittrichia viscosa* (L.) Greuter	*
Asteraceae	*Kleinia neriifolia* Haw.	
Asteraceae	*Launaea arborescens* (Batt.)	*
Asteracea	*Schizogyne sericea* (L.f.) DC.	*
Asteraceae	*Sonchus congestus* Willd.	*
Asteraceae	*Sonchus gomerensis* Boulos	*
Cistaceae	*Cistus monspeliensis* L.	
Convolvulaceae	*Convolvulus floridus* L. f.	
Crassulaceae	*Aeonium canariense* (L.)	
Crassulaceae	*Aeonium ciliatum* Webb & Berth.	*
Crassulaceae	*Aeonium lancerottense* (Praeger)	
Crassulaceae	*Aeonium pseudourbicum* Bañares	
Crassulaceae	*Aeonium percarneum* (R.P. Murray) Pit. & Proust	
Euphorbiaceae	*Euphorbia lamarckii* Sweet	*
Fabaceae	*Adenocarpus foliolosus* (Aiton) D.C.	
Fabaceae	*Bituminaria bituminosa* (L.) C. H. Stirt	*
Fabaceae	*Lotus callis-viridis* Bramwell. & D. H. Davis	*
Fabaceae	*Ononis natrix* L.	
Fabaceae	*Retama monosperma* (L.)	
Fabaceae	*Teline microphylla* (D.C.)	
Lamiaceae	*Bystropogon origanifolius* L'Herit	
Lamiaceae	*Lavandula canariensis* Mill.	
Lamiaceae	*Salvia canariensis* (L.) C. H. Stirt	
Plantaginaceae	*Globularia salicina* Lam.	
Polygonaceae	*Rumex lunaria* L.	
Rutaceae	*Cneorum pulverulentum* Vent.	*
Rubiaceae	*Rubia fruticosa* Aiton	
Solanaceae	*Lycium intricatum* Boiss.	*

The larvae were eating at the base of the root killing the seedling or debilitating the future plant, resulting in smaller pumpkins. In both cases, the larvae or adults were already in the unplanted plot and were apparently activated by the first irrigation. The farmer just replaced the lost seedlings or used palm or neem oil to combat the weevil. In one case the field was treated with cypermethrin through the irrigation system to kill the larvae before planting (with success). Another possible strategy would be letting the seedlings gain some more size (more sclerified) before being planted. Once the plant grows, feeding becomes

Fig. 51.— Larva (left) and pupa (right) of *Herpisticus subvestitus pseudolanatus* **n. sp**. (C: Arinaga).

Fig. 51.— Larva (izquierda) y pupa (derecha) de *Herpisticus subvestitus pseudolanatus* **n. sp**. (C: Arinaga).

concentrated on the leaves and is merely an aesthetic problem.

Herpisticus has not been reported from ornamental plants in public or private gardens, except one case in a parking parterre, on *Atriplex halimus.*

Distribution. With the exception of *Herpisticus hierrensis,* all species are mono-insular endemics (islets not considered). Within each island, most taxa are or tend to be allopatric, even when living in the same kind of habitat. There are, however, cases where two different species can be found in the same place, mostly on Gran Canaria (e.g. *H. guanarteme* n. sp. and *H. subvestitus subvestitus*; *H. gigas* n. sp. and *H. subvestitus grancanariensis,* or *H. denudatus* n. sp. and *H. lanatus*). Apart from the topo-climatic influence (windward/leeward), the geological imprint in the distribution of this genus is remarkable and likely to be related to the volcanic history of each individual island. Gran Canaria has by far the most complex volcanic history and that could be a plausible explanation for its record of nine *Herpisticus* species in total.

The island maps compiled with all the material studied provide a reasonable idea of the distribution of the genus in the archipelago (Fig. 14 = Lanzarote, Fig 19 = Fuerteventura, Fig. 33 = Gran Canaria, Fig. 47 = Tenerife, Fig. 41 = La Gomera, Fig. 43 = El Hierro, and Fig. 45 = La Palma). It is easy to recognise the almost empty forested areas in the central parts of the western islands, and a belt around where *Herpisticus* shows more presence. In our opinion, the scheme here presented is not definitive, and further new taxa could well appear in the future.

Conservation. *Herpisticus,* like most phytophagous insects, have large populations with high recovery capacity, if enough habitat is available. Predators of *Herpisticus* are mainly spiders –large Gnaphosidae, Lycosidae and *Latrodectes–,* but also very likely vertebrates such as large *Gallotia* lizards, the Canarian shrew *Crocidura canariensis* Hutterer, López-Jurado & Vogel, 1987 (Eastern islands) and birds, despite only few cases have been recorded: red-billed chough *Pyrrhocorax pyrrhocorax barbarus* Vaurie, 1954 (Pais & García, 2000) and the introduced Mediterranean tree-frog *Hyla meridionalis* Boetter, 1874 (Cott, 1934). Other introduced animals like the cat, rats, snakes, and the continental shrews could be more problematic, but these animals usually stay around anthropic environments. Medina & García (2007) refer to *Herpisticus* as an incidental prey in feral cats on La Palma.

A risk for *Herpisticus* species, if any, could come from habitat restriction. The Canary Islands, with a surface of 7,747 km^2, more than 2.1 million inhabitants (ISTAC, 2018 census), plus a floating population of 15.6 million tourists/year (average stay ca. 8 days),

is a densely populated archipelago that has been and still is intensively transformed. At the same time, the Canaries are considered a biodiversity hotspot, with a high number of endemic species. Many of these are obviously of conservation concern, mostly due to loss of natural habitat. This is not a plausible risk for most *Herpisticus* species, which have wide distribution areas and adapt well to environmental changes (e.g. agriculture). Moreover, an overlap analysis of the species-presence maps above commented with the network of protected areas of the Canary Islands (IDE Canarias) shows that all *Herpisticus* species, except *H. denudatus* n. sp. and *H. oculatus,* are present in at least one protected area. These two exceptions have no potential problems of habitat availability. Nonetheless, there are two species with very limited known habitat, which deserve comment:

Herpisticus nanus n. sp. may be linked to the sandy habitat of Punta de Las Arenas, on Gran Canaria, and if this is the case—more prospective effort is needed—its distribution area would be only 0.3 km^2. The area is in a good natural state, remote, with difficult access (only on foot or by sea), part of the Tamadaba Nature Park, and apparently protected from human occupation. But the area is small and exotic species like the recently introduced California kingsnake (*Lampropeltis getula californiae* (Blainville, 1835)) or rats could put the species at risk of extinction if they reach Punta de Las Arenas. It would be a justified measure to prevent visitor access to this area in the management plan of the Park.

Herpisticus guayarmina n. sp. seems to be restricted to the peninsula of La Isleta, like *Laparocerus franzi* Machado, 2012. The available natural or seminatural habitat for *H. guayarmina* n. sp. is less than 6 km^2, half of it —the interior of La Isleta— is military property and used as such. La Isleta is at present a Protected Landscape, a conservation category that permits several uses. The coastal platform areas outside the military zone are continually visited by the public, since the port and city of Las Palmas already occupies the isthmus and also part of La Isleta. There is at present enough pressure on the habitat (litter, car driving, military manoeuvres, etc.) to recommend these two species—*Herpisticus guayarmina* and *Laparocerus franzi*— to be assessed for inclusion in the Canarian Catalogue of Protected Species, perhaps under the category Vulnerable, according to the Canary Islands' Law 4/2010.

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Author contributions: AM conceived and planned the study, identified the species, described the new taxa, checked the DNA alignments, conducted the molecular analysis, and wrote the manuscript; DS carried out DNA extractions and amplifications.

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Appendix 1.– K2P distances (%) in COI sequences en *Herpisticus*.

Apéndice 1.— K2P distancias (%) en secuencias de COI en *Herpisticus*.

BETWEEN GROUPS	*oculatus*	*famarae*	*calvus*	*betancuriae*	*jandiensis*	*rectipes*	*lanatus*	*subvestitus subvestitus*	*subvestitus pseudolanatus*	*subvestitus grancanariensis*	*guanarteme*
H. famarae	15.9										
H. calvus	16.6	14.3									
H. betancuriae	18.0	14.2	10.7								
H. jandiensis	14.1	12.1	14.7	15.0							
H. rectipes	16.7	14.6	4.8	11.4	15.1						
H. lanatus	15.7	14.9	15.5	16.1	14.1	14.7					
H. s. subvestitus	14.7	12.8	13.7	15.4	12.1	13.0	8.6				
H. s. pseudolanatus	15.4	13.4	14.6	16.4	13.3	13.9	9.4	4.0			
H. s. grancanariensis	16.3	12.8	15.6	16.0	13.8	14.2	8.9	5.6	7.1		
H. guanarteme	13.8	13.1	15.2	15.4	12.2	14.5	12.1	10.1	10.4	10.3	
H. dendatus	15.5	11.1	15.3	16.3	11.9	14.2	10.8	9.0	10.6	8.9	10.7
H. guayarmina	16.2	13.1	14.7	16.3	15.3	15.0	14.6	11.6	11.7	12.3	13.6
H. tasarticus	15.6	12.5	13.2	14.2	13.2	12.8	10.4	8.7	8.9	9.8	12.3
H. scopulus	15.3	13.4	15.0	15.5	13.8	13.8	14.1	11.8	12.3	12.4	11.7
H. nanus	18.0	13.9	16.7	17.1	14.3	15.8	12.7	9.9	10.4	11.5	13.9
H. laesicollis	16.5	14.1	16.0	14.9	14.5	15.3	12.8	10.3	10.8	12.1	13.2
H. daute	15.7	14.6	15.5	17.7	14.2	15.5	13.1	11.8	12.5	12.5	13.1
H. aridicola	17.0	15.3	16.3	15.3	15.4	15.7	13.3	11.9	13.3	12.3	14.0
H. gomerensis	17.5	13.5	16.7	17.7	16.3	16.8	12.9	9.4	10.5	10.6	12.9
H. hispidus	17.8	15.9	17.0	17.8	13.9	15.6	10.1	10.1	10.7	10.4	12.8
H. bobadillae	15.6	14.5	16.1	15.9	13.8	14.5	10.4	8.5	9.4	10.0	12.3
H. h. hierrensis	17.3	14.0	16.8	17.9	15.5	15.3	11.6	10.7	10.4	10.9	11.2
H. h. benahoare	17.3	13.5	15.9	18.1	16.0	14.2	11.4	10.5	10.4	11.2	11.2
INTRA-GROUP	5.3	0.2	4.9	-	1.3	3.1	3.7	3.8	1.9	3.1	4.3

Appendix 1. — (Continued)

BETWEEN GROUPS	*denudatus*	*guayarmina*	*tasarticus*	*scopulus*	*nanus*	*laesicollis*	*datue*	*aridicola*	*gomerensis*	*hispidus*	*bobadillae*	*hierrensis*
H. guayarmina	12.5											
H. tasarticus	10.1	10.8										
H. scopulus	12.2	15.6	13.4									
H. nanus	10.7	12.5	9.7	14.6								
H. laesicollis	11.2	14.5	11.5	13.6	12.2							
H. daute	11.5	12.9	11.3	14.2	11.4	12.8						
H. aridicola	12.4	14.6	12.2	14.3	13.6	13.4	10.8					
H. gomerensis	11.6	13.4	11.1	12.7	13.6	12.9	14.3	15.0				
H. hispidus	12.6	15.3	10.8	15.8	11.9	13.5	11.8	13.7	12.4			
H. bobadillae	12.2	13.9	10.3	15.3	12.7	12.0	12.2	13.2	11.8	8.3		
H. h. hierrensis	11.0	12.8	11.3	14.1	11.2	11.0	12.9	14.4	7.7	11.4	12.6	
H. h. benahoare	11.7	14.1	11.7	12.7	14.0	11.3	13.6	14.8	7.8	11.8	12.9	3.5
INTRA-GROUP	1.8	0.7	2.6	1.8	-	3.4	2.1	4.4	1.9	4.8	2.5	2.2

Appendix 2.— Spanish keys of *Herpisticus*.

Apéndice 2.— Claves en español para la determinación de *Herpisticus*.

En estas claves las referencias a la pilosidad corresponden a machos. Si hay dudas sobre el sexo de un ejemplar, la ratio largo elitral /largo pronoto es < 3 en machos y > 3 en hembras (excepto en *H. denudatus* n. sp. ♀ = 2,9-3,0).

1 Élitros solo con pelos curvos o recurvados más cortos que la longitud de una uña tarsal; mechón apical ausente o apenas desarrollado. Maza antennal incluyendo el desmómero 7 oval-alargada y más ancha (L/A < 3). Tamaño < 13 mm. Canarias orientales 2

– Élitros con muchos o algunos pelos erectos o suberectos más largos que una uña tarsal mezclados o no con pelos menores, al menos en el tercio apical o justo junto al ápice; mechón apical usualmente presente; en caso contrario tamaño corporal > 13 mm. Maza antenal incluyendo el desmómero 7 más estrecha (L/A >3). Canarias centrales y occidentales 6

2 Protibias rectas y estrechas con el ángulo externo apical recto o ligeramente proyectado hacia afuera. Oniquio (sin uña) tan largo como el escapo. Fuerteventura (sur) ..... ***Herpisticus rectipes*** n. sp.

– Protibias arqueadas apicalmente hacia dentro, con el ángulo apical externo obtuso y romo, nunca proyectado hacia afuera. Oniquio (sin uña) más corto que el escapo 3

3 Pelos en la cara externa de las tibias y fémures muy pequeños, recurvados y apenas o nada solapados. Área lateral del rostro entre su margen dorsal y el margen superior de la escroba deprimida, formando un escalón; epifrons con una depresión longitudinal superficial a cada lado del sulco mediano. Fuerteventura (cumbres de Jandía) ..... ***Herpisticus jandiensis*** n. sp.

– Pelos en la cara externa de las tibias y fémures, curvados, más largos y sobresalientes, generalmente solapados. Área lateral del rostro entre su margen dorsal y el margen superior de la escroba lisa, no deprimida; epifrons plana o con marcada rugosidad longitudinal 4

4 Pelos elitrales curvados apuntando hacia atrás, más dispersos y apenas solapados longitudinalmente. Ojos más prominentes (convexidad 33-45%). Lanzarote ..... ***Herpisticus oculatus*** Woll. 1864

– Pelos elitrales recurvados (apuntando hacia abajo), más densos y solapándose claramente en sentido longitudinal. Ojos menos prominentes (convexidad < 33%) 5

5 Epifrons con rugosidad longitudinal. Escamas redondas y pequeñas separadas entre sí. Élitros con pelos recurvados más pequeños (aprox. mitad del tamaño de una uña) y unos pocos menos recurvados cerca del ápiice (N Lanzarote e islotes) ..... ***Herpisticus famarae*** n. sp.

– Epifrons sin rugosidad longitudinal. Escamas grandes, planas, poligonales y tangents (teselado compacto). Élitros con pelos en el ápice tan recurvados como en el disco. Fuerteventura 6

6 Flagelo antenal < 2× longitud del escapo. Márgenes dorsolaterales del rostro romos; ratio ancho rostral /distancia interocular <1,15. Fuerteventura (mayor parte de la isla) ..... ***Herpisticus calvus*** Woll. 1864

– Flagelo antennal > 2× longitud del escapo. Márgenes dorsolaterales del rostro bien canteados; ratio ancho rostral / distancia interocular > 1,15. Fuerteventura (macizo de Betancuria) ..... ***Herpisticus betancuriae*** n. sp.

7 Vive en Gran Canaria 8

– Vive en otras islas (Tenerife, La Gomera, La Palma o El Hierro) 18

8 Rostro más largo (L/A > 0,90), paralelo, con los márgenes laterales mejor canteados y los ángulos antero-laterales cuadrangulares 9

– Rostro más corto (L/A < 0,90), claramente convergente hacia delante, con los márgenes laterales poco canteados y los ángulos antero-laterales romos 12

9 Élitros provistos solo de pelos cortos recurvados (0,5× uña tarsal) y un pequeño mechón de pelos más largos en el épice. Gran Canaria (NW) ..... ***Herpisticus gigas*** n. sp.

– Élitros provistos de pelos más largos suberectos (≥ uña tarsal) sobresaliendo sobre la cobertura de pelos menores recurvados 10

Appendix 2. — (Continued)

10 Pronoto con lados curvados y la máxima anchura al medio, sin diente laterobasal acusado. Pelos largos de los élitros distribuidos en la mitad apical. Gran Canaria (La Isleta) ..... ***Herpisticus guayarmina*** n. sp.
– Pronoto con lados arqueados o subparalelos, con la máxima anchura antes de la mitad y marcado diente laterobasal. Pelos largos distribuidos por todo el élitro.....11

11 Pronoto con el dorso bastante plano con cuatro puntos discales (sin línea media deprimida), su base recta y sin dientes angulares laterales. Ratio ♀ longitud elitral /pronotal >3,1 Gran Canaria (cumbres)..... ..... ***Herpisticus guanarteme*** n. sp.
– Pronoto con el dorso bastante irregular (línea media deprimida) y sin puntos discales; su base algo emarginada en el tercio medio, con dientes laterobasales agudos. Ratio ♀ longitud elitral /pronotal <3,1. Gran Canaria (oeste)..... ..... ***Herpisticus denudatus*** n. sp.

12 Cabeza con algunos pelos erectos o suberectos sobresalientes (vista lateral). Tibias peludas (pelos más largos que el diámetro tibial) 13
– Cabeza solo con pelos deprimidos. Las tibias no particularmente peludas.....15

13 Pronoto con la pilosidad reducida y cuatro puntos discales foveolados. Pilosidad elitral escasa con pelos más cortos (longitud del pelo ≈ uña tarsal). Talla ♂ pequeña 7,7-8,1 mm. Gran Canaria (Punta de las Arenas) .... ***Herpisticus nanus*** n. sp.
– Pronoto con la pilosidad conspicua y los puntos discales superficiales o ausentes. Pilosidad elytral más densa y con pelos sedosos más largos (>2× uña tarsal), muchos de ellos irregularmente torcidos. Aspecto peludo. Talla ♂ 8,5-10,6 mm 14

14 Ojos menos prominentes (convexidad 22-25%). Pelos erectos del pronoto usualmente más cortos. Gran Canaria (al oeste del Barranco de Tirajana) ..... ***Herpisticus lanatus*** Wollaston, 1864
– Ojos más prominente (convexidad 26-28%). Pelos del pronoto usualmente más largos. Gran Canaria (al este del Barranco de Tirajana)..... ***Herpisticus subvestitus pseudolanatus*** n. ssp.

15 Elitros cubiertos con una pilosidad recurvada y uniforme y a lo sumo con unos cuantos pelos largos sobresalientes y aislados cerca del ápice. Gran Canaria (El Risco-Faneque) ..... ***Herpisticus scopulus*** n. sp.
– Elitros con pelos largos adicionales, al menos en el tercio apical 16

16 Pelos largos suberectos presentes en todo el élitro (más largos hacia la mitad apical). Metatibias usualmente con pequeños dentículos en su canto interno (Gran Canaria) .... ***Herpisticus subvestitus subvestitus*** Wollaston, 1864
– Pelos largos suberectos (apenas mayores que una uña tarsal) restringidos a la mitad apical del élitro. Metatibias usualmente sin dentículos en su canto interno 17

17 Ojos más prominentes (convexidad 28-30%). Interestrías elitrales planas. Cara externa de las protibias con pelos arqueados sobresalientes. Ápice del pene más curvado en vista lateral. Gran Canaria (este). .... ***Herpisticus subvestitus grancanariensis*** Palm, 1974
– Ojos menos prominentes (convexidad 18-21%). Interestrías elitrales algo subcarinadas, conspicuas. Cara externa de las protibias con pelos curvados menos sobresalientes. Ápice del pene menos curvado en vision lateral. Gran Canaria (oeste) ..... ***Herpisticus tasarticus*** n. sp.

18 Élitros cubiertos de pelos recurvados y/o curvados además de con pelos sedosos adicionales, largos y suberectos (tan largos o más que una uña) al menos en el tercio apical.....19
– Élitros cubiertos con pelos recurvados y curvados (no más largos que una uña) y a lo sumo unos pocos pelos más largos cerca del ápice (nunca en la mitad basal) o integrando el mechón apical 23

19 Pelos largos distribuidos por todo el élitro.....20
– Pelos largos restringidos a la mitad apical del élitro; si están presents también en la mitad apical, entonces inclinados y sin sobresalir 21

Appendix 2. — (Continued)

20 Presencia restrigida a la isla de Tenerife (sur y oeste)..... ***Herpisticus aridicola*** n. sp.
– Presencia restringida a la isla de La Gomera (NW)..... ***Herpisticus hispidus*** n. sp.

21 Rostro más largo (L/A 0,9), paralelo o ligeramente divergente hacia el ápice, con los márgenes laterales bien canteados. La Gomera (norte)..... ***Herpisticus gomerensis*** n. sp
– Rostro más corto (L/A 0,8), ligeramente convergente hacia el ápice, con los márgenes laterales no bien canteados 22

22 Declive lateral de los élitros en el tercio basal algo rectilíneo (sección en forma de tejado). Dentículos de las protibias más largos que el diámetro de una escama; metatibias con dentículos. Tenerife (NE)..... ..... ***Herpisticus laesicollis*** Germar, 1823
– Declive lateral de los élitros en el tercio basal uniformemente curvo. Dentículos de las protibias muy pequeños (menores que el diámetro de una escama elitral); metatibias sin dentículos. La Palma (norte)..... ..... ***Herpisticus hierrensis benahoare*** n. ssp.

23 Rostro más largo (L/A 0,9) y paralelo. La Gomera (sur) ..... ***Herpisticus bobadillae*** n. sp.
– Rostro más corto (L/A < 0,9) y ligeramente convergente hacia el ápice.....24

24 Flagelo antenal dos veces la longitud del escapo. Pelos de los élitros progresivamente menos recurvados y más largos desde la base hacia el ápice. Metatibias no crenuladas Tenerife (NW) ..... ***Herpisticus daute*** n. sp.
– Flagelo antennal más de dos veces la longitud del escapo (2,2×). Pelos recurvados en todo el élitro y unos pocos más largos y suberectos próximos al ápice. El Hierro and La Palma (sur) .... ***Herpisticus hierrensis hierrensis*** Palm, 1979

Appendix 3.— Additional figures.

Apéndice 3.— Figuras adicionales.

Fig. 52.— Spiculum relictum of male sternite VIII of *Herpisticus*: **A** = *H. oculatus* (L: Teguise), **B** = *H. famarae* **n. sp.** (L: Yé), **C** = *H. calvus* (F: Tarajalejo), **D** = *H. subvestitus subvestitus* (C: San Bartolomé), **E** = *H. subvestitus grancanariensis* (C: La Llongueras), **F** = *H. jandiensis* **n. sp.** (F: Bco. del Ciervo), **G** = *H. guayarmina* **n. sp.** (C: La Isleta), **H** = *H. tasarticus* **n. sp.** (C: Tocodomán), **I** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K** = *H. denudatus* **n. sp**. (C: Degollada Yegua), **L** = *H. scopulus* **n. sp.** (C: Andén Verde), **M =** *H. laesicollis* (T: San Andrés), **N** = *H. daute* **n. sp.** (T: La Orotava), **O** = *H. aridicola* **n. sp.** (T: Malpaís de Rasca), **P** = *H. hispidus* **n. sp.** (G: Imada), **Q** = *H. hierrensis hierrensis* (H: Valverde), and **R** = *H. bobadillae* **n. sp.** (G: San Sebastián).

Fig. 52.— Spiculum relictum del esternito VIII masculino de *Herpisticus*: **A** = *H. oculatus* (L: Teguise), **B** = *H. famarae* **n. sp.** (L: Yé), **C** = *H. calvus* (F: Tarajalejo), **D** = *H. subvestitus subvestitus* (C: San Bartolomé), **E** = *H. subvestitus grancanariensis* (C: La Llongueras), **F** = *H. jandiensis* **n. sp.** (F: Bco. del Ciervo), **G** = *H. guayarmina* **n. sp.** (C: La Isleta), **H** = *H. tasarticus* **n. sp.** (C: Tocodomán), **I** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K** = *H. denudatus* **n. sp**. (C: Degollada Yegua), **L** = *H. scopulus* **n. sp.** (C: Andén Verde), **M =** *H. laesicollis* (T: San Andrés), **N** = *H. daute* **n. sp.** (T: La Orotava), **O** = *H. aridicola* **n. sp.** (T: Malpaís de Rasca), **P** = *H. hispidus* **n. sp.** (G: Imada), **Q** = *H. hierrensis hierrensis* (H: Valverde), y **R** = *H. bobadillae* **n. sp.** (G: San Sebastián).

Fig. 53.— Median lobe of aedeagi of *Herpisticus* species: **A** = *H. oculatus* (L: Puerto del Carmen), **B** = *H. famarae* **n. sp.** (L: Yé), **C** = *H. calvus* (F: Barranco de La Torre), **D** = *H. betancuriae* **n. sp.** (F: Betancuaria), **E** = *H. jandiensis* **n. sp.** (F: Barranco del Ciervo), **F** = *H. rectipes* **n. sp**. (F: Itsmo de La Pared), **G** = *H. nanus* **n. sp.** (C: Punta de las Arenas), **H** = *H. lanatus* (C: Bco. Fataga), **I** = *H. subvestitus subvestitus* (C: San Bartolomé), **J** = *H. subvestitus pseudolanatus* **n. ssp.** (C: Arinaga), **K** = *H. subvestitus grancanariensis* (C: Tafira Baja), **L** = *H. guayarmina* **n. sp.** (C: La Isleta), and **M** = *H. tasarticus* **n. sp.** (C: Degollada de Tasarte).

Fig. 53.— Lóbulo medio del edeago de especies de *Herpisticus*: **A** = *H. oculatus* (L: Puerto del Carmen), **B** = *H. famarae* **n. sp.** (L: Yé), **C** = *H. calvus* (F: Barranco de La Torre), **D** = *H. betancuriae* **n. sp.** (F: Betancuaria), **E** = *H. jandiensis* **n. sp.** (F: Barranco del Ciervo), **F** = *H. rectipes* **n. sp**. (F: Itsmo de La Pared), **G** = *H. nanus* **n. sp.** (C: Punta de las Arenas), **H** = *H. lanatus* (C: Bco. Fataga), **I** = *H. subvestitus subvestitus* (C: San Bartolomé), **J** = *H. subvestitus pseudolanatus* **n. ssp.** (C: Arinaga), **K** = *H. subvestitus grancanariensis* (C: Tafira Baja), **L** = *H. guayarmina* **n. sp.** (C: La Isleta), y **M** = *H. tasarticus* **n. sp.** (C: Degollada de Tasarte).

Fig. 54.— Median lobe of aedeagi of *Herpisticus* species: **A** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **B** = *H. denudatus* **n. sp.** (C: Degollada de Yegua), **C** = *H. gigas* **n. sp.** (C: Lomo Betancor), **D** = *H- scopulus* **n. sp.** (C: Andén Verde), **E** = *H. laesicollis* (T: Los Rodeos), **F** = *H. daute* **n. sp**. (T: La Orotava), **G** = *H. aridicola* **n. sp.** (T: Barranco del Infierno), **H** = *H. gomerensis* **n. sp.** (G: Las Hayas), **I** = *H. hispidus* **n. sp.** (G: Imada), **J** = *H. bobadillae* **n. sp.** (G: Las Casetas), **K** = *H. hierrensis hierrensis* (H: Valverde), and **L** = *H. hierrensis benahoare* **n. ssp.** (P: Caldera de Taburiente).

Fig. 54.— Lóbulo medio del edeago de especies de *Herpisticus*: **A** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **B** = *H. denudatus* **n. sp.** (C: Degollada de Yegua), **C** = *H. gigas* **n. sp.** (C: Lomo Betancor), **D** = *H- scopulus* **n. sp.** (C: Andén Verde), **E** = *H. laesicollis* (T: Los Rodeos), **F** = *H. daute* **n. sp**. (T: La Orotava), **G** = *H. aridicola* **n. sp.** (T: Barranco del Infierno), **H** = *H. gomerensis* **n. sp.** (G: Las Hayas), **I** = *H. hispidus* **n. sp.** (G: Imada), **J** = *H. bobadillae* **n. sp.** (G: Las Casetas), **K** = *H. hierrensis hierrensis* (H: Valverde), y **L** = *H. hierrensis benahoare* **n. ssp.** (P: Caldera de Taburiente).

Fig. 55.— Everted endophalus of *Herpisticus* species: **A** = *H. calvus* (L: Teguise). **B** = *H. calvus* (F: Barranco de los Canarios), **C** = *H. lanatus* (C: Barranco de. Fataga), **D** = *H. subvestitus subvestitus* (C: San Bartolomé), E = *H. subvestitus pseudolanatus* **n. sp.** (C: Arinaga), **F** = *H. guayarmina* **n. sp.** (C: La Isleta), and **G** = *tasarticus* **n. sp.** (C: Degollada de Tasarte).

Fig. 55.— Endofalo evertido de especies de *Herpisticus*: **A** = *H. calvus* (L: Teguise). **B** = *H. calvus* (F: Barranco de los Canarios), **C** = *H. lanatus* (C: Barranco de. Fataga), **D** = *H. subvestitus subvestitus* (C: San Bartolomé), E = *H. subvestitus pseudolanatus* **n. sp.** (C: Arinaga), **F** = *H. guayarmina* **n. sp.** (C: La Isleta), y **G** = *tasarticus* **n. sp.** (C: Degollada de Tasarte).

Fig. 56.— Everted endophalus of *Herpisticus* species: **A** = *H. denudatus* **n. sp**. (C: Degollada de la Yegua), **B** = *H. guanarteme* **n. sp**. (C: Era de Constantino), **C** = *H. scopulus* **n. sp.** (C: Andén Verde), **D** = *H. laesicollis* (T: San Andrés), **E =** *H. aridicola* **n. sp.** (T: San Isidro), and **F** = *H. gomerensis* **n. sp.** (G: Alojera).

Fig. 56.— Endofalo evertido de especies de *Herpisticus*:: **A** = *H. denudatus* **n. sp**. (C: Degollada de la Yegua), **B** = *H. guanarteme* **n. sp**. (C: Era de Constantino), **C** = *H. scopulus* **n. sp.** (C: Andén Verde), **D** = *H. laesicollis* (T: San Andrés), **E =** *H. aridicola* **n. sp.** (T: San Isidro), y **F** = *H. gomerensis* **n. sp.** (G: Alojera).

Fig. 57.— Tegmen of *Herpisticus*: **A** = *H. oculatus* (L: Teguise), **B** = *H. calvus* (F: Jumillo), **C** = *H. hispidus* **n. sp.** (G: Degollada Hernia), **D** = *H. nanus* **n. sp.** (C: Punta de las Arenas, **E** = *H. subvestitus grancanariensis* (C: Montaña de Amagro **F** = *H. subvestitus subvestitus* (C: Cruz de Tejeda), **G** = *H. tasarticus* **n. sp.** (C: Degollada de Tasarte), **H** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **I** = *H. laesicollis* (T: Barranco de Tahodio), **J** = *H. bobadillae* n. sp. (G: Las Casetas), **K** = *H. gomerensis* **n. sp.** (G: Alojera), and **L** = *H. hierrensis hierrensis* (H: Valverde).

Fig. 57.— Tegmen de *Herpisticus*: **A** = *H. oculatus* (L: Teguise), **B** = *H. calvus* (F: Jumillo), **C** = *H. hispidus* **n. sp.** (G: Degollada Hernia), **D** = *H. nanus* **n. sp.** (C: Punta de las Arenas, **E** = *H. subvestitus grancanariensis* (C: Montaña de Amagro **F** = *H. subvestitus subvestitus* (C: Cruz de Tejeda), **G** = *H. tasarticus* **n. sp.** (C: Degollada de Tasarte), **H** = *H. guanarteme* **n. sp.** (C: Cruz de Tejeda), **I** = *H. laesicollis* (T: Barranco de Tahodio), **J** = *H. bobadillae* n. sp. (G: Las Casetas), **K** = *H. gomerensis* **n. sp.** (G: Alojera), y **L** = *H. hierrensis hierrensis* (H: Valverde).

Fig. 58.— Spiculum ventrale (Đ sternite VIII) of *Herpisticus*. **A** = *H. oculatus* (L: Teguise), **B** = *H. famarae* **n. sp**. (L: Ye), **C** = *H. calvus* (F: Fayagua), **D** = *H. betancuriae* **n. sp**. (F: Betancuria), **E** = *H. rectipes* **n. sp.** (F: Itsmo de la Pared), **F** = *H. lanatus* (C: El Tablero), **G** = *H. subvestitus subvestitus* (San Bartolomé), **H** = *H. denudatus* **n. sp.** (C: Degollada de la Yegua), **I** = *H. tasarticus* **n. sp.** (C: Tocodomán), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K**= *H. guanarteme* **n. sp**. (C: Era de Constantino), **L** = *H. daute* **n. sp.** (T: Buenavista), **M** = *H. hispidus* **n. sp.** (G: Ermita de las Nieves), **N** = *H. gomerensis* **n. sp.** (G: Arure), **K** = *H. bobadillae* **n. sp.** (G: Las Galanas), and **L** = *H. hierrensis benahoare* **n. ssp.** (P: Caldera de Taburiente).

Fig. 58.— Spiculum ventrale (Đ esternito VIII) de *Herpisticus*. **A** = *H. oculatus* (L: Teguise), **B** = *H. famarae* **n. sp**. (L: Ye), **C** = *H. calvus* (F: Fayagua), **D** = *H. betancuriae* **n. sp**. (F: Betancuria), **E** = *H. rectipes* **n. sp.** (F: Itsmo de la Pared), **F** = *H. lanatus* (C: El Tablero), **G** = *H. subvestitus subvestitus* (San Bartolomé), **H** = *H. denudatus* **n. sp.** (C: Degollada de la Yegua), **I** = *H. tasarticus* **n. sp.** (C: Tocodomán), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K**= *H. guanarteme* **n. sp**. (C: Era de Constantino), **L** = *H. daute* **n. sp.** (T: Buenavista), **M** = *H. hispidus* **n. sp.** (G: Ermita de las Nieves), **N** = *H. gomerensis* **n. sp.** (G: Arure), **K** = *H. bobadillae* **n. sp.** (G: Las Galanas), y **L** = *H. hierrensis benahoare* **n. ssp.** (P: Caldera de Taburiente).

Fig. 59.— Spermatheca of *Herpisticus*: **A** = *H. oculatus* (L: Cortijo de la Mareta), **B** = *H. calvus* (F: Barranco de La Torre), **C** = *H. jandiensis* **n. sp.** (F: Barranco de la Cierva), **D** = *H. lanatus* (C: El Tablero), **E** = *H. subvestitus subvestitus* (C: El Sequero), **F** = *H. subvestitus grancanariensis***.** (C: Lomo Betancor), **G** = *H. subvestitus pseudolanatus* **n. sp** (C: Arinaga), **H** = *H. guanarteme* **n. sp**. (C: Era de Constantino), **I**= *H. denudatus* **n. sp.** (C: Degollada de la Yegua), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K =** *H. guayarmina* **n. sp.** (C: La Isleta), **L** = *H. tasarticus* **n. sp.** (C: Tasarte), **M** = *H. scopulus* **n. sp.** (C: Andén Verde), **N** = *H. nanus* **n. sp.** (C: Punta de las Arenas), **O** = *H. laesicollis* **n. sp.** (T: Tacoronte), **P** = *H. daute* **n. sp.** (T: Teno Alto), Q = *H. aridicola* **n. sp.** (T: Guía de Isora), **R** = *H. gomerensis* **n. sp.** (G: Arure), **S** = *H. bobadillae* **n. sp.** (G: Las Galanas), **T** = *H. hispidus* **n. sp.** (G: Ermita Las Nieves), and **V =** *H. hierrensis hierrensis* (H: La Caleta).

Fig. 59.— Espermateca de *Herpisticus*: **A** = *H. oculatus* (L: Cortijo de la Mareta), **B** = *H. calvus* (F: Barranco de La Torre), **C** = *H. jandiensis* **n. sp.** (F: Barranco de la Cierva), **D** = *H. lanatus* (C: El Tablero), **E** = *H. subvestitus subvestitus* (C: El Sequero), **F** = *H. subvestitus grancanariensis***.** (C: Lomo Betancor), **G** = *H. subvestitus pseudolanatus* **n. sp** (C: Arinaga), **H** = *H. guanarteme* **n. sp**. (C: Era de Constantino), **I**= *H. denudatus* **n. sp.** (C: Degollada de la Yegua), **J** = *H. gigas* **n. sp.** (C: Lomo Betancor), **K =** *H. guayarmina* **n. sp.** (C: La Isleta), **L** = *H. tasarticus* **n. sp.** (C: Tasarte), **M** = *H. scopulus* **n. sp.** (C: Andén Verde), **N** = *H. nanus* **n. sp.** (C: Punta de las Arenas), **O** = *H. laesicollis* **n. sp.** (T: Tacoronte), **P** = *H. daute* **n. sp.** (T: Teno Alto), Q = *H. aridicola* **n. sp.** (T: Guía de Isora), **R** = *H. gomerensis* **n. sp.** (G: Arure), **S** = *H. bobadillae* **n. sp.** (G: Las Galanas), **T** = *H. hispidus* **n. sp.** (G: Ermita Las Nieves), y **V =** *H. hierrensis hierrensis* (H: La Caleta).

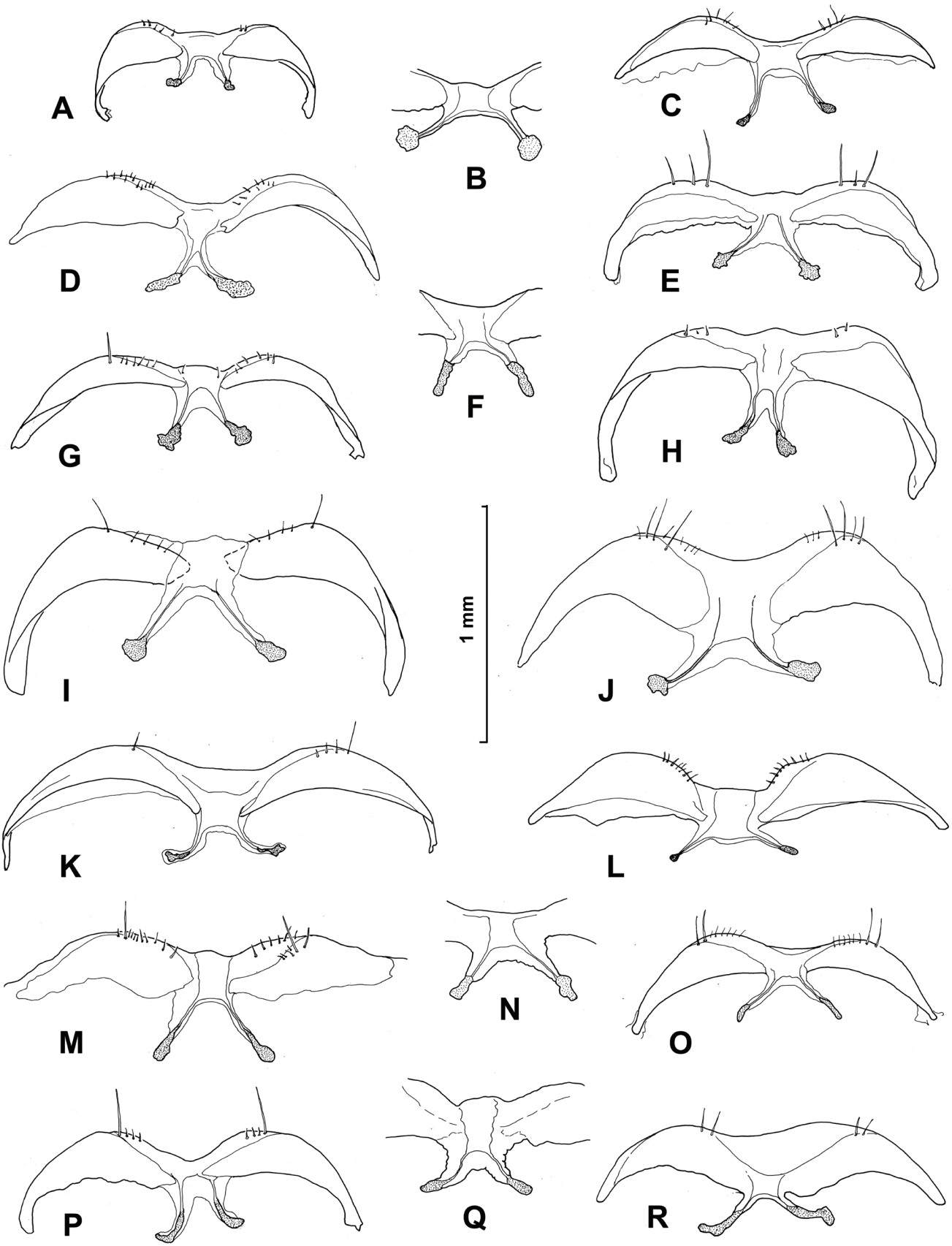


Fig. 52.— (see legend at page 83).

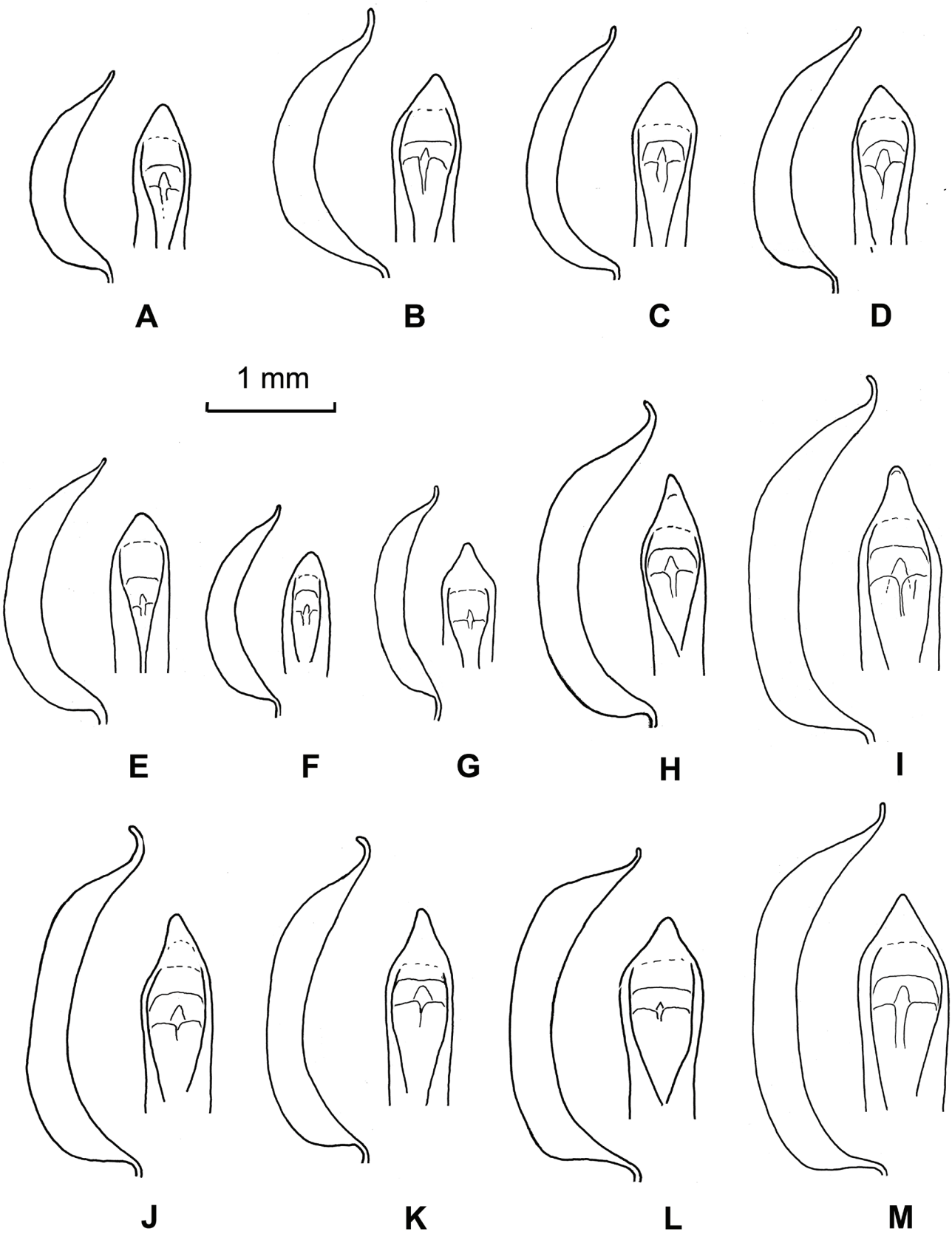


Fig. 53.— (see legend at page 83).

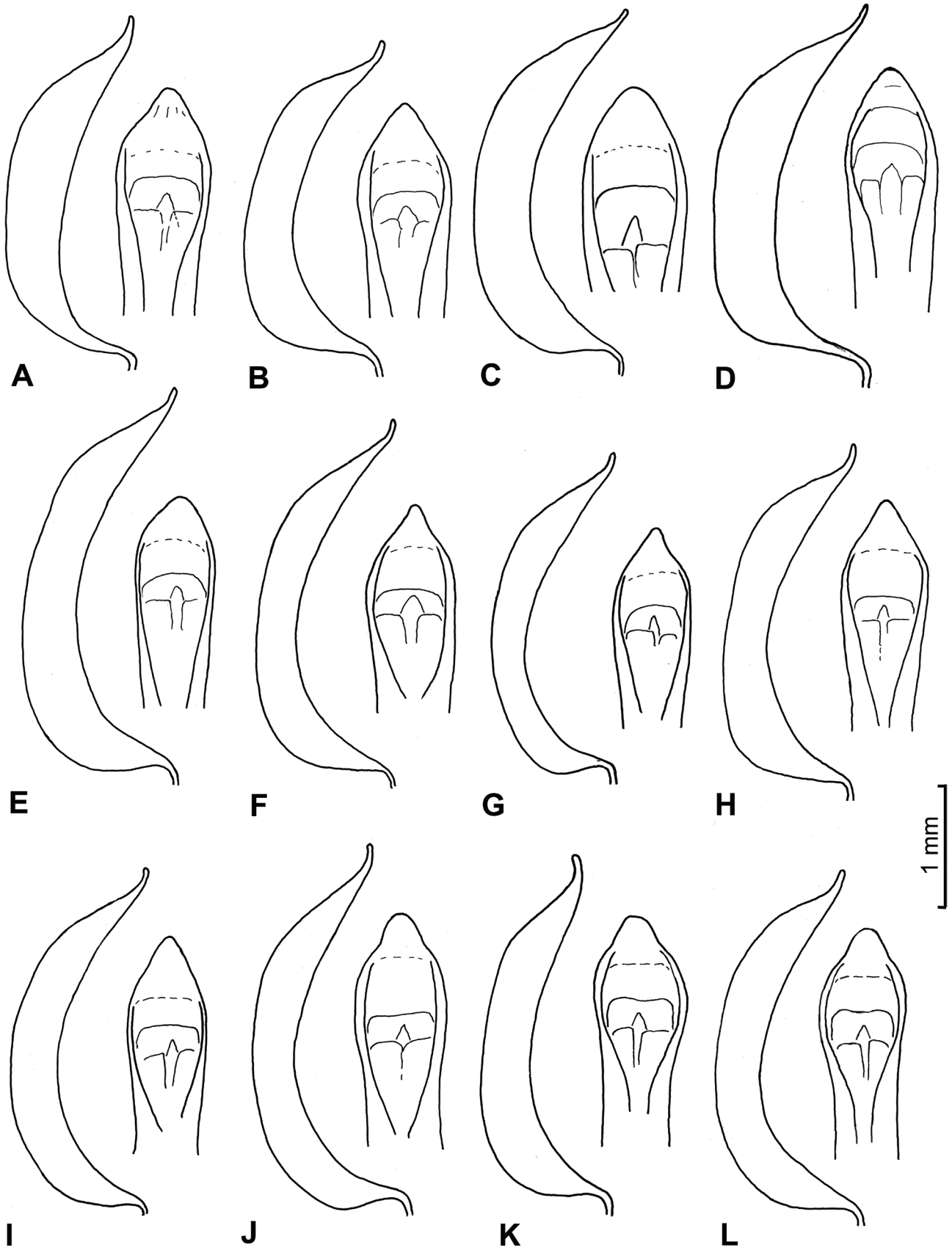


Fig. 54.— (see legend at page 83).

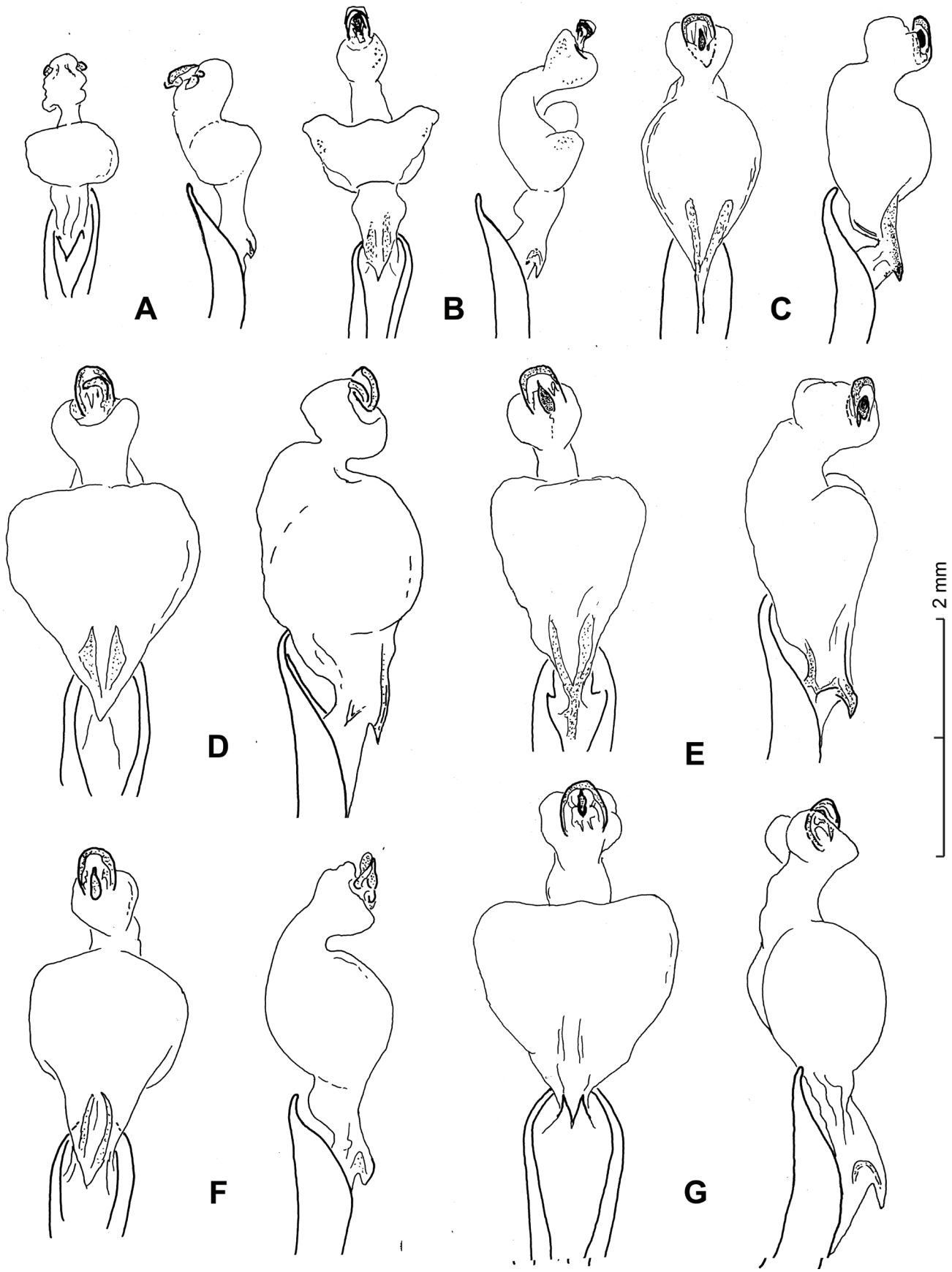


Fig. 55.— (see legend at page 83).

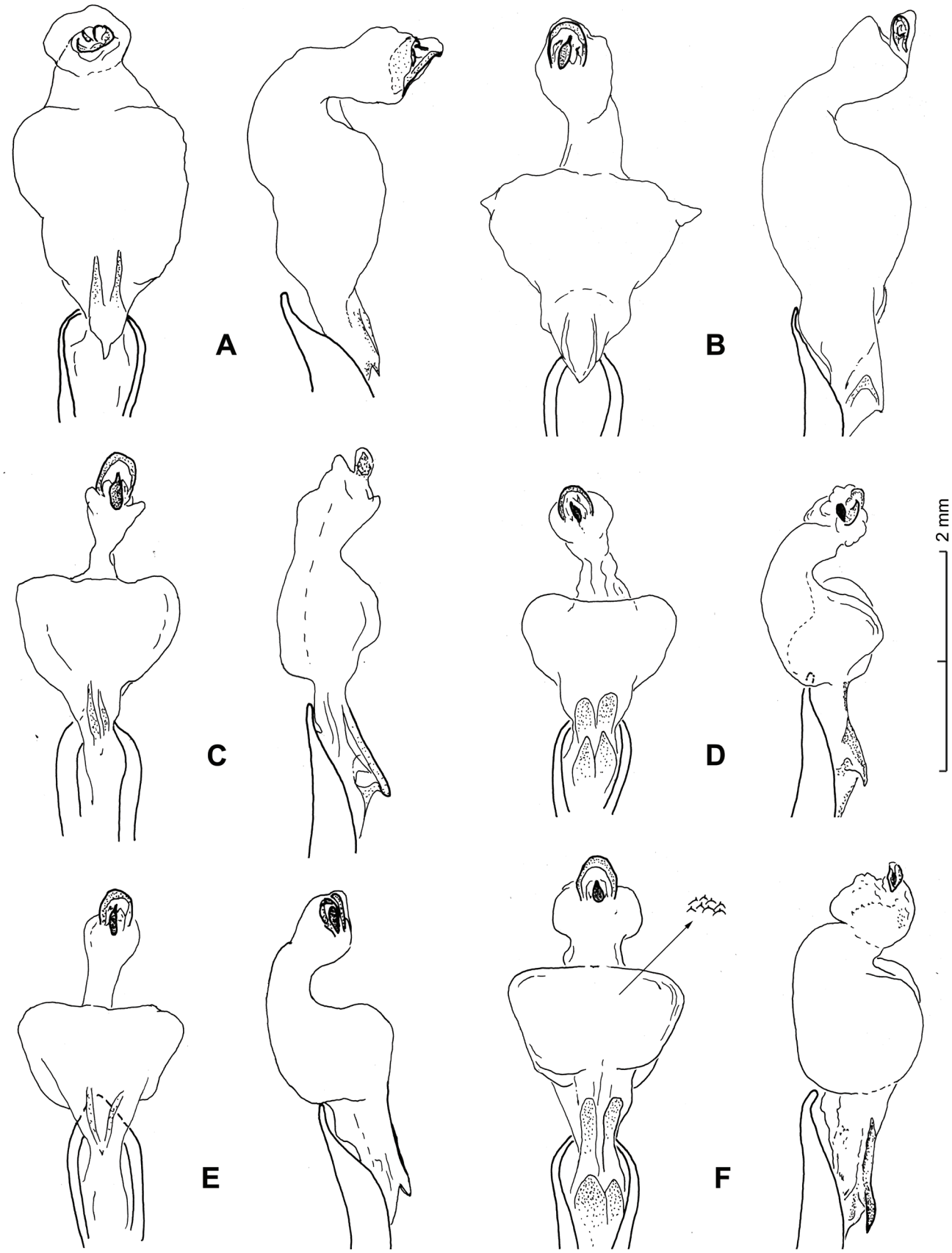
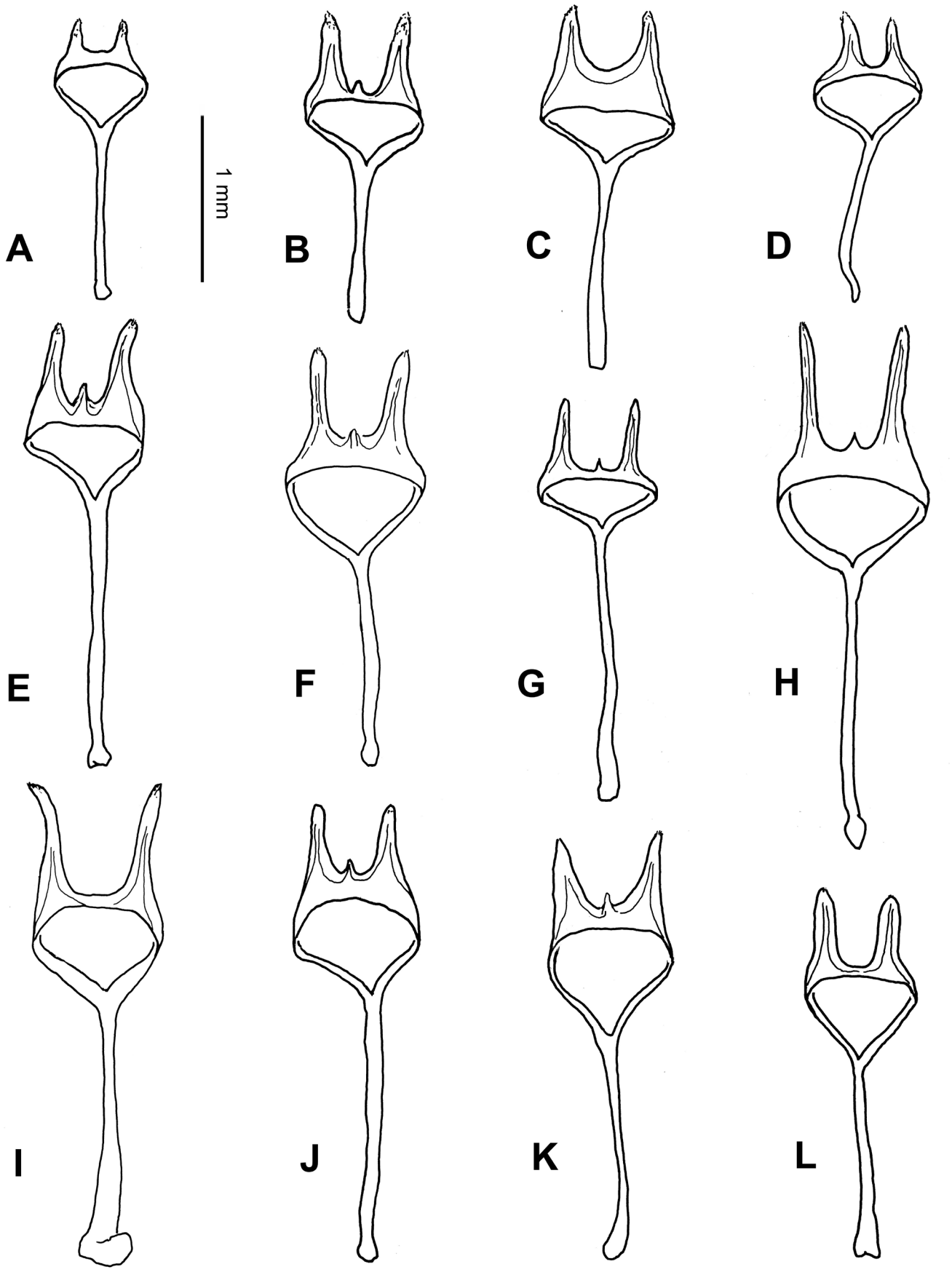


Fig. 56.— (see legend at page 83).



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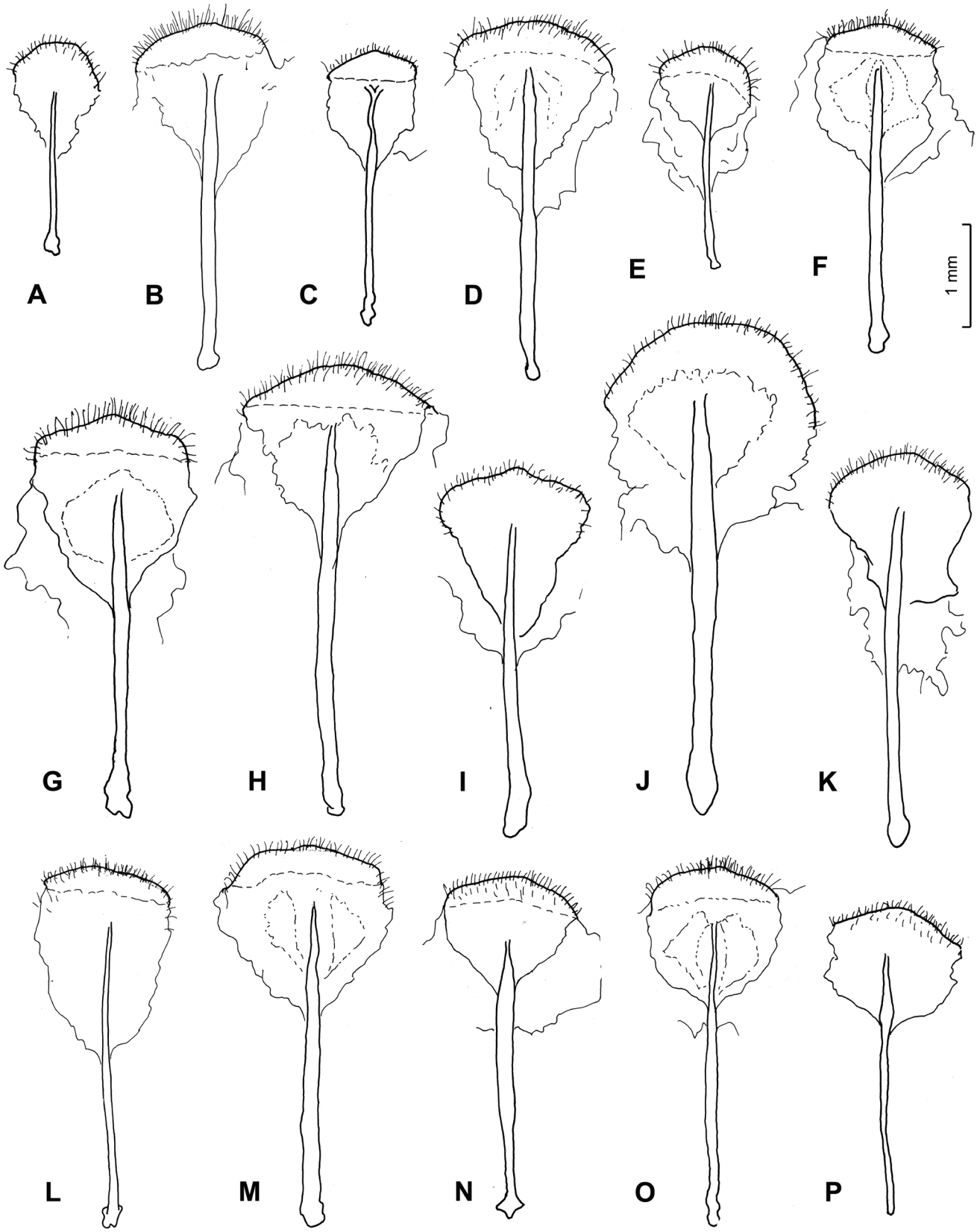

Fig. 58.— (see legend at page 84).

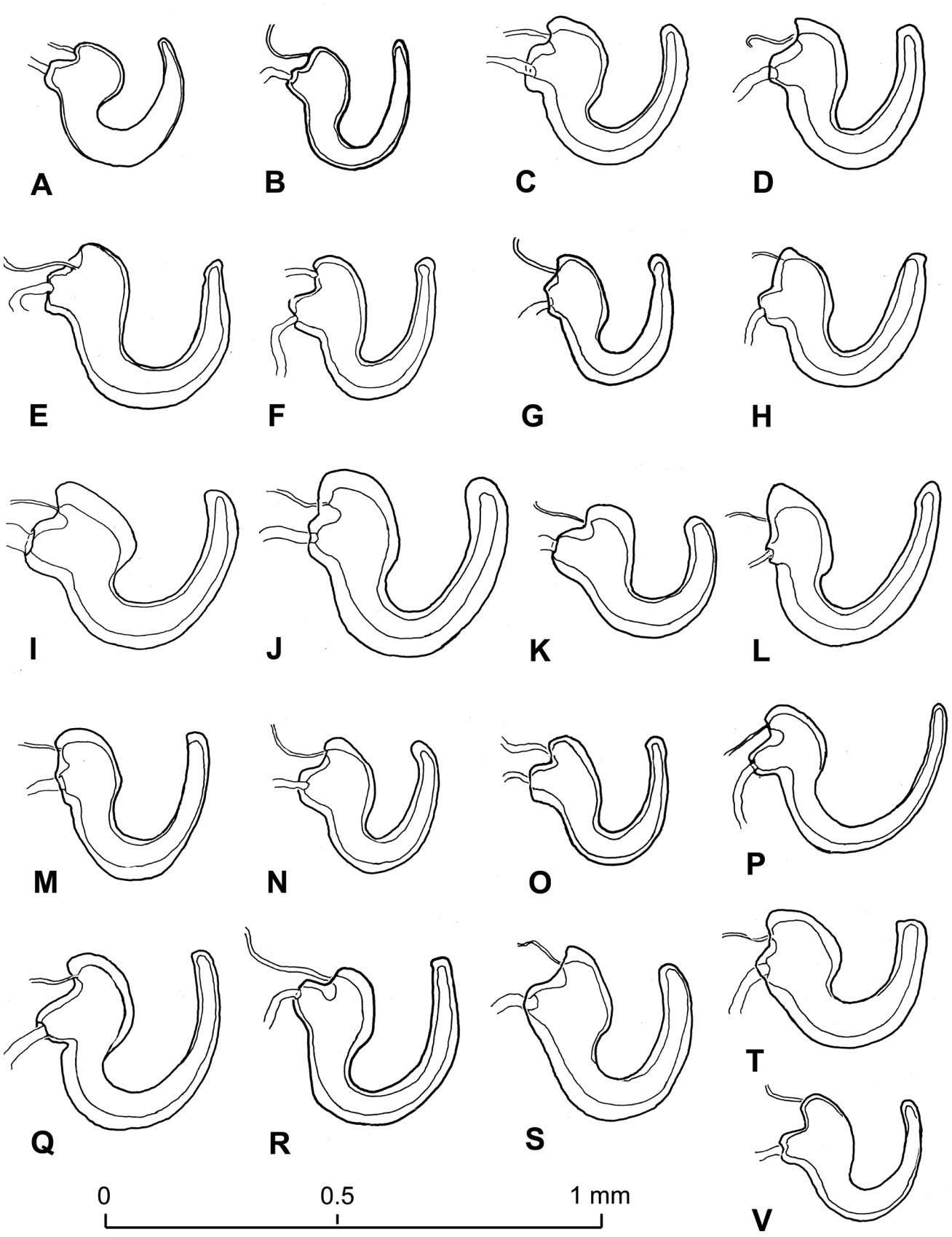

Fig. 59.— (see legend at page 84).