

New or poorly known Anobiidae from the Canarian Islands, with keys (Col.)

BY

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Ten years ago, in an article on the Canarian Anobiidae, ESPANOL (1964b) observed that the past century addition to our knowledge in the field was disappointingly scanty in comparison with that of several other coleopterous groups. This was all the more regrettable as some members of the family are known to be of commercial interest because of their noxious feeding habits.

There is no reason, of course, to believe that the Anobiids would have been intentionally neglected by the numerous later collectors who have worked in the islands. According to WOLLASTON (1865) nearly half of the twenty Canarian species found by him and his collaborators were known in one or at most two examples only. Certainly it is the experience of coleopterists in general that Anobiids are normally not very commonly or abundantly captured by sweeping or knocking the vegetation, or sieving debris, let alone turning stones etc. As a rule the outcome of such frequently used methods is restricted to occasional specimens.

Evidently it was the focusing of the collecting work on larval habitats rather than on adults that eventually led to discovery of the majority of the taxa dealt with in the following. The material was usually collected as larvae, occasionally as pupae, brought home in the wood where they lived, and, more or less successfully, bred at room temperature. In some cases the development was stopped by parasitic Hymenoptera, occasionally probably also by predatory coleopters.

The eleven *Anobiidae* described below, nine of which as new species or subspecies are classified among seven genera. Three of the latter (*Xestobium*, *Megorama*, and *Melholcus*) seem not to have been recorded before from any of the Macaronesian archipelagos. All taxa come from the arid zone of the central or eastern islands of the Canarian group. Usually they were found more or less close to the sea level or at most at about 300 m.

The method also resulted in some information on the biology, in the first place the host plants about which none of the better known taxa proved to be very particular.

HEDOBINAE

Ciada spagnoli n. sp. (figs. 5,6).

DESCRIPTION. Male. Body moderately elongate, 3.9 mm. in length (head excluded), 1.6 mm. in width, light reddish brown; head a little darker. Puncturation of the fore-body fine, dense and somewhat granulate,

that of the elytra stronger and deeper. Pubescence simple, greyish, short, adpressed, not obscuring the surface but somewhat denser on the elytral costae.

Head a trifle wider than the prothorax. Eyes large and protruding, separated by 1.5 times their longitudinal diameter. Antennae (fig. 5) sub-filiform, 2-3 as long as the body; segments 3-10 nearly equal, about 1.8 times as long as wide.

Prothorax slightly transverse, nearly parallel-sided, distinctly but rather faintly gibbose; basal impressions very weak.

Elytra about parallel-sided, 1.85 times as long (from the scutellar apex) as wide, 3.1 times as long as and 1.55 times as wide as the prothorax; costae not very conspicuous.

Legs rather long and slender; tarsi as long as the tibiae; metatarsi as long as the prothorax; tarsal segment 1 about 1.7 times as long as 2, 4 hardly wider than 1 (fig. 6).

Aedeagus with no particular features; penis about as long as prothorax. Female unknown.

MATERIAL. Fuerteventura, Jandía, Gran Valle, knocked from a dead branch of *Launaea spinosa*, 2.vii.1971, N.º 3067 (ISRAELSON), 1 ♂ (holotype), in my collection.

COMMENTS. I have pleasure in dedicating this species to Dr. F. ESPAÑOL.

The comparatively narrow prothorax, the sub-filiform antennae, and the simple pubescence indicate the very close affinity of *espagnoli* to *fernandezi* Español (1968a). From Mr. FERNANDEZ I have got a series of the latter originating from the type locality. Males of *fernandezi* differ from *espagnoli* in the following respects.

Body larger; eyes larger and more protruding (separation 1.2-1.25 times as long as the diameter); antennae longer, 3-4 as long as the body; antennal segments 3-10 more than twice as long as wide; prothorax with distinctly convex sides; pronotal elevation far more distinct and conspicuously compressed from the sides; basal impressions therefore rather strong; tarsal segment 1 nearly twice as long as 2, 4 distinctly wider than 1 (fig. 6); penis relatively shorter; pubescence more conspicuous, particularly on the elytral costae and the scutellum, the surface of the latter being completely obscured.

***Clada denticornis insularis* n. ssp. (figs. 1-4).**

DESCRIPTION. Male. Body moderately elongate, 5.1-7.0 mm. in length (head excluded), 2.0-2.6 mm. in width, reddish brown; head and pronotum often a shade darker. Puncturation of the fore-body fine, dense, granulate, that of elytra with larger and more deeply impressed punctures. Pubescence distinctly dual, with shorter decumbent and longer suberect to erect hairs, yellowish, rather dense but hardly obscuring the surface except on the elytral costae and the scutellum.

Head distinctly narrower than the prothorax (index 0.8-0.9). Eyes moderately large and protruding, separated by about 1.9 times their longitudinal diameter. Antennae (fig. 1) a trifle more than half as long as the body; segments 3-10 subtriangular, 1.3-1.5 times as long as wide; terminal segment about 3 times as long as wide.

Prothorax transverse (index about 1.2) with the sides strongly convex

in the middle, moderately gibbose; elevation not very compressed; basal impressions very weak.

Elytra parallel-sided, about 2.2-3 as long from the scutellar apex, and 1.1-1.4 as wide as prothorax; costae very fine, somewhat more densely pubescent than the intercostae but resulting stripes not very pronounced.

Legs moderately elongate; tarsi shorter than the tibiae; metatarsi shorter than the prothorax (index 0.85); tarsal segment 1 about 1.7 times as long as 2, 4 transverse (fig. 3).

Aedeagus (fig. 4) normal.

Female. Averagely larger, 6.2-8.2 mm. in length, 2.7-3.4 mm. in width. Eyes a little smaller, separated by 2.25-2.5 times their diameter. Antennae (fig. 2) shorter, about 0.4 times as long as the body; terminal segment not quite twice as long as wide. Legs shorter, metatarsi only about 0.7 times as long as the prothorax.

MATERIAL. Lanzarote, Famara Playa, reared from dead branches of *Zygophyllum fontanesii*, collected 2.i.1972, N.º 3989 (ISRAELSON), 1 ♂ (holotype) plus 16 ex. in my collection.

Fuerteventura, Jandía, Gran Valle, collected as a pupa in dead wood of *Lycium europaeum* 17.vi.1973, 1 ♀ (ISRAELSON).

Grand Canary, Maspalomas, in *Tamarix* sp., reared from a dead branch collected 4.iv.1973 (LEHLER), 1 ♂, 1973 (PALM), 1 ♀; in dead wood, 22.vi.1973 (ISRAELSON), 1 ♀.

BIOLOGY. As appears from the above this is a fairly polyphagous species.

The cocoons made for the pupae are quite similar to those described by ESPAÑOL (l.c.) for *fernandesi*.

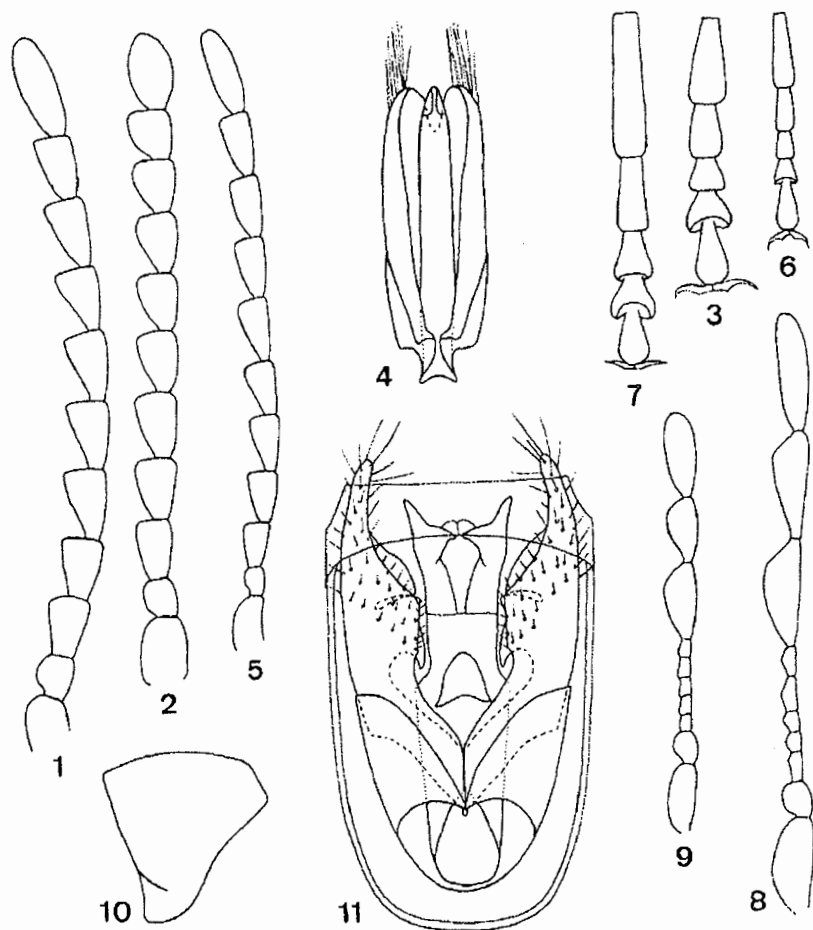
Reared adults appeared in all months from February to August. Other coleopters to emerge from the respective branches were: from *Zygophyllum Stagesius h. orientalis* n.ssp. (see below), *Sphaericus gibbicollis* Woll., *Amaurorhinus clermonti* Desbr., *Pentatemnus arenarius* Woll., and an indetermined weevil; from *Tamarix Metholeus gracilipes* n.sp. (see below).

The Lanzarote material was heavily infested by an undescribed species of *Scleroderma* (Hym., Bethyridae) (Mr. HEDQVIST det.).

COMMENT. I have sent a male specimen to Dr. ESPAÑOL, who considers *Clada d. insularis* to be a race of the rather polymorphous and widely distributed African *denticornis* complex (priv. comm.). It comes very close to *d. maroccana* Español (l.c., p. 7) but the male antennae are less strongly serrate than in the latter and in this respect *d. insularis* seems to be intermediate between the lastnamed form and *latipennis* Pic. The body length as recorded by ESPAÑOL (1968a p. 7 and 1969, p. 4, respectively) is 4-6 in *latipennis* and 4-7 mm. in *denticornis* and so it seems that *d. insularis* may be somewhat larger on an average than both.

Key to the Canarian *Clada* (♂♂).

- 1(4). Pubescence simple, of depressed hairs only. Head a little wider than the prothorax. Antennae sub-filiform (fig. 5).
- 2(3). Antennae more elongate, about 3/4 as long as the body; segments 3 - 10 more than twice as long as wide. Tarsal segment 4 distinctly wider than 1 (fig. 6). Larger species, 5 - 6 mm in length. *fernandesi* Español (Tenerife)
- 3(2). Antennae less elongate, about 2/3 as long as the body; segments 3 - 10 less than twice as long as wide. Tarsal segment 4 hardly wider than 1 (fig. 7) *espanoli* n.sp. (Fuerteventura)
- 4(1). Pubescence, particularly that of the elytra, distinctly dual, of shorter decumbent and longer, more or less erect hairs. Head not reaching the width of the prothorax. Antennae serrate (fig. 1) *denticornis insularis* n.sp. (Grand Canary, Fuerteventura, Lanzarote)



Figs. 1-11. — 1-4, *Clada denticornis insularis* n.ssp.; 5, 6, *Clada spagnali* n.s.p.; 7, *Clada iernandezii* Español; 8-11, *Gastrallus lyctoides* (Vollaston), Grand Canary.
 — 1, 5, 8, ♂ antenna; 2, 9, ♀ antenna; 3, 6, 7, ♂ mesotarsus; 4, aedeagus; 11, genital segment with aedeagus; 10, prothorax, lateral view.
 — Magnification (diameters): 1-3, 5-7, 30X; 4, 10, 40X; 8, 9, 11, 80X

ERNOBIINAE

Xestobium filicorne n.sp. (figs. 12-17).

DESCRIPTION. Male. Body elongate, sub-cylindrical, 2.6-6.0 mm. in length (head excluded), 1.05-2.4 mm. in width, dark brown, shining, with an indistinct metallic tinge; head black; appendages, lateral borders of prothorax and sometimes elytra testaceous. Puncturation moderately dense, irregular and comparatively uniform; microreticulation fine, in-

distinct on the elytra. Pubescence not very dense, yellowish, conspicuously dual, with shorter, more decumbent, and rather long, bristling hairs.

Clypeal suture sharp and strongly impressed, slightly bisinuate. Frons anteriorly with a nearly unpunctured and glabrous transverse elevation, posteriorly flat and rather densely puncturate and pilose. Mandibles near the base with a blunt tooth the upper side. Eyes comparatively small but protruding, separated by about 3 times their longitudinal diameter. Terminal segment of palpi sub-fusiform, about 4.5 times as long as wide, somewhat asymmetric with truncate apex. Antennae filiform (fig. 12) with no distinct club, half as long as the body; segments 9-11 together about as long as 5-8 together.

Prothorax transverse (index 1.3), subrectangular, about 1.3 times as wide as the head; fore angles slightly obtuse, hind angles a little more strongly so; lateral sides broadly explanate and a little reflexed. Puncturation distinct and posteriorly rather dense. Pronotal pubescence complex: hairs radiating from a centre at each side of the fore and hind margins but laterally and near the hind angles pointing inward and along the anterior half of the median line forward.

Elytra a little narrower than and (from the scutellar apex) about 2.3 times as long as the prothorax and about 1.9 times as long as wide; disc slightly arched transversally, lateral sides more strongly so and margins not visible in dorsal view except apically being explanate and reborded there; between the well developed shoulder-knob and the scutellum with a small elevation; at the apical declivity with a shallow depression along the sutural region; unstriated, irregularly and not very strongly puncturate, anteriorly somewhat asperate, posteriorly less densely and more finely. Subdepressed hairs near the suture very short, on the disc mostly pointing backward and at the same time somewhat outward, at the apical declivity more or less strictly outward.

Legs slender. Protibiae somewhat S-shaped; inner apical spur strongly curved and more than half as long as the first protarsal segment. Meso- and metatarsi (fig. 14) nearly as long as the tibiae (index 0.9); segment 1 nearly as long as 2 and 3 combined; first tarsal segments compressed and narrow in dorso-ventral view.

Prosternum half as long before coxae as the coxal diameter. Procoxae, rather prominent, contiguous; prosternal process descending backward, laminate but its posteriormost portion a little widened transversally and with a median excision provided with short hairs. Mesocoxae narrowly separated by a laminate intercoxal process. Metacoxal plates (fig. 15) strongly dilated inward, with a minute tooth. Metasternum in the posterior half with a fine median sulcus, anteriorly replaced by a weak carina.

Abdominal sternites not very different in length; fifth sternite on each side behind the middle with a small protuberance with a tuft of erect hairs. First suture curved backward. Genital segment (figs. 16, 17) subtriangular, extremely strongly narrowed (Y-shaped) anteriorly.

Aedeagus (figs. 16, 17) small, about half as long as the prothorax; penis slightly asymmetrical, with a flat lateral spine on each side before the apex; parameres simple, distally with short sensorial hairs.

Female 2.7 - 5.2 mm. in length by 1.15 - 2.15 mm. in width. Mandibles not toothed at the upper side. Eyes hardly smaller but at little less protruding. Terminal palpal segments about 3.5 times as long as wide. Antennae (fig. 13) shorter, 0.4 times as long as the body. Prothorax subtrapezoidal, with its greatest width close to the base, about 1.5 times as

wide as the head. Elytra a little wider than and about 2.7 times as long as the prothorax.

MATERIAL. Fuerteventura, Jandía, Gran Valle, reared from dead branches of *Launaea spinosa*, collected 2. vii. 1971, No. 3994 (ISRAELSON), 1 ♂ (holotype) and 1 ♀ in my collection; near Morro Jable, reared from dead branches of *Suaeda vermiculata* (det. SUNDING), *Arthrocnemum fruticosum* (det. SUNDING), and *Zygophyllum fontanesii*, all collected 16. vi. 1973 and 21 or 24. ii. 1974 (ISRAELSON), 42 ex.

Grand Canary, Maspalomas, in dead fruit stalks of *Phoenix canariensis*, 26. iii. 1973 (PALM), 17 ex.

BIOLOGY. Developing in various host plants (see above).

The specimens from Gran Valle appeared in May (the following year), those from Morro Jable (1973) in January - April. The material of 1974 contained larvae and pupae. So did Palm's material (pers. comm.). The data available thus indicate that adults normally emerge in spring.

Other coleopters found to have developed in the respective branches are: *Laemophloeus clavicollis* Woll., *Nicobium villosum* (Br.), *Lasioderma latitans* (Woll.), *L. minutum* Har. Lindb., and *Sphaericus gibbicollis* Woll., all in *Launaea*, as well as *Leipaspis caulicola* Woll. (surely preying upon *Xestobium*) in *Suaeda* and *Arthrocnemum*.

COMMENT. Habitually *filicorne* reminds of *X. plumbeum* (Illiger) but the latter differs from the former in several respects, the following among others. Body not distinctly microreticulate. Clypeal suture not strongly impressed. Frons simply punctured. Palpi short; terminal segment only twice as long as wide. Antennae distinctly clubbed; segments 9-11 combined about as long as the remainder. Pattern of pronotal pubescence somewhat different. Apical portion of the elytra not distinctly explanate. Legs stronger and tarsi shorter; first metatarsal segment as long as the three following together. Tibial spurs very short. Procoxae distinctly separated by the prosternal process (not contiguous), not very protruding. Metacoxal plates more abruptly dilated inward. Protuberances of fifth abdominal sternite hardly distinct (but tufts of erect hairs present). Aedeagus of different shape (see ESPAÑOL, 1963a, fig. 9). Basal tooth of mandibles in the male sex absent. Prothorax about equally shaped in both sexes.

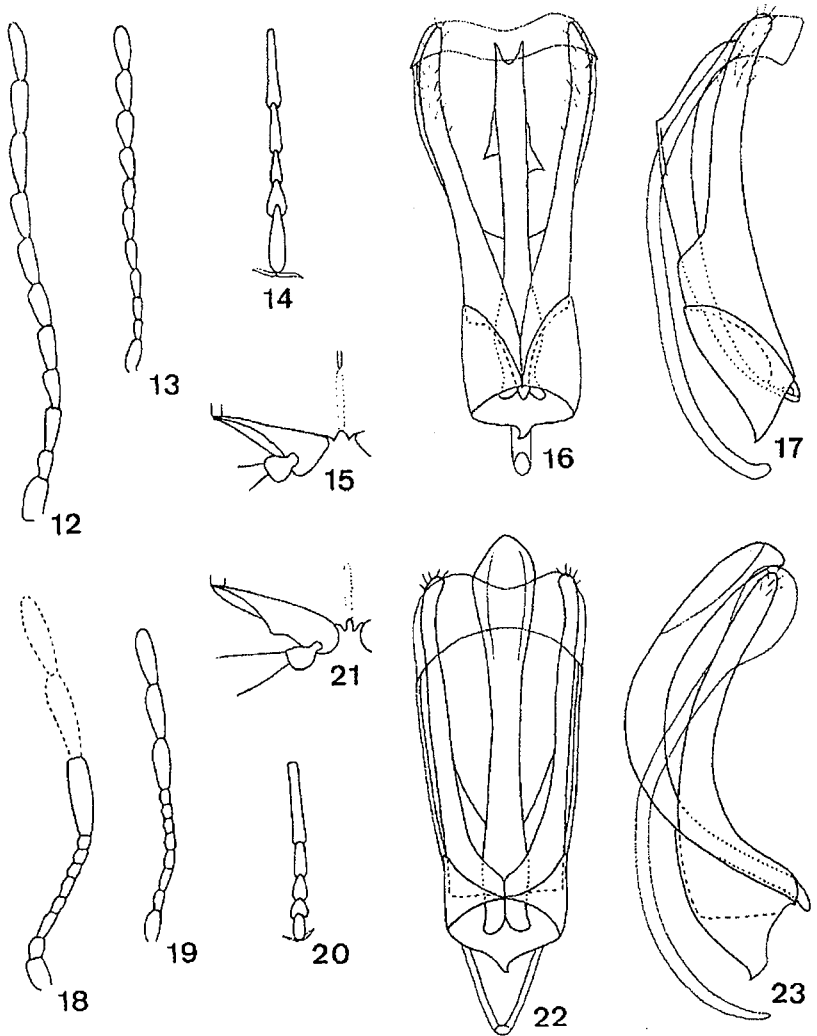
The American *X. marginicollis* (Leconte) — which I have not examined — seems to be another relative of *filicorne* (see also WHIRRE, 1969, p. 255). According to FALL (1905, p. 150, 151) the former species seems to have a similar clypeal suture as the latter. Also the bituberculate last sternite (FALL, l.c., p. 141) is a feature in common to both species.

Xestobium impressum (Wollaston) n. comb. (figs. 18-23).

Anobium impressum Wollaston, 1865, App., p. 35.

Ermobius impressus (Wollaston): Español, 1966, p. 226.

DESCRIPTION. Male. Body oblong, sub-parallel, moderately convex, 3.1 mm. in length, head excluded, 1.25 mm. in width, reddish brown with head darker, not very shining, not marmorate nor metallic. Punctuation fine, partly indistinct, more or less dense, partly granulate; interstices microreticulate. Pubescence unicolorous, yellowish, not very conspicuously diversified into shorter, recumbent and longer, slightly more upright hairs, moderately dense.



Figs. 12-23. — 12-17, *Xestobium filicorne* n.sp.; 18-23, *Xestobium impressum* (Wollaston). — 12, 18, ♂ antenna; 13, 19, ♀ antenna; 14, 20, ♂ metatarsus; 15, 21, metacoxa; 16, 22, genital segment with aedeagus, ventral view; 17, 23, ditto, lateral view.
— Magnification (diameters): 12, 13, 15, 21, 30X; 14, 18-20, 40X; 16, 17, 22, 23, 60X.

Clypeal suture arcuate and very lightly impressed. Frons simple. Eyes rather small but protruding, separated by 1.9 longitudinal diameters. Terminal segment of labial palpi a little more than twice as long as wide, with its greatest width in the proximal half, somewhat asymmetrically narrowing towards the broadly rounded apex. Antennae (fig. 18) probably

somewhat less than half as long as the body club-shaped, stem slightly serrate from segment 3, segment 9 nearly as long as 4-8 combined and broader than the preceding.

Prothorax about 1.3 times as wide as the head and 1.35 times as wide as long, with its greatest width a little behind the middle; sides rather evenly arcuate; lateral margin rather broadly flattened and a little reflexed; corners well-marked, about equally obtuse-angled and a little rounded (dorsal view); front and hind margin arcuate, the latter somewhat bisinuate; punctures rather weak with microreticulate interstices; pubescens complicated; hairs mainly radiating from two centres on each side, one at the fore margin near the corner and the second at the hind margin about half-way between the corner and the middle.

Elytra 2.6 times as long as (from scutellar apex) and 1.1 times as wide as the prothorax, about twice as long as wide; margins very delicately reborded, not visible from above, except apically. Shoulder-knob well developed; disc behind the shoulders with an oblique depression toward the suture; apical declivity with a slight depression along the suture. Puncture series not visible; puncturation irregular, anteriorly very dense and granulate, posteriorly less dense and more indistinctly granulate. Hairs mainly pointing backward but near the suture at the posterior declivity outward.

Legs slender; tibial spurs very short and weak; meso- and metatarsi (fig. 20) a little shorter than the tibiae (index 0.85). First tarsal segments compressed from the sides; segment 1 prolonged, that of the protarsi as long as, that of meso- and metatarsi distinctly longer than 2-4 combined.

Prosternum short before the coxae, about 1/4 as long as the latter. Procaxae moderately prominent, contiguous; prosternal process descending and laminate backward but a little dilated posteriorly and with a median impression provided with hairs. Mesocoxae very narrowly separated by an intercoxal process. Metasternum with a median furrow posteriorly; surface indistinctly microreticulate, granulate, more densely and coarsely so toward the lateral sides. Metacoxal plates (fig. 21) strongly dilated inward, with a distinct tooth. Abdominal sternites not very different in length; first suture a little curved backward. Genital segment subtriangular (figs. 22, 23).

Aedeagus (figs. 22, 23) as long as the prothorax. Penis dilated distally, hardly notably asymmetrical. Parameres simple with short sensorial hairs distally.

Female (holotype). Differing from the male in the following respects. Microsculpture somewhat weaker, often appearing puncturated rather than reticulate; surface therefore more shining. Eyes less protruding. Antennae (fig. 19) shorter, hardly 0.4 times as long as the body; segment 9 only as long as 6-8 combined. Prothorax with its greatest width a little in front of the hind corners and more strongly narrowing forward. Legs less prolonged; segment 1 of meso- and metatarsi not quite as long as 2-4 together.

Wollaston noticed the presence of a short transverse impression on pronotum in the centre behind. This impression is not very marked (perhaps an artifact).

MATERIAL. [Hierro, 1864 (Messrs. CROUCH)], 1 ♀ (holotype), in the Wollaston collection of the British Museum (Natural History). The purple ink-line across the base of the mount indicates the island. The other finding-data are from WOLLASTON, l.c.

Tenerife, Garachico, «8121» (R. STORÅ) 1 ♂ in the Zoological Museum of the University, Helsinki. The two outer segments of both antennae as well as most of the maxillary palpi missing.

COMMENT. In the usual keys to Holarctic *Anobiidae* this species will run to *Ernobius* because of its procoxae being touching, its prosternum short before the coxae, its tarsi prolonged and slender, and its pubescence unicolorous and neither bristling nor scaly. Sure enough the female type was interpreted as an *Ernobius* by ESPAÑOL (1966), to be judged from a recent determinative label also by JOHNSON.

More important separating characters are certainly offered, however, by the male copulatory organs, as can be seen from the illustrated articles by the mentioned authors (ESPAÑOL, 1963a, 1964a and JOHNSON, 1966) dealing with *Xestobium* and *Ernobius* respectively.

The discovery of a male specimen appears to have made it possible to settle the question. The conformity of *impressum* with certain *Xestobium* specimens in the symmetrical and unramified parameres is obvious. *Ernobius* has another type of aedeagus which seems to be very stable in its total asymmetry.

Some external features also suggest that *impressum* is no *Ernobius*, such as sub-fusiform terminal palpal segments, slightly serrate antennal stem, complicated pattern of the pronotal pubescence, peculiar prosternal process, inward strongly dilated metacoxal plates, and inconspicuous 6th sternite.

The *Ernobius* species seem to have been found to develop exclusively in pines. As far as *impressum* is concerned the biology is unknown but the only detailed locality known at present is at a low level near the coast and a connection with pines therefore not very likely.

The present additions included *Xestobium* has grown to comprise an assemblage which is rather heterogeneous in some respects. If the differences merit a splitting up into two or possibly more genera remains to be found out. The old division into two subgenera (*Xestobium* s. str. and *Hyperisus* Muls. Rey) is accepted by some recent authors (ESPAÑOL, 1964a; LOHSE, 1969). WHITE (1969) on the other hand, also considering *marginicollis*, regards the differences between the subgenera as insufficient for a separation.

Key to the Canary *Xestobium*.

- 1(2). Antennae filiform with no distinct club; segment 9 at most about 1 1/3 as long as 8 (figs. 12, 13). Pubescence conspicuously dual, of short subdepressed and much longer bristling hairs
 *filicorne* n.sp. (Grand Canary, Fuerteventura)
- 2(1). Antennae with a slightly serrate stem and a distinct club; segment 9 at least as long as 6 + 8 together (figs. 18, 19). Pubescence not conspicuously dual, of shorter recumbent and somewhat longer and a little more elevated hairs
 *impressum* (Wollaston) n.comb. (Hiero, Tenerife)

ANOBIINAE

Gastrallus lyctoides (Wollaston) (figs. 8-11).

Anobium lyctoides Wollaston, 1865, App. p. 35

Gastrallus lyctoides (Wollaston): Español, 1966, p. 226.

DESCRIPTION. Male. Body 2.2-2.9 mm. in length, 0.75 - 1.0 mm. in width, reddish brown to pitchy brown; appendages testaceous to reddish brown

except palpi, antennal segments 2-10, and tarsi being yellowish. Surface microsculptured, nearly opaque. Pubescence dense, short, adpressed, yellowish grey, silky.

Eyes rather large (longitudinal diameter equalling their separation), moderately protruding; separation shorter than half the width of the head. Antennae (fig. 8) slender, a little longer than the maximum body-width (about 1.6 times as long as the head-width); club comparatively short, segment 8 much shorter than 2-7 combined.

Prothorax (fig. 10) a little gibbose with a somewhat asperate elevation in the central portion of the anterior half; fore margin very broadly rounded in the middle, sinuate towards the corners both in dorsal and lateral view.

Elytra with no discernible striae except near the lateral margin; puncture rows normally invisible. Microsculpture of more or less isodiametric polygonals, 5-10 μm . in diameter, each near the anterior border with a small puncture from which comes a hairs of about 25 μm . in length.

Tarsi not prolonged, segment 1 of meso- and metatarsi not quite as long as 2 and 3 combined.

Aedeagus and genital segment, fig. 11. Penis with four apical teeth and a transverse lamella in the middle of the ventral side. Inner side of parameres with two short and broad protrusions which are very close to each other.

Female. Eyes smaller (longitudinal diameter shorter than their separation) and less protruding; separation longer than half the headwidth. Antennae (fig. 9) somewhat shorter (about 1.4 times as long as the head-width).

MATERIAL. (Gomera, 1864 (Messrs. GROTH)), 1 ♂ (holotype), in the Wollaston collection of the British Museum (N.H.). There is no red ink-line to indicate the island and all finding-data are from WOLLASTON l.c.

Grand Canary, Maspalomas, reared from dead branches of *Launaea spinosa* collected 22. vi. 1973 (ISRAELSON), 2 ♂♂, 8 ♀♀.

Biology. Adults appeared in June 1973 and May 1974. Other coleopters emerging from the same material were *Paraxyletinus israelsoni* Esp. and *Mesites fusiformis* Woll.

COMMENTS. The absence of the red line on the rectangle should mean, according to Wollaston's practise, that the holotype specimen originates from Tenerife and hence contradicts the statement in connection with the original description.

The first Canarian insect to be recognized as a *Gastrallus* is *maurelaticus* Español (1964b, p. 104) but the record was considered to need confirmation. This species is distributed in North Africa and is unknown to me. Externally it will be difficult to separate from *lyctoides* but the aedeagus (cf. ESPAÑOL, 1963b, fig. 16) is amply different.

XYLETININAE

Megorama subserratum n. sp. (figs. 24-28).

DESCRIPTION. Male. Body robust, sub-cylindrical, 5.1 mm. in length, head excluded, and 2.25 mm. in width, reddish brown; head and pronotal disc a shade darker; antennae, palpi, and tarsi ochraceous. Puncturation

delicate and dense, on the pronotal disc largely replaced by rather coarse and dense granulae. Pubescence yellowish, seemingly uniform, decumbent, short, dense but hardly obscuring the surface, on the elytra tending to form longitudinal stripes (remining of those present in certain species of *Clada* or *Paraxyletinus* though less conspicuous).

Eyes circular, large and protruding, separated by 1.3 times their longitudinal diameter. Antennae (fig. 26) short, hardly longer than the body-width, clavate; stem slightly, club more pronouncedly serrate; segment 3 more long than wide, 4-8 transverse, 9 nearly as long as 3-8 combined and twice as wide as 8, 10 somewhat longer still and nearly as wide, 11 much longer and narrower than 11. Terminal segment of maxillary palpi (fig. 24) somewhat obliquely pointed; that of labial palpi (fig. 25) slightly more securiform.

Prothorax transverse (index 1.45); upper side moderately convex, feebly gibbous posteriorly; lateral margin finely reborded, not very broadly explanate; front angles a little acute; hind angles very broadly rounded.

Elytra a little wider than and, from the scutellar apex, 2.5 times as long as the prothorax, 1.65 times as wide; surface confusedly and very finely puncturate and slightly rugose.

Legs rather stout; tibiae distinctly grooved on the outer edge; tarsi short; metatarsi 0.45 times as long as the prothorax and 0.7 times as long as the metatibiae; mesotarsus, fig. 27; segments comparatively equal in length.

Pro- and mesocoxae contiguous. Metasternum with a transverse elevation and a median sulcus posteriorly, gradually declivous anteriorly (declivity not limited by a carina), finely puncturate, distinctly microreticulate anteriorly except for the median portion being shiny and glabrous. First abdominal segment not carinate, the upward-bent intercoxal lobe included a little longer than segment 2, much longer than 3 and 4, but somewhat shorter than 5. Genital segment (fig. 28) parallelsided, evenly rounded anteriorly.

Aedeagus, fig. 28. Parameral appendages very slender and somewhat flattened distally, with hairs of normal length. Internal penial sac with a group of 9 short and somewhat curved spines and in front of this group with a single larger and straight spine, as it seems with a cavity. Female unknown.

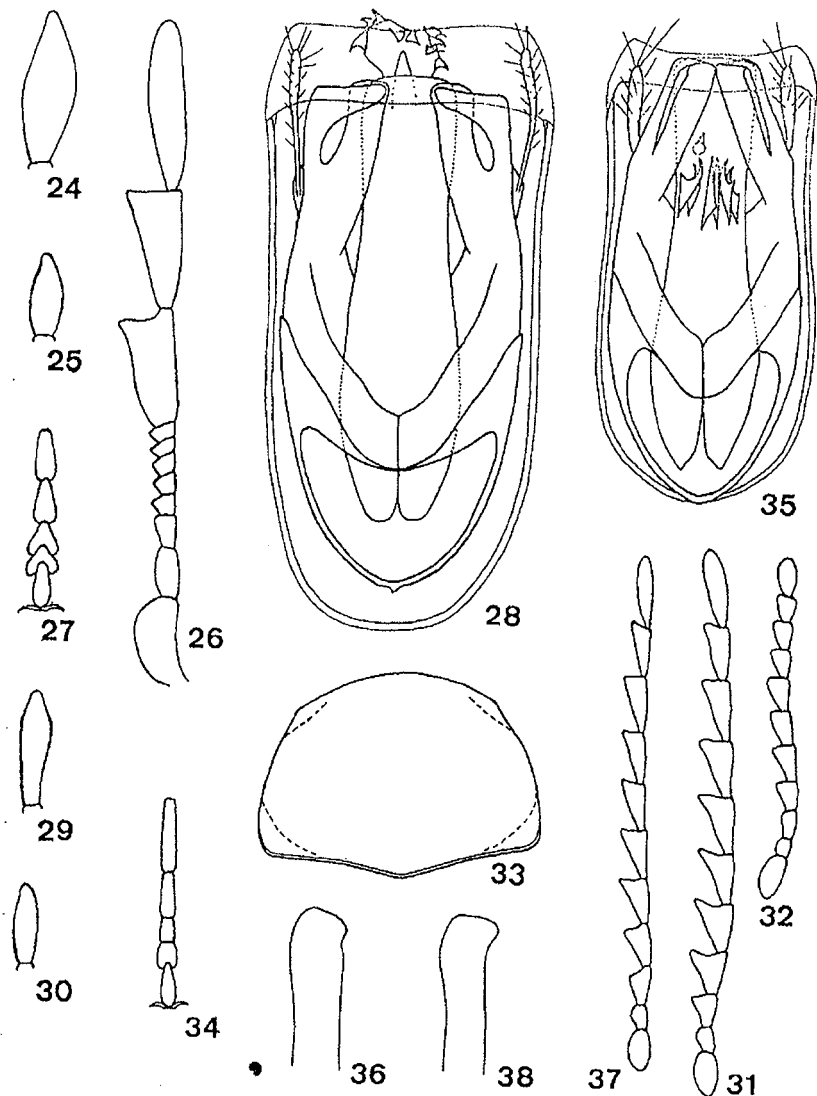
MATERIAL. Lanzarote, Bco. de la Pocela, 300 m., reared from dead branches of *Launaea*, collected 22. ii. 1973, No. 5164 (ISRAELSON), 1 ♂ (holotype), in my collection.

BIOLOGY. The sole specimen emerged in the following summer. Other coleopters obtained from the same branches were: *Stagetus h. orientalis* n.ssp. (see below), *Psolactus cautium* Woll., and *Mesites fusiformis* Woll.

COMMENT. The genus *Megorama* Fall (1905; see also WHITE, 1971a and b), described from North America, seems not to have been recorded before from the Old World but ESPAÑOL (1966, p. 224; 1968b, p. 19) stressed its close affinities to the Ethiopian *Falsoptilinus* Pic and in a recent manuscript includes the latter in the former (pers. comm.).

***Metholcus gracillipes* n. sp. (figs. 29-36).**

DESCRIPTION. Male. Body elongate, cylindrical, 2.95-4.0 mm. in length, 1.1-1.5 mm. in width, reddish brown, head and pronotum darker; palpi



Figs. 24-38. — 24-28, *Megorama subserratum* n.sp.; 29-36, *Metholcus gracilipes* n.sp.; 37, 38, *Metholcus gracilipes substriatus* n.ssp.

— 24, 29, terminal segment of ♂ maxillary palpus; 25, 30, terminal segment of ♂ labial palpus; 26, 31, 37, ♂ antenna, 27, 34, ♂ mesotarsus; 28, 35, genital segment with aedeagus; 32, ♀ antenna; 36, 38, terminal part of paramere, inner branch; 33, prothorax, dorsal view.

— Magnification (diameters): 24, 25, 28-30, 35, 60X; 26, 27, 34, 40X; 31-33, 37, 30X; 36, 38, 140X.

and tarsi testaceous. Puncturation not very dense, fine on the forebody, coarser on the elytra and with a distinct tendency there to form longitudinal series; interstices with a dense and, on the fore-body, slightly granulate micropuncturation. Pubescence yellowish, dual, of shorter decumbent and longer suberect hairs, the latter on the elytra tending to be arranged into rows corresponding to those of the punctures.

Head narrower than the prothorax (index 0.8), not excavate or depressed below. Eyes moderately large and protruding, separation 1.4-1.5 times as long as their longitudinal diameter. Antennae (fig. 31) about 2/3 as long as the body, serrate from segment 3; segment 4 hardly more long than wide, 9 not notably longer than the preceding. Terminal palpal segments subfusiform (figs. 29, 30).

Prothorax (fig. 33) transverse (index about 1.4), its greatest width near the base, strongly convex transversally but faintly so longitudinally; lateral margins narrowly reborded; anterior margin arcuate, not reborded except near the angles; fore angles nearly rectangular, hind angles very obtuse-angled, broadly rounded.

Elytra parallel-sided, apically rounded together, twice as long (from the scutellar apex) as wide, 2.8 times as long as and about as wide as prothorax, with no impressed striae but each with 15-20 rows of punctures which are rather irregular on the disc but more regular near the lateral margin.

Legs slender, of moderate length; terminal spurs well developed in the meso- and metatibiae, about as long as the width of the first tarsal segment in dorsal view, shorter in the protibiae; meso- and metatibiae (fig. 34) about 0.7 times as long as the prothorax and about as long as the tibiae; segment 1 a little longer than 2 and 3 together.

Metasternum with a median sulcus, slightly descending anteriorly; the declivity not distinctly limited posteriorly. Pro- and mesocoxae contiguous. Metacoxae a little dilated inward; hind margin with a not very strong obtuse-angled tooth on level with the point of attachment between the trochanter and the femur. Metasternum with episterna densely granulate and finely microreticulate except for the central and posterior portion being finely and sparsely punctured and not reticulate, shining. Abdominal segment 1 nearly as long as 5 and a little longer at the middle than 2; 3 and 4 equal, shorter. First suture broadly arcuate, narrowing segment 2 at middle. Genital segment simple (fig. 35).

Aedeagus, fig. 35. Internal penial sac with 7 or 8 about equally shaped and sized, strong spines on nearly the same level and in addition with numerous very small ones (omitted in the figure). Outer branch of parameres with a short abrupt subapical incision at its inner side (fig. 36).

Female. Body 3.7 - 5.2 mm. in length. Eyes smaller, separation 1.8 - 2 times longer than their longitudinal diameter. Antennae much shorter, about 0.4 times as long as the body, less pronouncedly serrate (fig. 32). Tarsi shorter.

MATERIAL. Grand Canary, Maspalomas, reared from dead wood of *Tamarix* collected 25. xii. 1972, No. 4373 (ISRAELSON), 1 ♂ (holotype); ditto 22. vi. 1973 (ISRAELSON), 1 ♂, 1 ♀; ditto, 9. ix. 1973, hatched x. 1973 (PALM), 1 ♂; same locality, in wood of *Tamarix*, 25. xii. 1972 (ISRAELSON), 1 ♀; same locality, reared from dead branches of *Lamnaea* collected 25. ii. 1972 (ISRAELSON), 1 ♂.

BIOLOGY. Certainly a polyphagous species. The few records do not suggest that adults would be restricted to any particular season.

From the *Tamarix* branches also emerged *Sphaericus gibbicollis* Woll. and *Acalles pilula* Woll., from those of *Lavnaea Teretriosoma cylindricum* (Woll.), *Scobicia barbifrons* Woll., *Clada d. insularis* n.ssp. (see above), *Sphaericus gibbicollis*, and *Lypha angustata* Luc.

***Metholcus gracilipes substriatus* n. ssp. (figs. 37-38).**

DESCRIPTION. Male. Body 3.3 mm. in length and 1.15 mm. in width. Differing from the nominate race in the following respects.

Build a little narrower. Eyes larger, their separation 1.25 times as long as their diameter. Antennae (fig. 37) more slender; segment 4 distinctly longer than wide. Elytra with feebly impressed striae, each with ten fairly distinct puncture series, on the disc consisting of a double row of smaller punctures or a single row of larger ones. Pubescence somewhat shorter; suberect pubescence of the elytral sides not longer than the second antennal segment (in the nominate form distinctly longer). Subapical concavity of the inner parameral branch a little stronger but less abrupt (fig. 38).

Female unknown.

MATERIAL. Fuerteventura: Jandía, Morro Jable, in dead wood of *Suaeda*, 14. vi. 1973, No. 5012 (ISRAELSON) 1, ♂ (holotype), in my collection.

BIOLOGY. From the same wood were also obtained some specimens of *Paraxyletinus israelsoni* Esp.

COMMENT. The two *Metholcus* races just described may be regarded as extreme forms of the *arcuaticollis* group or the *rotundicollis* group (ESPAÑOL, 1968b, p. 11, and 1972b, p. 7, respectively) differing from the usual concept of the genus in their slender and prolonged tarsi. The elytral puncturation and pubescence seem to show interesting similarities with those of *rotundicollis* var. *subseriatus* Sahlb. known from Turkey (ESPAÑOL, 1972b, p. 7).

Key to the Canarian *Metholcus* (♂♂).

- 1(2). Antennae moderately slender; 4th segment about as wide as long (fig. 31).
Eye separation 1.4 times as long as the longitudinal diameter of one eye
gracilipes n.ssp. (Grand Canary)
- 2(1). Antennae more slender, 4th segment distinctly longer than wide (fig. 37).
Eyes larger; their separation 1.25 times as long as the longitudinal diameter.
g. substriatus n.ssp. (Fuerteventura)

***Paraxyletinus israelsoni ornatus* n.ssp. (figs. 41, 42).**

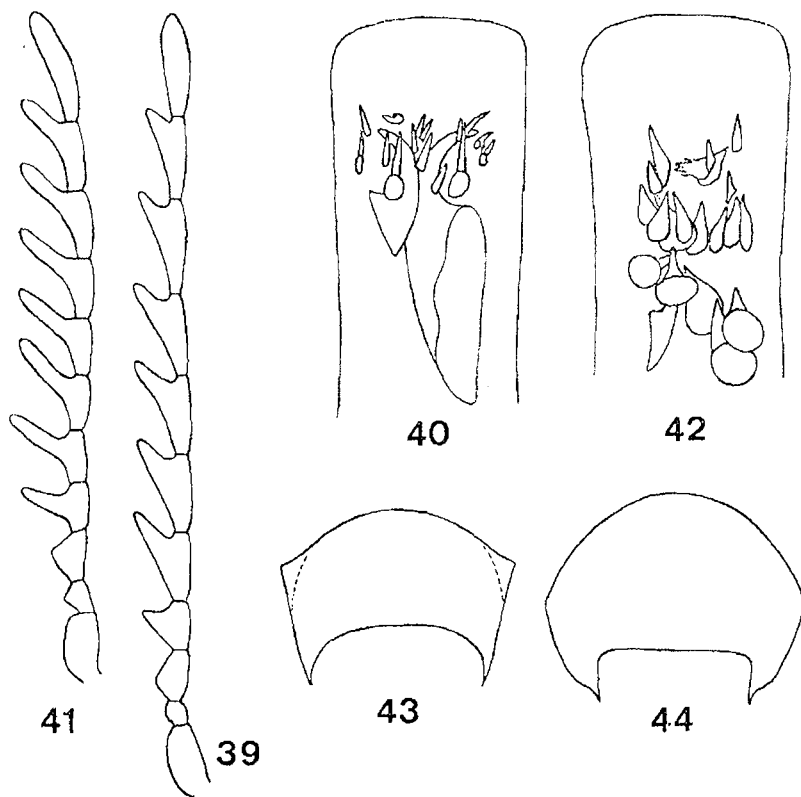
DESCRIPTION. Male. Body 4.6 - 5.0 mm. in length.

Distinguished from *i. israelsoni* Español (1972a, p. 60-64) by the following combination of characters.

Pubescence more conspicuous, largely obscuring the surface, distinctly dual, consisting of rather broad, adpressed, white hairs and of narrower, recumbent, yellow ones. Colour therefore paler and specific ornamentation more pronounced. Eyes not very far from circular: grea-

test diameter about 1.15 times as long as the shortest. Hind pronotal angles narrowly but distinctly explanate. Spines of the internal penial sac (fig. 42) about 20 in number, relatively uniform in size, two of the anteriormost not being particularly large.

Female unknown.



Figs. 39-44. — 39, 40, *Paraxyletinus oculatissimus* n.sp.; 41, 42, *Paraxyletinus israelsoni ornatus* n.sp.; 43, *Stagetus euphorbiae* Israelson; 44, *Stagetus hirtulus brachypilosus* Israelson. — 39, 41, ♂ antenna; 40, 42, armature of penial sac; 43, 44, prothorax, frontal view. — Magnification (diameters): 39, 41, 43, 44, 30X; 40, 42, 140X.

MATERIAL. Lanzarote, Famara Playa, reared from dead roots of *Zygophyllum fontanesii* collected 23. xii. 1971, No. 4009 (ISRAELSON), 1 ♂ (holotype) plus 3 ♂♂, in my collection.

COMMENT. The nominate race is averagely smaller: body-length 2.75-4.4 mm. (20 examined ♂♂). Its pubescence is more uniformly greyish and hardly obscures the surface except at the longitudinal elytral stripes. The eyes are somewhat ovoid, 1.3-1.4 times as long as broad. The hind pronotal angles are not distinctly explanate. Two basal spines of the internal

penial sac (ESPAÑOL, l.c., fig. 33) are distinctly, usually very much, larger than the others.

Paraxyletinus oculatissimus n. sp. (figs. 39, 40).

DESCRIPTION. Male. Body parallel-sided, 4.4 mm. in length, 1.55 mm. in width. Ground colour brown; head blackish; pronotal border diffusely paler; general aspect grey owing to the densely and finely granulate surface being moderately obscured by a uniformly whitish and in the main adpressed pubescence. Antennae, palpi and tarsi testaceous.

Eyes very large and protruding, circular in side view; separation 1.1 times as long as the diameter (or half as long as the total width of the head). Antennae $2/3$ as long as the body, strongly serrate from segment 4 (fig. 39).

Prothorax 1.47 times as broad as long, moderately arched transversally; lateral sides nearly straight and parallel; anterior corners visible strictly from above. Pubescence of the posterior third nowhere directed more or less forward.

Elytra 2.05 times longer, from the scutellar apex, than wide and 3.1 times as long as prothorax; puncture series indistinguishable (except in transmittent light or viewed from the inside); uneven «interstriae», to a lesser extent also some of the even ones, with fine costae covered by longer and denser pubescence; resulting longitudinal stripes not very conspicuous.

Aedeagus (fig. 40) with the internal sac armed with 16 smaller and, anteriorly, 2 much stronger spines.

Female unknown.

MATERIAL. Tenerife, Los Cristianos, reared from a dead twig of *Schizogyne sericea* (determination confirmed, with some hesitation, by SUNDING) collected 22. iii. 1971, No. 2291 (ISRAELSON), 1 ♂ (holotype), in my collection.

COMMENT. The conformity in build of the male copulatory organs of *oculatissimus* and *i. israelsoni* markedly contrasts with the dissimilarities in respect of several, as it seems, taxonomically important and independent external characters. The latter as well as the second race of *israelsoni* differs from *oculatissimus* in the following respects.

Eyes smaller and less protruding; separation about twice as long as the longitudinal diameter. Antennae pectinate (fig. 46). Prothorax less strongly transverse, 1.2-1.4 times as wide as long; upper side very strongly arched transversally, in dorsal view with convex sides and invisible fore corners. Pubescence fan-shaped (hairs radiating forward) on a small area immediately before the hind margin and about half-way between the angle and the middle. Elytra with their greatest width across the shoulders, relatively somewhat shorter: about 2.5-2.6 times as long as the prothorax, 1.65-1.90 times as long as wide.

Key to *Paraxyletinus* (M♂♂).

- 1(4). Eye separation about twice the longitudinal eye diameter. Antennae pectinate (fig. 41) (in the female serrate).
- 2(3). Eye ovoid in side view, greatest diameter 1.3 - 1.4 times as long as the shortest. Pubescence about uniformly greyish. Two basal spines of the internal penial

- sac distinctly longer than the following (cf. fig. 39) *israelsoni* Español (Gomera, Tenerife, Grand Canary, Fuerteventura)
- 3(2). Eyes nearly circular in side view, greatest diameter about 1.15 times as long as the shortest. Pubescence distinctly dual, with dense, white, adpressed hairs and more scattered, yellow, recumbent ones. Basal spines of the internal penial sac about equalling the next following in size (fig. 42)
- 4(1). Eye separation hardly longer than the eye diameter. Antennae strongly serrate (fig. 39) *israelsoni ornatus* n.ssp. (Lanzarote)
oculatissimus n.ssp. (Tenerife)

DORCATOMINAE

Stagetus hirtulus Wollaston orientalis n.ssp.

DESCRIPTION. Body length 1.8-2.6 mm., width 1.15-1.55 mm. Differing from the other *hirtulus* races (ISRAELSON 1971) by the following combination of characters.

The coarse puncturation of the pronotum extended almost to the base except medially, at the sides usually confluent into concentric furrows separated by narrow crests. Also at the abdomen the coarse puncturation is more marked and extended further backward than in the other races. Micropuncturation extremely delicate, barely visible at 40.

Longer hairs erect and straight, those near the elytral margin about as long as antennal segment 10.

Striae of the elytral disc very distinct, regular and sharply impressed but punctures not very apparent. Interstriae quite flat.

Aedeagus like that of the nominate form; parameral appendages elongate, not very strongly curved, about 5 times as long as wide.

MATERIAL. Lanzarote, Bco. de la Pocela, 300 m., sieved from debris under *Euphorbia balsamifera*, 26. xii. 1971, No. 3510 (ISRAELSON), 1 ♂ (holotype) in my collection; ditto, 22. ii. 1973 (Israelson), -1 ♀; ditto but reared from branches of *Laurinaea* collected 22. ii. 1973 (ISRAELSON), 1 ♀; Famara Playa, in a dead branch of *Zygophyllum fontanesii*, 27. ii. 1973 (ISRAELSON), 1 ♂.

BIOLOGY. For beetle biocoenoses see above under *Clada d. insularis* and *Megorama subserratum*.

Key to the Canarian *Stagetus*.

- 1(2). Prothorax 1.4 times as wide posteriorly as across the anterior corners, moderately arched; hind angles distinctly flattened (fig. 43). Terminal portion of penis not strongly curved but anterior half with a large longitudinal crest at the ventral side
euphorbiae Israelson (Hiero)
- 2(1). Prothorax at least 1.6 times as wide posteriorly as across the front corners, strongly arched; hind angles not flattened (fig. 44). Penis strongly curved apically, with no crest.
- 3(10). Body less elongate, 1.5 - 1.6 times as long as wide, as a rule. Antennal club less slender; terminal segment at most 2.5 times as long as wide. Body larger or smaller, in the former case the elytral striae very weak.
- 4(7). Striae of elytral disc very fine and lightly impressed, often partly indistinct; interstriae always flat.
- 5(6). Pubescence longer and more erect; submarginal elytral hairs 0.7 times as long as antennal segment 10. Averagely larger, 1.5 - 1.95 mm in width
h. hirtulus Wollaston (Hiero, Gomera)
- 6(5). Pubescence short, more adpressed; submarginal elytral hairs reaching about the length of antennal segment 10. Averagely smaller, 1.10 - 1.55 mm in width
h. brachypilosus Israelson (Grand Canary)
- 7(4). Striae of elytral disc distinct, more or less strongly impressed.
- 8(9). Striae of elytral disc mainly indicated by more or less conspicuous punctures; interpunctural portions more weakly impressed. Interstriae a little convex.

- Pubescence shorter and more recumbent (hairs curved); submarginal hairs not reaching, by far, the length of antennal segment 10
- 9(8). Striae of elytral disc narrow but sharply impressed and very regular; punctures inconspicuous. Interstriae flat. Pubescence longer and erect; hairs straight; submarginal elytral hairs nearly reaching the length of antennal segment 10
- 10(3). Body more elongate, about 1.75 times as long as wide, mat. Antennal club more slender, terminal segment about 3 times as long as broad. Large species, 2.6 - 3.1 mm. in length. Striae of elytral disc strongly impressed

h. crenatus Wollaston (La Palma, Tenerife)

h. orientalis n.sp. (Lanzarote)

thurepalmsi Israelson (Tenerife)

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SUMMARY

The following Canarian Anobiidae, all being endemics, are described: *Clada espanyoli* n.sp., *C. denticornis insularis* n.sp., *Xestobium filicorne* n.sp., *X. impressum* (Wollaston) n. comb., *Gastrallus lyctoides* (Wollaston), *Megorama subserratum* n.sp., *Metholcus gracilipes* n.sp., *M. g. substriatus* n.sp., *Paraxyletinus israelsoni ornatus* n.sp., *P. oculatissimus* n.sp., and *Stagetus hirtulus orientalis* n.sp.

Xestobium, *Megorama*, and *Metholcus* are genera new to the Macaronesian archipelagos.

Some notes are given on the biology of most of the various species as well as keys to the Canarian species of the affected genera.

RESUMEN

Se describen los siguientes Anobiidae, todos endémicos de las Islas Canarias: *Clada espanyoli* n.sp., *C. denticornis insularis* n.sp., *Xestobium filicorne* n.sp., *X. impressum* (Wollaston) n. comb., *Gastrallus lyctoides* (Wollaston), *Megorama subserratum* n.sp., *Metholcus gracilipes* n.sp., *M. g. substriatus* n.sp., *Paraxyletinus israelsoni ornatus* n.sp., *P. oculatissimus* n.sp., y *Stagetus hirtulus orientalis* n.sp.

Tres de los indicados géneros (*Xestobium*, *Megorama* y *Metholcus*) son nuevos para los archipiélagos Macaronésicos.

Se acompaña un complemento biológico como también claves de separación de los representantes canarios de los géneros objeto de comentario.

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