Zeitschrift: Mitteilungen der Schweizerischen Entomologischen Gesellschaft = Bulletin de la Société Entomologique Suisse = Journal of the Swiss Entomological Society

Herausgeber: Schweizerische Entomologische Gesellschaft

Band: 85 (2012)

Heft: 3-4

Artikel: Looking for the type series of Scaptodrosohpila victoria (Diptera, Drosophilidae)

Autor: Vilela, Carlos R. / Bächli, Gerhard

DOI: https://doi.org/10.5169/seals-403051

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MITTEILUNGEN DER SCHWEIZERISCHEN ENTOMOLOGISCHEN GESELLSCHAFT
BULLETIN DE LA SOCIÉTÉ ENTOMOLOGIQUE SUISSE
85: 227–242, 2012

Looking for the type series of *Scaptodrosophila victoria* (Diptera, Drosophilidae)

CARLOS R. VILELA[1] & GERHARD BÄCHLI[2]

[1] Departamento de Genética e Biologia Evolutiva, Instituto de Biociências, Universidade de São Paulo, Caixa Postal 11461, São Paulo - SP, 05422-970, Brazil; crvilela@ib.usp.br
[2] Zoologisches Museum, Universität Zürich, Winterthurerstrasse 190, CH-8057, Zürich, Switzerland; baechli@zm.uzh.ch

During the quest for the type series of *Scaptodrosophila victoria* (Sturtevant, 1942) in Sturtevant's original private collection, now deposited at the United States National Museum of Natural History, twelve specimens previously identified as belonging to this species were analyzed. Among them, only a single female was collected at Andreas Canyon (California, USA, type locality) and although not labeled as a type specimen it could represent the sole extant fly of the assumed lost type series. This female and eleven additional specimens from other sites in the USA, such as Hesperia (California), Chamberlain (South Dakota) and Zion (Utah) were used to clarify the species identity and/or to prepare a redescription. A proposition to transfer *Scaptodrosophila victoria* from the currently monotypic *victoria* group to the *rufifrons* group is made. Illustrations of the male terminalia are also included.

Keywords: male terminalia, species identity, illustrations, *rufifrons* group, *victoria* group.

INTRODUCTION

Recently (Bächli *et al.* 2005), we have published a paper on the phylogenetic relationships between *Scaptodrosophila rufifrons* (Loew, 1873) and its sibling *S. lebanonensis* (Wheeler, 1949a), two species with apparently distinct ecological requirements. At least in Europe, the first one is considered a wild species, restricted to woodland areas, while the latter is found in rather domestic habitats, e.g. in wine cellars. In that paper, some taxonomic changes were proposed, as follows: the *S. victoria* group became monotypic because all but one of its species were removed, and three of them, described from the New World, namely *S. pattersoni* (Pipkin, 1956), *S. stonei* (Pipkin, 1956) and *S. galloi* (Lourenço & Mourão, 1992), were considered junior synonyms of *S. lebanonensis*. Nevertheless, the identity of *S. victoria* remained uncertain as its type material was assumed to be lost.

Suspecting that the original type series of *Scaptodrosophila victoria* (Sturtevant, 1942), from Andreas Canyon, near Palm Springs, California, USA, could be hidden among Sturtevant's private collection, which in 1970 was transferred to the National Museum of Natural History (NMNH), Washington, D.C., USA, we decided to analyze them. We received as a loan from the NMNH twelve flies of his original collection, all labelled (individually or collectively) as *Drosophila victoria*, supposedly representing all but one extant specimens belonging to this species that had been previously identified by A. H. Sturtevant.

Among them only a couple were collected in California, out of which just the female is simply labeled «Andreas Canyon, Calif.», without any collection date.

Although not labeled as a type specimen, we suppose the latter is the only extant specimen of the original type material, and we are now convinced that the remaining ones (the real number was not stated in the original description, but at least one male and one female were implied) are most probably lost, as we had previously assumed.

MATERIAL AND METHODS

Twelve specimens (4 ♂♂, 5 ♀♀ plus 3 specimens of undetermined sex) belonging to the A.H. Sturtevant collection, individually or collectively labelled as *Drosophila victoria* and currently housed at the NMNH, were analyzed. Label data attached to each specimen are cited in full with a slash indicating a label change; our own notes or interpretations are included in brackets. All males were dissected.

Microscope slides were prepared according to Wheeler & Kambysellis (1966) and Kaneshiro (1969). The abdominal sclerites, including the disarticulated terminalia, are preserved in microvials filled with glycerin and attached by the stopper to the pin of the respective specimen. Refer to Vilela & Bächli (2000) and Bächli *et al.* (2004) for further details.

Male terminalia were drawn using a camera lucida (1.8x) attachment on a compound microscope under a 40x objective.

Photomicrographs were taken of external and internal male terminalia in ventral and left lateral views under a 6.3x objective of a photomicroscope.

All figures of one plate were drawn to the same scale and all photographs were taken and enlarged to the same magnification, unless otherwise indicated. For measurements and indices see Vilela & Bächli (1990), for morphological terminology see Vilela & Bächli (2000) and Bächli *et al.* (2004).

TAXONOMY

Scaptodrosophila victoria (Sturtevant, 1942)

(Figs 1–3, 4 A, D–F, I–J, 5 A–D, 6 A–D, G–H)

Drosophila victoria Sturtevant, 1942: 33 [description]; Mainland 1942: 76 [ecology, distribution]; Patterson 1943: 60 [description, distribution, ecology]; Patterson & Wagner 1943: 218 [distribution]; Wharton 1943: 283 [chromosomes]; Patterson & Mainland 1944: 25 [distribution]; Wheeler 1947: 81 [mating]; Williams 1948: 9 [distribution]; Freire-Maia & Pavan 1949 : 20 [type species]; Hsu 1949: 91, 128 [description, illustration]; Patterson & Wheeler 1949: 210 ff. [distribution, affiliation]; Ward 1949: 70 [metaphase chromosomes]; Wheeler 1949a: 143 [relationships]; Wheeler 1949b: 170 [relationships]; Carson & Stalker 1950: 100 [ecology]; Burla 1951: 70 [type species]; Buzzati-Traverso 1951: 103 [crosses]; Carson 1951: 92 [distribution, ecology]; Carson & Stalker 1951: 318 [distribution, ecology]; da Cunha *et al.* 1951: 99 [ecology]; Buzzati-Traverso & Scossiroli 1952: 248 [crosses, status]; Patterson & Stone 1952: 10 [affiliation, distribution]; Spieth 1952: 407 [mating, behavior]; Williams & Miller 1952: 6 [distribution]; de Castro 1953: 365 [description]; Nater 1953: 449 [description]; Dudgeon 1954: 71 [ecology]; Stone *et al.* 1954: 273 [distribution]; Vargas 1954: 153 [distribution]; Bennett 1955: 56 [distribution]; Mather 1955: 554 [redescription]; Rasmussen 1955: 61 [biochemistry, phylogeny]; Townsend & Wheeler 1955: 58 [distribution]; Carson *et al.* 1956: 540 [distribution, ecology]; Cooper & Dobzhansky 1956: 528 [distribution]; Dobzhansky *et al.* 1956: 546 [ecology, distribution]; Frydenberg 1956: 266 [ecology]; Pipkin 1956: 254 [comparison]; Mather 1957: 219 [crosses]; Spencer 1957: 190 ff. [distribution, ecology]; Harrison 1959: 293 [comparison]; Wheeler 1960: 134 ff. [redescription, illustrations]; Pipkin 1961a: 890 [distribution]; Pipkin 1961b: 146 [relationships]; Heed *et al.* 1962: 73 [distribution, ecology]; Pipkin 1962: 1275 [relationships]; Strickberger 1962: 115 [key]; Throckmorton 1962a: 234, 235 [relationships]; Throckmorton 1962b: 424 [biochemistry]; Sokoloff 1964: 207 [distribution, ecology], Wheeler & Takada 1964: 185 [type species, comparison]; Wheeler 1965: 767 [type species, distribution]; Yalvac 1966: 81 [illustrations,

Fig. 1. *Scaptodrosophila victoria* (Sturtevant), from 8 miles southeast of Hesperia, California, USA, 17.V.1928. Epandrium, cerci, surstyli, and decasternum, posterior view.

larvae]; Rensing & Hardeland 1967: 1547 ff. [behavior]; Hubby & Throckmorton 1968: 195 [biochemistry]; Kambysellis 1968a: 1167 ff. [phylogeny]; Kambysellis 1968b: 72 ff. [distribution, eggs]; Cole 1970: 408 [ecology]; Cole & Streams 1970: 329 [ecology, distribution]; Entingh 1970: 56 ff. [distribution, phylogeny]; Gupta & Ray-Chaudhuri 1970: 62 [type species]; Sturtevant 1970: 51 [redescription]; Wheeler 1970: 79.25 [type species, distribution]; Berendes & Thijssen 1971: 345 [misidentification for *S. lebanonensis casteeli*]; Carson 1971: 7 [ecology]; Nei 1971: 389 ff. [phylogeny]; Wasserman *et al.* 1971: 122 [distribution]; Clayton & Wheeler 1975: 492 [metaphase chromosomes]; Okada 1977: 365 [type species]; Bock & Parsons 1978: 96 [type species]; Leroy 1978: 560 [mating behavior]; Moore *et al.* 1979: 163 [distribution, ecology]; Taylor & Condra 1979: 299 [distribution]; Val *et al.* 1981: 150 [ecology]; Wheeler 1981: 55, 58 [type species, distribution]; Bock 1982: 66 [type species]; Gupta & Panigrahy 1982: 632 [type species]; Shorrocks 1982: 408 [ecology]; Throckmorton 1982: 39 [illustrations]; Klaczko *et al.* 1983: 412 [distribution]; Seager & Jennings 1984: 183 [distribution, ecology]; Máca 1988: 10 [key];
Scaptodrosophila victoria: Markow 1996: 91 [mating behavior]; Prigent *et al.* 2003: 138 [ecology, polymorphism]; Brake & Bächli 2008: 213 [type locality].

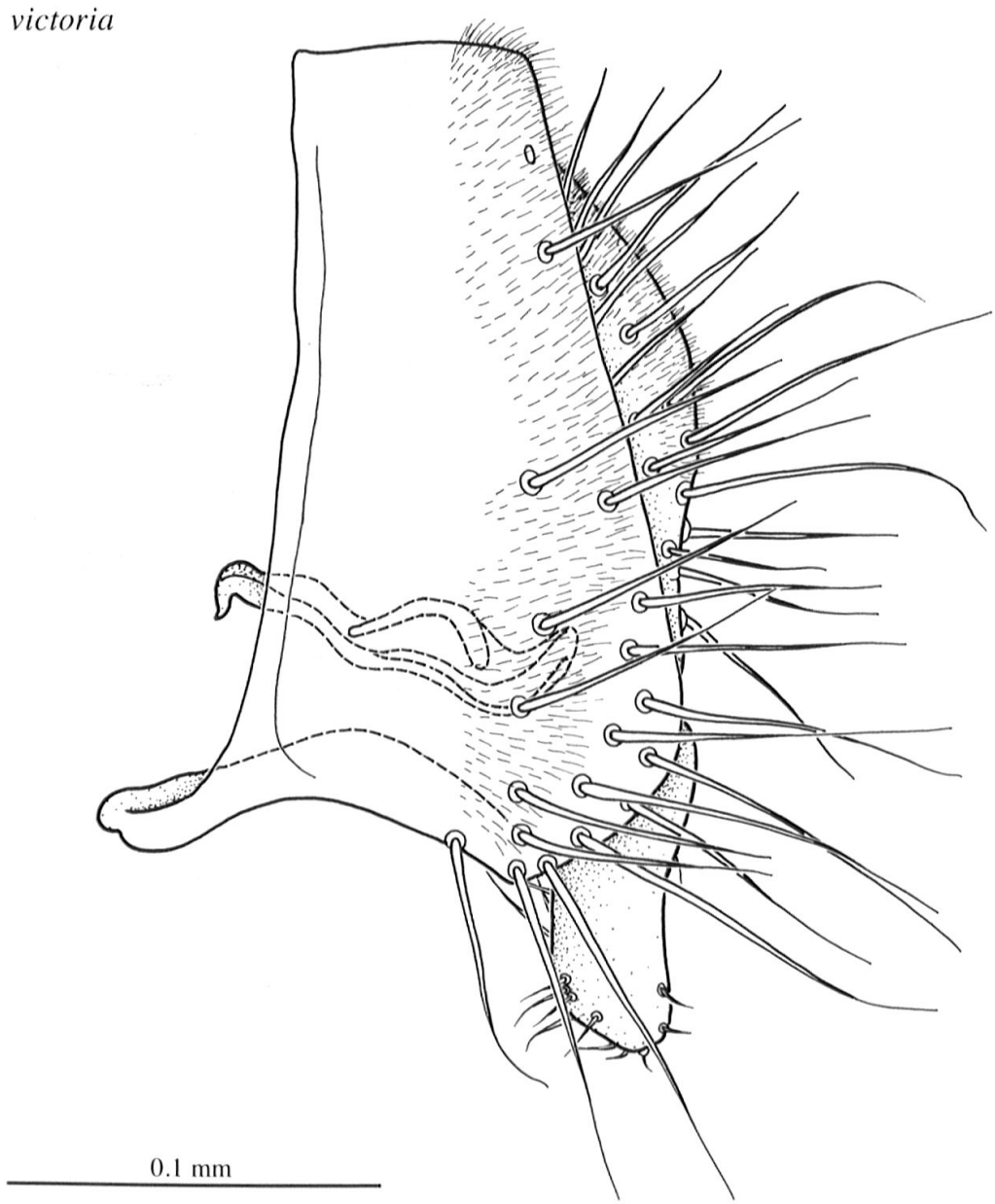

Fig. 2. *Scaptodrosophila victoria* (Sturtevant), from 8 miles southeast of Hesperia, California, USA, 17.V.1928. Epandrium, cercus, surstylus, and decasternum, left lateral view.

Diagnosis. Frons almost equal in length and width; all orbital setae in a row; orbital plates dark brownish; surstylus devoid of small anterodorsal process; internal male terminalia smaller than those of *S. lebanonensis* and *S. rufifrons*; sclerotized distal half of outer paraphysis spatulate (with almost straight parallel margins) and basally without the conspicuous «waist» (present in *Scaptodrosophila lebanonensis* and *S. rufifrons*) in lateral view; posterior margin of hypandrium straight in ventral view.

Material examined (4 ♂♂, 5 ♀♀ plus 3 specimens of undetermined sex). Two ♂♂, two ♀♀ and two specimens of undetermined sex, labelled: «Chamberlain S. Dakota Je [July?] 25.48 [collection day and year?] / A.H. Sturtevant Collection,

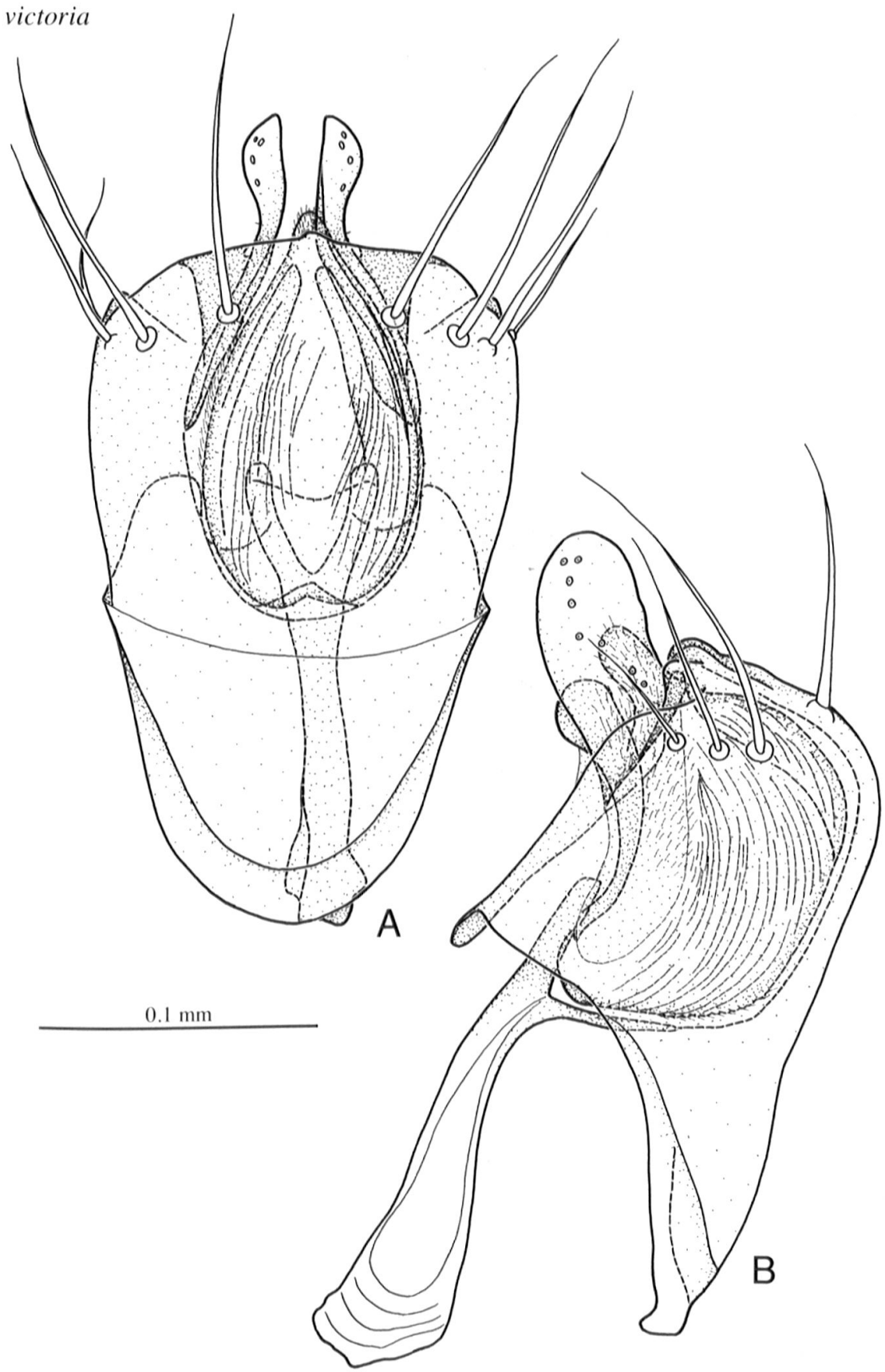

Fig. 3. *Scaptodrosophila victoria* (Sturtevant), from 8 miles southeast of Hesperia, California, USA, 17.V.1928. A, internal male terminalia, ventral view. B, idem, left lateral view.

1970 / Drosophila victoria Sttt. [just the first one in the series bears the last label]»; one ♂: «Zion [Zion National Park] Utah [drawing or an illegible handwriting] 7 / A.H. Sturtevant Collection, 1970»; one ♀ and one specimen of undetermined sex: «Wolf Wyo [Wyoming?] 5 [May?] '41 / A.H. Sturtevant Collection, 1970»; one ♂: «8 mi S.E. of Hisperiu [Hesperia] Cal. / V.17.28 / male symbol / Dros. Victoria»; one ♀: «Andreas Canyon, Calif. / A.H. Sturtevant Collection, 1970»; one ♀ + puparium: «Patagonia ARIZ. / Aug 23–26, 1953 WBHeed / reared from bleeding cottonwood [*Populus* spp.] / Drosophila victoria Sturtevant det. WWirth '53». All specimens identified as regards their sexes but one female (from Wolf) were used for measurements, and all the males were dissected.

Type locality. Andreas Canyon, near Palm Springs, California, USA.

Redescription. ♂ (averages and minimum and maximum values are given where appropriate).

Head. Frons dark reddish to brownish, microtrichose, frontal length 0.29 (0.27–0.31) mm; frontal index = 0.88 (0.85–0.89), top to bottom width ratio = 1.07 (0.89–1.22). Frontal triangle indistinct but laterally characterized by the rows of interfrontal setulae which are arranged in V-form; ocellar triangle prominent, blackish-brown, about 35–39 % of frontal length. Orbital plates blackish-brown, greyish microtrichose, about 71–76 % of frontal length. Orbital setae black, arranged almost in a line, or2 behind or1, distance of or3 to or1 = 40–67 % distance of or3 to vtm, or1 / or3 ratio = 0.88 (0.79–0.92), or2 / or1 ratio = 0.37 (0.36–0.40), postvertical setae convergent but not crossed, about 35 (33–38) %, ocellar setae = 82 (76–88) % of frontal length. Face dark brown. Carina large, bulbous, ventrally broadened. Cheek dark brown, index about 11 (9–14). Eye with dense, short pile, index = 1.31 (1.27–1.35). Antennae brown, length to width ratio of flagellomere 1 = 1.40. Arista with 3 dorsal, 2 ventral and about 7 very small inner branches, plus short terminal fork. Proboscis, clypeus and palpus brownish; palpus with about 3 to 5 ventral setae.

Thorax length 0.92 (0.90–0.95) mm. Scutum dark brownish, slightly shiny, postpronotum slightly paler, 6 rows of acrostichal setulae. h index = 1.09 (1.00–1.22). Transverse distance of dorsocentral setae 154–225 % of longitudinal distance; dc index = 0.56 (0.54–0.59). Prescutellar setae distinct, length about 50–62 % of anterior dorsocentral setae. Distance between apical scutellar setae about 112–143 % of that between apical and basal one, basal setae divergent; scut index = 0.94 (0.90–1.00). Pleura dark brown, subshiny, sterno index = 0.85 (0.83–0.89), median katepisternal seta about 31–64 % of the anterior one. Halter and legs brownish, fore femur thickened, about twice as thick as antennae, preapical setae on all tibiae, apical seta on mid tibia.

Wing hyaline, apically slightly roundish, diffusely brownish in some specimens, length 1.84 (1.75–1.96) mm, length to width ratio = 2.16 (2.08–2.24). Indices: C = 2.02 (1.93–2.14), ac = 2.87 (2.80–3.00), hb = 0.65 (0.60–0.71), 4C = 1.40 (1.36–1.45), 4v = 2.52 (2.40–2.70), 5x = 2.12 (1.60–2.50), M = 0.87 (0.80–0.91), prox. x = 0.88 (0.80–0.91).

Abdomen dark brownish, tergites in some specimens with a narrow, whitish apical margin, paler areas of different width may also occur along the basal third of each tergite.

Terminalia (Figs 1–3; 4 A, D–F, I, J; 5 A–D; 6 A–D, G, H). Epandrium ventroanteriorly expanded and pointed frontwards, ventrolaterally folded inwards (fold

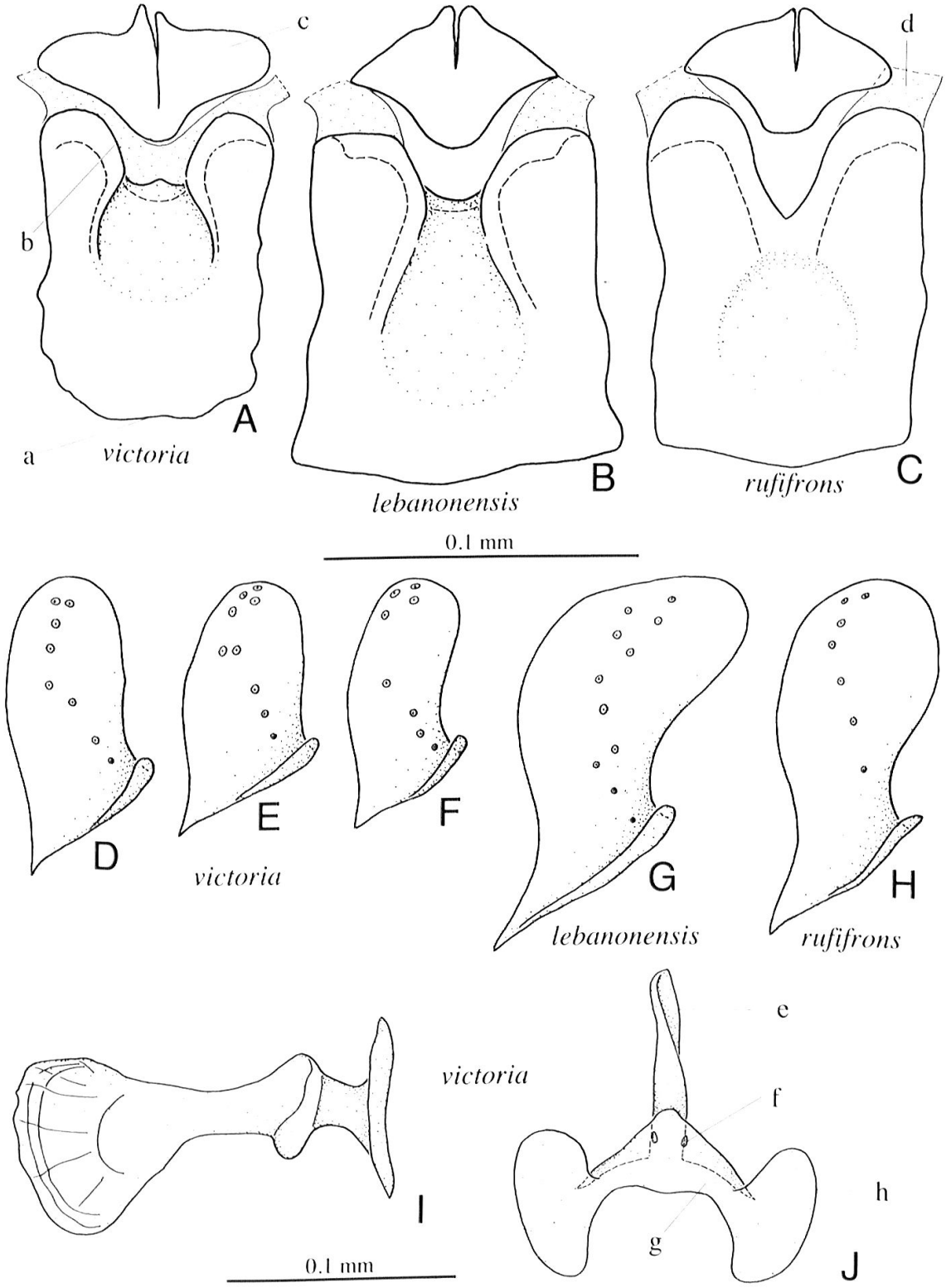

Fig. 4. Male terminalia: *Scaptodrosophila victoria* (A, D–F, I, J), *S. lebanonensis* (B, G), *S. rufifrons* (C, H). — A–C, decasternum and ventral margin of cerci, ventral view. D–H, left outer paraphyses (distal half), external lateral view. I, J, ejaculatory apodeme, left lateral view and posterior view, respectively. A, D, I, J, «Hesperia, California»; E, «Zion National Park, Utah»; F, «Chamberlain, South Dakota»; B, G, «Gandeza», Spain; C, H, «Visp, Valais», Switzerland. — a, anterior margin; b, posterior margin; c, cerci (fused at the very tip); d, membranous connection to surstylus; e, handle; f, right foramen; g, plate's basal region of right branch; h, plate's distal region of right branch.

oblique, triangular and apically linked to lateral margin of decasternum by membranous tissue), distally predominantly microtrichose, with ca. 14 long, straight lower setae, and ca. 6 upper setae; ventral lobe medially microtrichose, partially covering surstylus. Cercus narrow, anteriorly connected to epandrium by membranous tissue, dorsomedially microtrichose, ventral margin folded anterad, devoid of ventral lobe although inner corners of ventral margins are slightly pointed and fused to one another (Fig. 4 Ac). Surstylus slightly crescentic, not microtrichose, with a concave row of ca. 10 roundish at tip peglike prensisetae, ca. 19 inner and two sets of outer setae (ca. 2 larger, upper ones and three smaller, lower ones) and devoid of small anterodorsal process, which in *Scaptodrosophila lebanonensis* and *S. rufifrons* lies just anteriorly and above uppermost prensisetae. In *S. abdita* Papp, Racz & Bächli, 1999 the anterodorsal process (dorsal process of Papp *et al.* 1999: 108, fig. 6) is spurious and devoid of setae. Decasternum (Figs 4 A, 6H) rectangular, laterally membranous, obliquely positioned (Fig. 6 G), posterior margin (Fig. 4 Ab) medially notched, where it matches the expanded inner ventral margin of cerci (Fig. 4 Ac), anterior margin linked by membranous tissue medially to lateral margins of hypandrium, which are anteriorly positioned (Fig. 3 B). Hypandrium as long as epandrium, laterally expanded dorsad, embracing aedeagus and laterodistally linked by membranous tissue to apical region of inner paraphysis, anterior margin strongly convex and posterior margin almost straight in ventral view (Figs 3 A; 6 A–D); posterior hypandrial process and dorsal arch absent; gonopods completely fused to each other and to hypandrium but recognized because of their connection to outer paraphyses on laterodistal margin of hypandrium, distally bearing a row of ca. 8 (4 on each side) long, distally straight setae. Aedeagus completely hidden by hypandrium, mostly membranous, bag-shaped, globous when inverted, laterally flattened when everted, mostly rugose, most wrinkles ending as a tiny scale, ventrally slighly microtrichose, linked to aedeagal apodeme by membranous tissue, and flanked by two pairs of paraphyses. Inner paraphysis strongly sclerotized, bare, expanded and roundish at tip, laterally linked to aedeagus, distally linked to laterodistal margin of hypandrium, and anteriorly connected to dorsodistal branch of aedeagal apodeme by membranous tissue. Outer paraphysis well developed, distally sclerotized, proximally membranous (Fig. 3 A, B); distal half spatulate, but not expanded at tip as in *S. rufifrons*, in lateral view (Figs. 4 D–F; 5 A–D), anteriorly connected both to laterodistal margin of aedeagus and to median area of distal, protruded margin of hypandrium («gonopods») (Fig. 3 B) by membranous tissue; proximal membranous half laterally linked to dorsodistal branch of aedeagal apodeme by membranous tissue, adjacent to the connection of inner paraphysis (Fig. 3 B). Aedeagal apodeme longer than aedeagus, laterally flattened, distally bifurcate and slightly curved ventrad. Ventral rod anteroposteriorly flattened, longer than adjacent aedeagal apodeme width and shorter than ventroproximal margin of aedeagus (Fig. 3 B). Ejaculatory apodeme large, strongly sclerotized, conspicuously forked basally (Figs 4 I, J), branches conspicuously expanded at tip to form large, oval plates (Fig. 4 Jh); handle (Fig. 4 Je) laterally flattened and anteriorly expanded dorsoventrally in lateral view (Fig. 4 I). Throckmorton (1962a: 235), who made a detailed description of the ejaculatory apodeme of *S. victoria* and *S. pattersoni* (then in the genus *Drosophila*), stated:«it is of a distinctly derived type, seen nowhere in that genus».

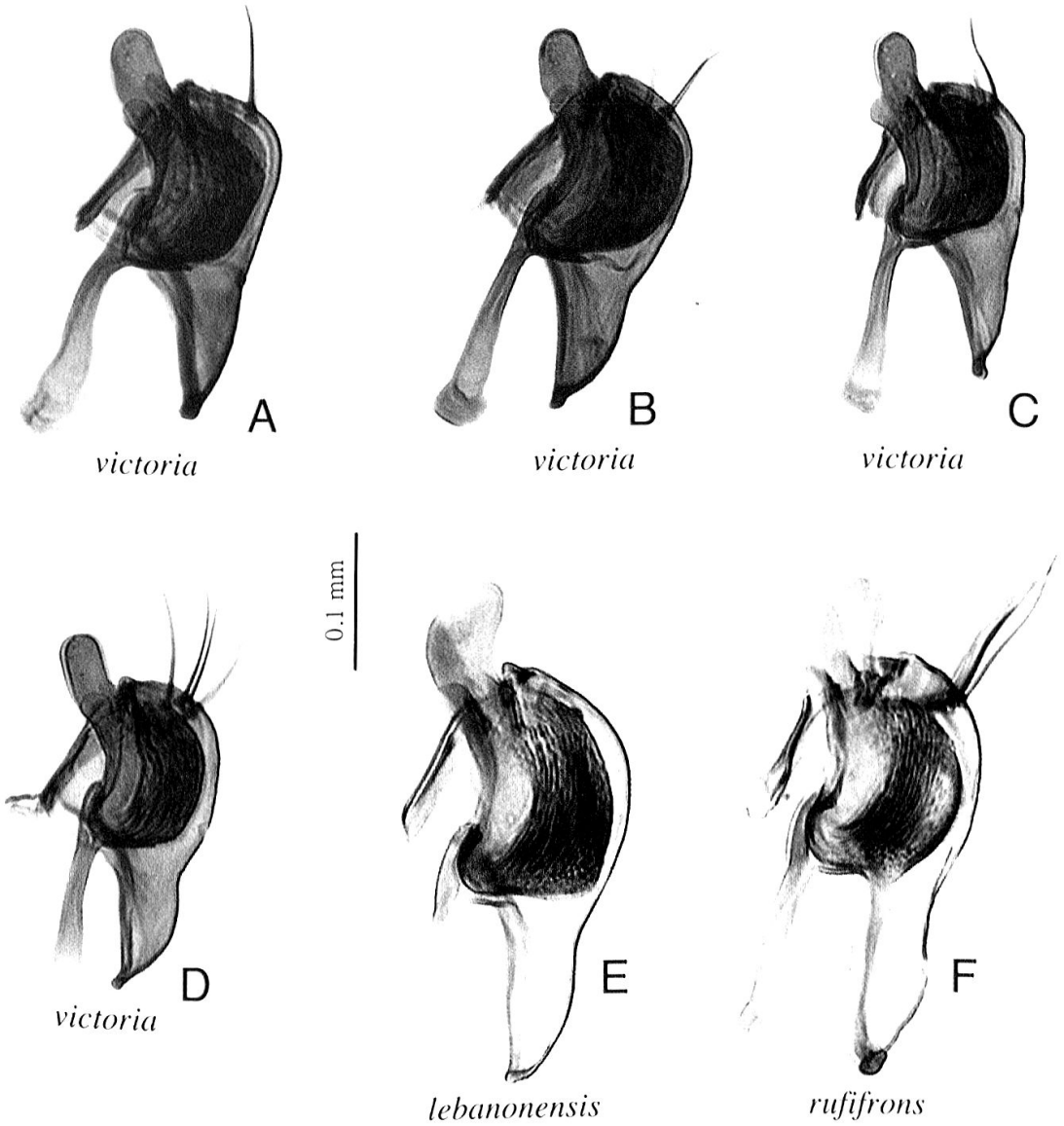

Fig. 5. Photomicrographs of male internal terminalia, left lateral view. — A–D, *Scaptodrosophila victoria*: A, «Hesperia, California»; B, «Zion National Park, Utah», USA; C, «Chamberlain, South Dakota», USA; D, idem; — E, *S. lebanonensis*, «Gandeza», Spain; — F, *S. rufifrons*, «Visp, Valais», Switzerland.

♀.

Differences to male: fore femur less thickened. Measurements: Frontal length 0.33 (0.30–0.37) mm; frontal index = 0.93 (0.90–1.00), top to bottom width ratio = 1.07 (1.00–1.14); ocellar triangle about 32–39 % of frontal length. Orbital plates about 68–83 % of frontal length. Distance of or3 to or1 = 57–71 % of or3 to vtm, or1 / or3 ratio = 0.90 (0.85–0.93), or2 /or1 ratio = 0.29 (0.23–0.36), postvertical setae = 40 (36–44) %, ocellar setae = 80 (72–89) % of frontal length; vibrissal index = 0.54 (0.50–0.58). Cheek index about 11 (8–16). Eye index = 1.29 (1.24–1.36). Thorax length 1.03 (0.96–1.11) mm. h index = 1.00 (0.90–1.10). Transverse distance of dorsocentral setae 191–200 % of longitudinal distance; dc index = 0.50 (0.48–0.55). Distance between apical scutellar setae about 100–133 % of that of apical to basal one; scut index = 0.91 (0.78–1.04), sterno index = 0.78 (0.76–0.80).

Wing length 1.96 (1.78–2.14) mm, length to width ratio = 2.13 (2.07–2.18). Indices: C = 1.88 (1.82–1.94), ac = 3.13 (3.00–3.40), hb = 0.63 (0.56–0.73), 4C = 1.52 (1.50–1.55), 4v = 2.45 (2.36–2.55), 5x = 2.08 (2.00–2.25), M = 0.88 (0.83–0.91), prox. x = 0.91 (082–1.00).

Terminalia. Not analyzed.

Distribution. Widespread but not very abundant in the southwestern United States, from South Dakota to California; Mexico, Puerto Rico. The occurrence of *Scaptodrosophila victoria* in the latter two countries, and also in some states of the USA, should be confirmed as the collection records may refer to its semicosmopolitan sibling species *S. lebanonensis*.

Biology. *S. victoria* has been found breeding in slime fluxes of various tree species (reviewed by Carson 1971), mainly cottonwood (*Populus* spp.), and it is supposed that such substrates form the basis of larval growth and adult attraction, based on similar behavior observed in its palearctic counterpart, *S. rufifrons*, which has been reported (Papp *et al.* 1999) to develop in oozing sap flows, mainly of oak (*Quercus* spp.).

Relationship. It belongs to the *Scaptodrosophila rufifrons* species group and is closely related to *S. abdita* from which it differs mainly in having smaller internal male terminalia, a hypandrium distally bearing a row of ca. 8 long (four on each side), straight setae (ca. 12 long [six on each side], distally sinuate setae in *S. abdita*) and a somewhat distally straight outer paraphysis (conspicuously curved in *S. abdita*) in lateral view.

Status of the victoria *and the* rufifrons *species groups*. A proposal is made that the taxon *victoria* species group should no longer be used, because all species originally included in it (except one) have been removed. In the present paper, *Scaptodrosophila victoria* is proposed to be transferred to the *Scaptodrosophila rufifrons* species group, which currently also includes the following six additional species, *S. abdita*, *S. brooksae* (Pipkin, 1961b), *S. ebonata* (Parshad & Duggal, 1967), *S. lebanonensis*, *S. rufifrons* and *S. throckmortoni* (Okada, 1973). It should be noted that the current taxonomic status of *S. brooksae* and *S. throckmortoni* was questioned by Bächli *et al.* (2005), who suspected that the first could be a synomym of *S. lebanonensis* and the latter a synonym of *S. rufifrons*. However, the following statement by Pipkin (1962: 1275): «Two related [related to *S. lebanonensis*] sap-feeding Nearctic species, *D. brooksae* and *D. victoria*, which are known to be averse to entering fruit-baited traps, are cultured with difficulty on laboratory medium», has raised the suspicion that *S. brooksae* could be a synonym of *S. victoria* instead. Besides, *S. brooksae* has 4 or 5 setae on one side of hypandrium (Pipkin, 1961b: 152), wheareas *S. victoria* has 4 and *S. lebanonensis* ca. 7 (Bächli *et al.* 2005: 361).

Comments. Although we strongly believe the type series of *Scaptodrosophila victoria* is lost, we decided not to propose a neotype for the species. It seems that the outer paraphysis shape, as seen in lateral view, is the best diagnostic character for identifying the species belonging to the *Scaptodrosophila rufifrons* species group. Based both on the present paper and Pipkin (1961b), the following modification in the diagnosis of the group (Bächli *et al.* 2004: 273) is needed to include *S. victoria* and *S. brooksae*. The statement «hypandrium with more than seven setae on each side» must be changed for «hypandrium with more than three setae on each side».

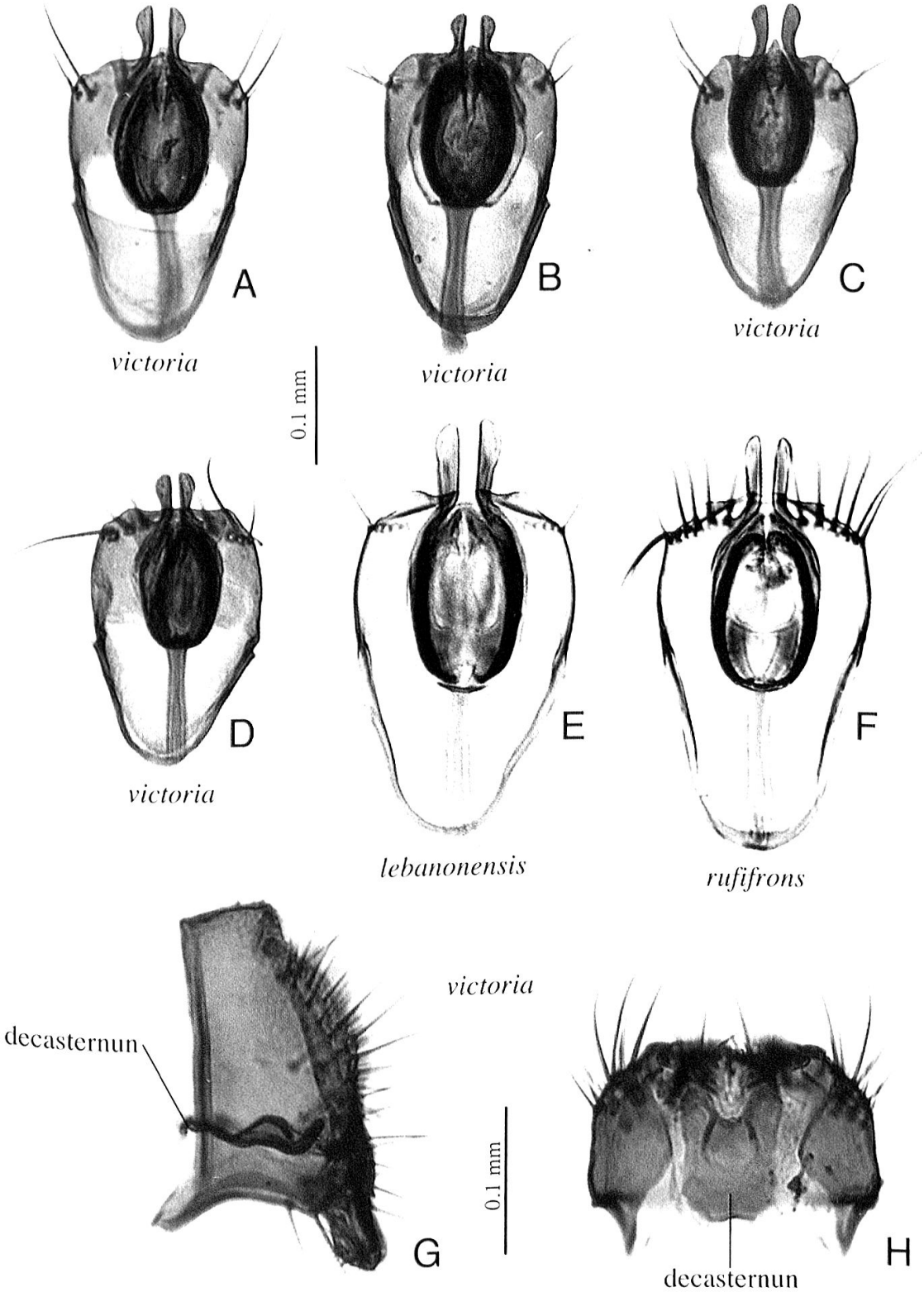

Fig. 6. Photomicrographs of male terminalia: A–F, internal terminalia, ventral view; G, external terminalia, left lateral view: H, idem, ventral view. — A–D, G, H, *Scaptodrosophila victoria*: A, «Hesperia, California»; B, «Zion National Park, Utah»; C, «Chamberlain, South Dakota»; D, idem. — E, *S. lebanonensis*, «Gandeza», Spain. — F, *S. rufifrons*, «Visp, Valais», Switzerland; G and H, same specimen as A.

While reanalyzing the terminalia of two previously dissected specimens of *Scaptodrosophila lebanonensis*, deposited in the collection of the ZMUZ (Zurich, Switzerland) and used to illustrate a paper we have published earlier (Bächli *et al.* 2005), aiming to prepare the comparative Figs 5 and 6 of the present paper, we have noticed that we made two mistakes and we take this opportunity to correct them. First, the specimen used to prepare the Fig. 3 on page 358 of that paper comes from a strain obtained from flies collected by L. Serra from Gandeza, Spain, and not from the strain 11010-0021.0 (Beirut, Lebanon), as wrongly stated on the figure caption. Second, the description of the terminalia on page 359 was based on this same specimen and not on a male from the strain 11010-0021.0, as wrongly stated. The specimen from the strain 11010-0021.0 was only used to make the molecular analyses, as stated on Tab. 1, on p. 352, and to obtain the photomicrograph depicted as Fig. 4A on page 360.

At last, we would like to state that our concept of *Scaptodrosophila rufifrons* is that of the male specimen collected in Visp, VS, Switzerland, and illustrated by Bächli *et al.* 2004: 276 and that of its lectotype collected at Kasan (Romania) and illustrated by Papp *et al.* 1999: 113 and not that of a male collected in Treviso, Veneto, Italy (Papp *et al.* 1999: 114) with the neotype of its junior synonym *S. nitens*, which we interpret as belonging to *S. lebanonensis*. We did not analyze the terminalia of the neotype of *S. rufifrons*, a male selected among 39 male specimens collected in Hungary by L. Papp between June 15 and 23, 1982 (Papp *et al.* 1999: 109), as ruled by opinion 1969 of the ICZN published in the Bulletin of Zoological Nomenclature 58 (1): 72.

ACKNOWLEDGMETS

We are indebted to Pierre Brauchli for helping with digital image processing and to Dr. Wayne N. Mathis, National Museum of Natural History, Washington D.C., USA, for kindly loaning the specimens included in the present study, and to Dr. Jan Máca for valuable corrections and comments on the first version of the manuscript.

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(received September 10, 2012; accepted October 22, 2012; printed December 31, 2012)