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A revision of the Madeiran species of *Xenomma* WOLLASTON, 1854 (Insecta: Coleoptera: Staphylinidae: Aleocharinae)

With 16 Figures

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Abstract. After a revision of the relevant types and of further material, two Madeiran species of *Xenomma* WOLLASTON are recognized: *X. planifrons* WOLLASTON and *X. convexifrons* spec. nov. Typical characters of the genus, particularly the mouthparts, are considered and illustrated. Diagnostic descriptions of the species are supplemented by drawings of their genitalia, comments on their distribution and bionomics, and a key.

Introduction

In his first major study of Madeiran insects WOLLASTON (1854) based the description of his new genus *Xenomma* on several external characters – especially the short elytra, reduced hind wings and small eyes – and on the structure of the mouthparts, particularly the long and parallel ligula "which is most minutely, and straightly, bifid at its extreme apex only" Apart from the type species (by original designation) *X. planifrons* WOLL. he included two further species in the genus, *X. formicarum* WOLL. and *X. filiforme* WOLL., which, however, have meanwhile been transferred to *Geostiba* THOMSON (ASSING & WUNDERLE, 1996; FAUVEL, 1897; PALM, 1981). Having consulted KRAATZ, Berlin, for his opinion on *X. planifrons*, WOLLASTON (1857) discussed the vicinity of *Xenomma* to *Oxypoda*, but retained the former as a separate genus. Apart from *X. muscicola* WOLLASTON (1864) and *X. melanocephala* CROTCH (1867), both of which were later excluded from the genus and are today placed in *Geostiba* THOMSON (ASSING & WUNDERLE, 1996; FAUVEL, 1897; PALM, 1975), no further species of *Xenomma* became known for more than a century, the genus thus containing only the type species. Only recently PACE (1987) described two new species of *Xenomma* from Chile, *X. subandina* and *X. simpsoniensis*. If they indeed belong to the same genus, *Xenomma* appears to have a remarkably disjunct pattern of distribution. During a joint excursion to Madeira in spring 1993 we not only collected a considerable number of *X. planifrons,* but also of a further species which proved to be new to science.

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Xenomma WOLLASTON, 1854

Its tarsal formula (5,5,5) and the general construction of the mouthparts with 3-jointed labial and 4-jointed maxillary palpi (Figs. 1b–c, 2b–c) characterize the aleocharine genus *Xenomma* WOLL. as a member of the tribe Oxypodini. Of the diagnostic characters indicated in the original description (WOLLASTON, 1854) to distinguish *Xenomma* from similar Aleocharinae (see above), the structure of the mouthparts appears to be most significant, whereas external properties, such as short elytra, reduced alae or small eyes, are also known to occur in many other taxa of Staphylinidae and are likely to have evolved as an immediate adaptive response to certain habitats and life-histories. Among the Oxypodini the ligula is unique in that it is relatively long with a bifid apex, the apical incision and the two tips being very short (Figs. 1b, 2b). Furthermore, the labial palpi are elongate, usually clearly projecting from under the head and visible from above in mounted specimens (Figs. 1a–b, 2a–b).
In addition the (Madeiran) species of the genus share the following characters:
Body bicoloured with at least segments III–VI of the abdomen (and often also part of the antennae) clearly darker than head, thorax and appendages; whole surface, especially head, pronotum and elytra, with ± distinct microreticulation and therefore subdued shine.
Inner margin of right mandible in the middle with tooth (Figs. 1d, 2d); maxilla and labrum as in Figs. 1c, e and 2c, e. Eyes of intermediate size and functional, in dorsal view temples 1.5–2× longer than eyes; antennae with antennomeres 1–3 elongate and 4–11 steadily increasing in width (Figs. 1f, 2f).
Pronotum slightly wider than head; elytra at suture clearly shorter than pronotum, scutellum conspicuously large, alae reduced (Figs. 1a, 2a); mesosternal process very long and acute, projecting between the mesocoxae. Abdomen with maximal width slightly exceeding that of elytra.
First joint of hind tarsi elongate, at least as long as joints 2 and 3 together.
♂: Aedeagus with characteristic sclerotized structures in internal sac, parameres with long apical lobes (Figs. 1h–i, 2h–i).

Xenomma planifrons WOLLASTON, 1854 (Figs. 1a–i)

Xenomma planifrons WOLLASTON, 1854, p. 544

Type: In the original description WOLLASTON (1854) states that he only had one specimen before him which he collected "in the lofty sylvan district of the Cruzinhas" in July 1850. There are five specimens of *Xenomma planifrons* in the WOLLASTON collection at the BMNH, four of them mounted on similar labels with the same code number (901?); one of these four specimens carries a round "curator" type label, which is, however, taxonomically insignificant. The fifth specimen is mounted on a different card with the code number 188; therefore, we conclude that this is in fact the holotype WOLLASTON (1854) based his description on.

Further material studied (all except for the first specimen leg. & coll. ASSING & WUNDERLE): 1♀: Ribeiro Frio, 26.3.75, VIT lgt.; 2 ♂♂: Queimadas, 900 m, 27.III.1993; 7 ♂♂, 6 ♀♀: Bica da Cana, 1550 m, 29.III.1993; 3 ♂♂, 6 ♀♀: Caramujo, 1220 m, 29.III.1993; 2 ♂♂: Rabacal, 1150 m, 31.III.1993; 5 ♂♂, 11 ♀♀: Ribeira da Janela, 800 m, 31.III.1993; 1♀: Pico Arieiro, 1600 m, 03.IV 1993; 1 ♂: Caramujo, 1300 m, 04.IV 1993; 6 ♂♂, 12 ♀♀: Rosario, Encumeada, 1000 m, 05.IV 1993. For further material and localities see Addendum, p. 162.

Description:
Length 4–5 mm. Body bicoloured with abdominal segments III–VI, often also the anterior area of tergite VII and part of the antennae clearly darker, dark brown to blackish, and head, thorax, appendages and tip of abdomen yellow to reddish yellow. Microreticulation of head, thorax and abdomen ± superficial.
Head conspicuously flattened dorsally (name!), temples rounded, in dorsal view ca. 2× longer than eyes, maximal width behind eyes; punctation distinct and very dense, interstices reduced to narrow ridges; antennae long and slender, antennomeres 4–7 oblong, 8–10 subquadrate (Fig. 1f); mandibles

very long, strongly curved and acute (Fig. 1d); maxillary palpus and labrum densely pubescent (Fig. 1c, e); labium as in Fig. 1b.
Pronotum 1.15–1.2× wider than head, ca. 1.25× wider than long with maximal width a short distance before the middle; with ± shallow and wide impression along midline and distinctly concave posterior margin; surface with dense and short pubescence and granulose punctation, the latter much finer than on head.
Elytra not covering the remarkably large scutellum, ca. 1.15× wider and, at suture, 0.69–0.73× shorter than pronotum; surface with wide and shallow impressions along the anterior two thirds of suture and along exterior half of each elytron; punctation granulose and distinctly coarser than on pronotum; pubescence dense, short, depressed and inconspicuous.
Abdomen finely punctured and with dense, short, depressed and whitish pubescence; sternite VIII in both sexes ± strongly convex posteriorly.
♂ Aedeagus as in Fig. 1i.
♀ Spermatheca as in Fig. 1g.

Distribution and bionomics

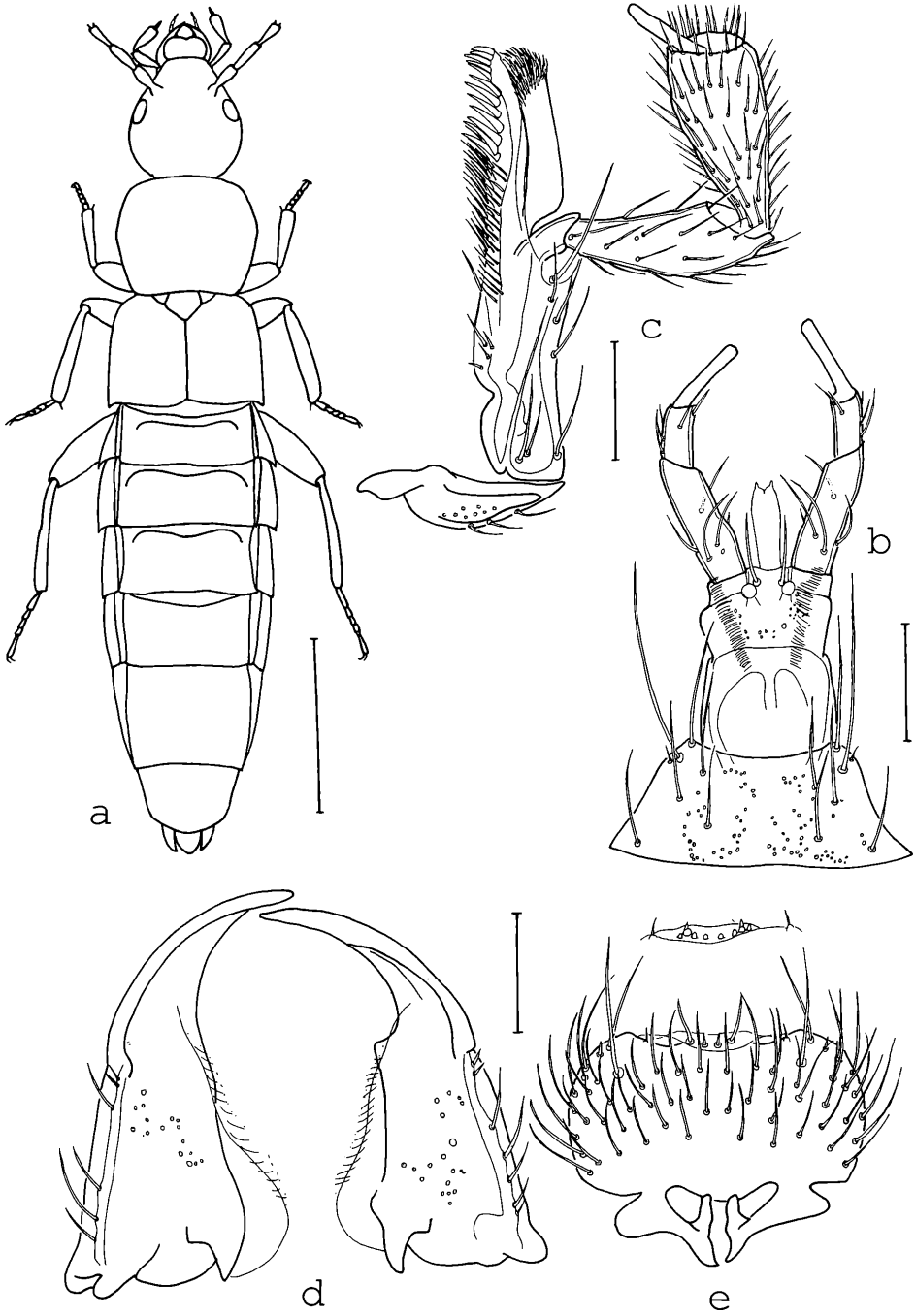
X. planifrons WOLL. is endemic to Madeira proper. Apart from the type locality it has been recorded from Queimadas (LIKOVSKY, 1963), Pico Ruivo, "in mouldy Erica", 1700–1860 m (ERBER & HINTERSEHER, 1988) and Rabacal (BERNHAUER, 1940) in February, May and June. We collected our material in March and April and observed teneral specimens on 29.III. and 05.IV.; a larva probably belonging to the species was found on 04.IV We sieved and extracted *X. planifrons* from deep and moist litter in stands of *Laurus, Erica* and *Vaccinium* usually in northern or western exposition.

***Xenomma convexifrons* spec. nov.** (Figs. 2a–i)

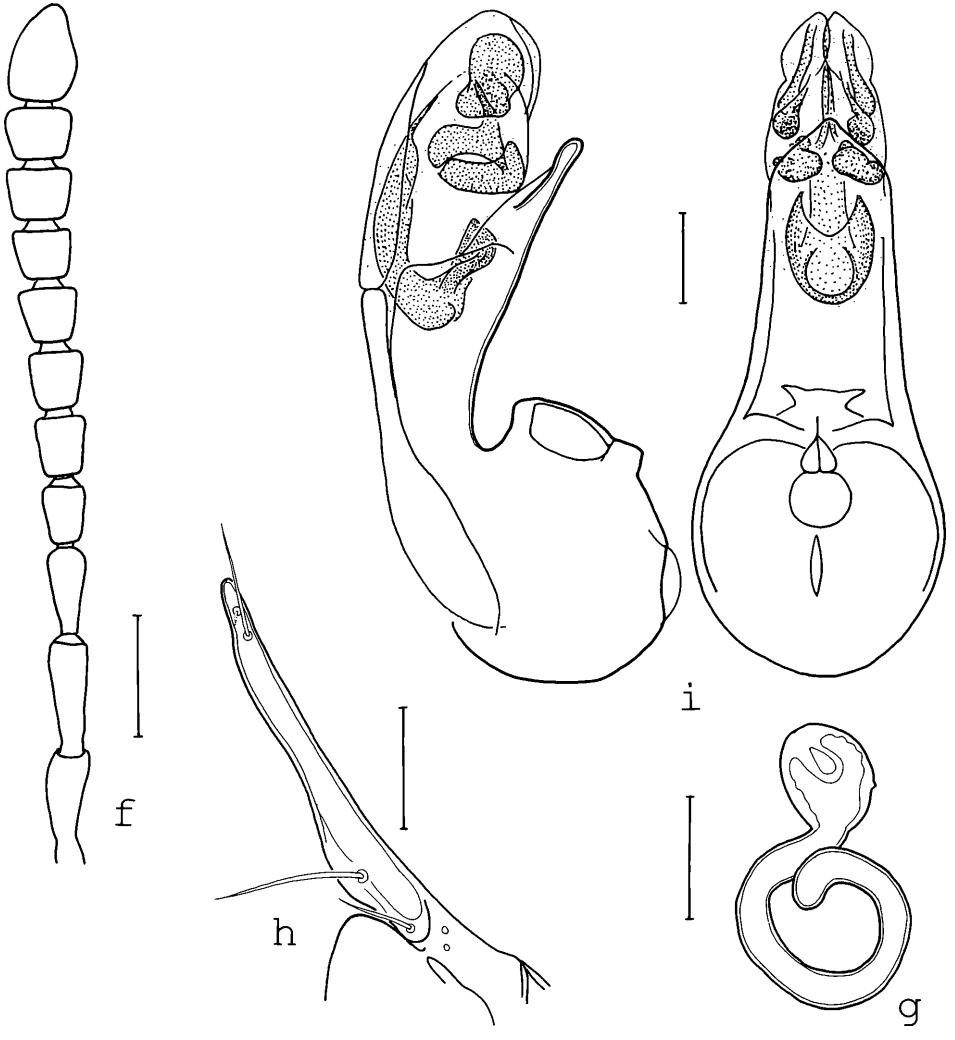
Types: Holotype ♂, Madeira, Pico de Arieiro, 1600 m, 03.IV 1993, leg. & coll. ASSING. – Paratypes: 2 ♂♂: Caramujo, 1220 m, 04.IV 1993; 1 ♂: Madeira, Pico de Arieiro, 1600 m, 03.IV 1993; 1 ♀: Queimadas, 27.III.1993; 1 ♀: Madeira, Rabacal, 1050 m, 31.III.1993, all leg. & coll. ASSING & WUNDERLE; 1 ♂: Madeira, Ribeiro Frio, 26.III.75, Vit lgt. (coll. ASSING); 1 ♂: Madeira, Ribeiro Frio, 03.IV.75, Vit lgt. (coll. ASSING); 1 sex?: Madère, Faja de Nogueira, 03.IV 75, Vit lgt. (Muséum d' Histoire naturelle Genève); 2 sex?: Pico de Arieiro, Fonte Vermelha, 16.IV 1970, leg. FRANZ, coll. FRANZ, coll. WUNDERLE; 1 sex?: Rib. Bonito (date unknown), leg. & coll. FRANZ. For further paratypes see Addendum, p.162.

Description:

Length 2.2–3.0 mm. Body bicoloured with abdominal segments III–VI, usually also most of tergite VII and often part of the antennae clearly darker, dark brown to blackish; head, thorax, appendages and tip of abdomen reddish brown to brown. Microreticulation of head, thorax and abdomen very distinct.
Head convex (name!), temples only slightly rounded, in dorsal view ca. 1.5× longer than eyes, maximal width near or a short distance behind posterior margin of eyes; punctation shallow and spaced, interstices much wider than diameter of punctures; antennae shorter and wider than in *X. planifrons*, antennomere 4 subquadrate, 5 transverse and penultimate antennomeres ca. 1.5× wider than long (Fig. 2f); mandibles shorter and less curved, pubescence of labrum and maxillary palpus less dense than in *X. planifrons* (Figs. 2c–e); labium as in Fig. 2b.
Pronotum 1.15–1.25× wider than head, 1.0–1.1× wider than long with maximal width in anterior half, clearly before the middle; evenly convex without median impression, posterior margin not concave; surface with thin pubescence, clearly less dense than in *X. planifrons*, directed posteriorly along and laterally on either side of midline; punctation very indistinct, hardly visible in microreticulation.
Elytra ca. 1.12–1.20× wider and, at suture, 0.65–0.75× shorter than pronotum; surface even, without impressions; punctation finely granulose, barely visible in coarse microreticulation; and distinctly coarser than on pronotum; pubescence fine, less dense than in *X. planifrons*, and inconspicuous; alae reduced; scutellum large.



Figs. 1a–e



Figs. 1a–i: *Xenomma planifrons* WOLL.: Habitus (a), labium (b), maxillary palpus (c), mandibles (d), labrum (e), antenna (f), spermatheca (g), apex of paramere (h), median lobe in lateral and ventral view (i). Scales: a: 1.0 mm; b–e, g–i: 0.1 mm; f: 0.2 mm.

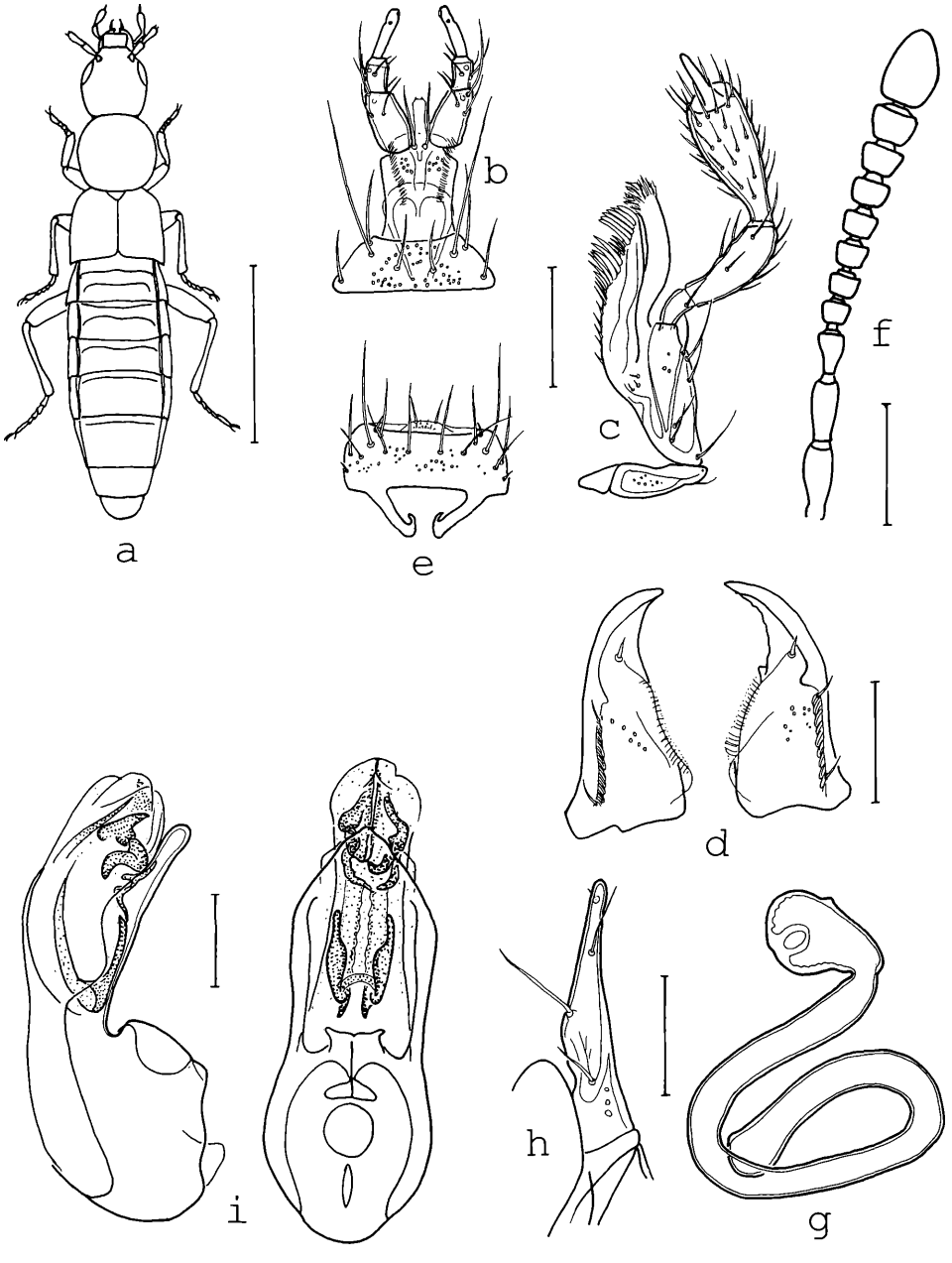
Abdomen finely and evenly punctured and with rather sparse, long, often semi-erect pubescence; sternite VIII in both sexes ± strongly convex posteriorly.

♂: Hind margin of sternite VIII rather strongly convex, with sparse long hairs; aedeagus as in Fig. 2i.

♀: Sternite VIII slightly rounded, with a row of short dark bristles posteriorly; spermatheca as in Fig. 2g.

Distribution and bionomics:

Like *X. planifrons* WOLL., *X. convexifrons* is endemic to Madeira proper, where it occurs in similar habitats and at high altitudes. We sieved and extracted specimens of this apparently very rare species from deep litter in stands of *Vaccinium, Erica* and *Laurus* at the localities indicated above.



Figs. 2a–i: *Xenomma convexifrons* spec. nov.: Habitus (a), labium (b), maxillary palpus (c), mandibles (d), labrum (e), antenna (f), spermatheca (g), apex of paramere (h), median lobe in lateral and ventral view (i). Scales: a: 1.0 mm; b–e, g–i: 0.1 mm; f: 0.2 mm.

Key to the Madeiran species of *Xenomma* WOLL.

1 Larger species, 4–5 mm; colour of head and thorax lighter, yellowish to reddish yellow. Whole body with rather superficial microreticulation and very dense, short and depressed pubescence, particularly on abdomen. Head flat and of roughly triangular shape, its maximal width clearly behind the eyes and the sides straightly converging anteriorly, surface with distinct and very dense punctation; antennae longer, antennomeres 4–7 oblong (Fig. 1f). Pronotum with shallow median impression and concave hind margin; punctation granulose and distinct, pubescence directed latero-caudad on either side of midline. Elytra with shallow impressions along the anterior two thirds of suture and along exterior half; punctation granulose and distinct. ♂: Aedeagus as in Fig. 1i. ♀: Spermatheca as in Fig. 1g. ***X. planifrons*** WOLL.

– Smaller species, 2.2–3.0 mm; colour of head and thorax darker, reddish brown to brown. Whole body with distinct microreticulation and clearly less dense pubescence, which is much longer and partly semi-erect on abdomen. Punctation sparse and fine, on pronotum and elytra barely visible. Head convex with sides slightly rounded, ± subparallel; antennae shorter with antennomeres 4 subquadrate and 5–7 transverse (Fig. 2f). Pronotum and elytra without impressions, the former with slightly convex posterior margin and pubescence directed laterally on either side of midline. ♂: Aedeagus as in Fig. 2i. ♀: Spermatheca as in Fig. 2g. ***X. convexifrons* spec. nov.**

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Addendum

After the original manuscript had gone to press, further Madeiran material of *Xenomma* became available:

X. planifrons WOLLASTON:
1♂, Rabacal, mixed stand of *Laurus* and *Erica,* 1000 m, 23. III. 1996; 2♂♂, 8♀♀, Ribeiro Frio, Laurisilva, 850 m, 24. III. 1996; 5♂♂, 4♀♀, Ribeira da Janela, Fanal, Laurisilva, 25. III. 1996; 12♂♂, 6♀♀, 8 larvae, Ribeira da Janela, Fanal, mixed stand of *Laurus* and *Erica,* 1000 m, 25. III. 1996; 5♂♂, 2♀♀, 1 larva, Ribeira da Janela, Fanal, mixed stand of *Laurus, Vaccinium* and *Erica,* 1300 m, 25. III. 1996; 1♂, 1♀, O Encumeada, below Pico do Jorge, stand of *Erica* with scattered *Laurus,* 1500 m, 26. III. 1996; 9♂♂, 10♀♀, 3 larvae, O Encumeada, below Pico do Jorge, stands of *Laurus, Vaccinium* and *Erica,* 1300 m, 26. III. 1996; 11♂♂, 11♀♀, 5 larvae, same locality, 30. III. 1996; 1♂, below Achada do Teixeira, stand of old *Erica,* 1350 m, 29. III. 1996; 1♀, Ribeira do Seixal, SW Seixal, Laurisilva, 550 m, 31. III. 1996 (all specimens leg. & coll. ASSING; note that a considerable proportion of the adult specimens were teneral).

Further paratypes of *X. convexifrons* spec. nov.:
1♂ [teneral], Rabacal, mixed stand of *Laurus* and *Erica,* 1000 m, 23. III. 1996; 2♂♂, O Encumeada, below Pico do Jorge, stands of *Laurus, Vaccinium* and *Erica,* 1300 m, 26. III. 1996; 1♂, same locality, stand of old *Laurus,* 30. III. 1996; 2♀♀, above Rabacal, mixed stand of *Erica* and *Vaccinium,* 1300 m, 27. III. 1996; 2♂♂, Pico Ruivo, northern slope below summit, *Erica* stand, 1850 m, 29. III. 1996; 1♂, 2 km NO Pico Ruivo, grass and fern vegetation in shade of rocks, 1700 m, 29. III. 1996; 1♂, 2♀♀, below Achada do Teixeira, stand of old *Erica,* 1350 m, 29. III. 1996 (all paratypes leg. & coll. ASSING; 1♂ and 1♀ deposited in the collection of the Staatliches Museum für Tierkunde Dresden).