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Review of *Taophila*, a genus endemic to New Caledonia (Coleoptera : Chrysomelidae : Eumolpinae)

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Abstract

The monotypic genus *Taophila* Heller is further characterized, with a redescription and lectotype designation of its type species, *T. subsericea* Heller. This review includes two recently described species (*T. mantillerii* Jolivet *et al.* and *T. nigrans* Jolivet *et al.*), along with nine additional species proposed as new (*T. cancellata*, **n. sp.**, *T. corvi*, **n. sp.**, *T. deimos*, **n. sp.**, *T. hydrae*, **n. sp.**, *T. joliveti*, **n. sp.**, *T. mars*, **n. sp.**, *T. millei*, **n. sp.**, *T. sagittarii*, **n. sp.**, and *T. scorpii*, **n. sp.**). All species are keyed; many are illustrated.

Key words: Chrysomelidae, Eumolpinae, *Taophila*, review of species, New Caledonia

Introduction

Taophila is a monotypic genus restricted to New Caledonia. It is based on *T. subsericea* Heller from a syntype series of 2 specimens representing both sexes. This genus, until recently, had remained with its sole species. Then, Jolivet *et al.* (2007) added 2 rather distinctive species to the fauna: *T. mantillerii* and *T. nigrans*. Opposite sexes are here-described for the 2 preceding species. Nine additional new species are now added to the fauna.

Study materials, besides the holdings in Bishop Museum, were borrowed from various sources, listed below. The early material in Bishop Museum largely coincides with an active period of survey from the late 1950s to the early1980s by the late J. Linsley Gressitt and others. This was often accomplished with considerable assistance by ORSTOM-IRD entomologists (Noumea, New Caledonia) during that period. More recent activities into the present century by Pierre Jolivet of Paris, plus Christian Mille and others of IAC (La Foa, New Caledonia) have added greatly to the collection base.

Collections: BPBM—Bishop Museum, Honolulu, Hawaii, USA; IAC—Institut Agronomique néo-Calédonien, La Foa, New Caledonia; ISNB—Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium; JOLIVET—Collection Pierre Jolivet, Paris, France; MNHN—Muséum National d'Histoire Naturelle, Paris, France; NMNH—US National Museum of Natural History, Washington, DC, USA; ONNC—ORSTOM-IRD, Noumea, New Caledonia; SMTD—Staatliches Museum für Tierkunde, Dresden, Germany.

Genitalic preparations were made of all treated species. Measurements of smaller body parts are reported as cmm = 1/100 mm. Antennomere lengths/breaths (in cmm) are given only for *Taophila subsericea* Heller, the type species of the genus. Additionally, metaleg samples of most species were submitted for DNA analysis via Daniel Rubinoff, University of Hawaii, Honolulu but this report must predate any findings.

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Taxonomy

Taophila Heller

Taophila Heller, 1916. Sarasin & Roux, Nova Caledonia, Zoologie 2(3):305–306.

Eumolpinae. Characterized by *Taophila subsericea* Heller. Meso- and metatibia entire along preapex; claws appendiculate; prothorax with anterior margin of proepisternum straight, anterior margin of prosternum not excavated, and basal mouthparts not hidden when head is in repose; pygidial groove well-impressed. Allied to *Dematochroma* Baly but prothorax narrowed to base and appearing constricted relative to basal elytral breadth; elytra together usually wedge-shaped, broadest basally and gradually narrowed to preapex; elytral puncturation usually mixed, often irregular or confused on inner basal disc and then arranged in ± regular rows apically and laterally. Sexes generally dimorphic: males usually smaller with a more uniform sculpture on elytral disc and with abdominal ventrites less modified. Abdominal ventrites in females usually with ventrite 1 greatly enlarged, shield-like or broadly flattened to concave or subglobose basally and then bent apically to conform with following ventrites; ventrite 1 sometimes with paired tubercles on posterior margin; ventrite 2 of more normal appearance but sometimes with paired tubercles on posterior margin.

Type species: *Taophila subsericea* Heller

Taophila subsericea Heller

Fig.1a, 3i, 4c

Taophila subsericea Heller. (1916) *Nova Caledonia, Zoologie*, 2(3):306.

Redescription. Female (Lectotype). Head and pronotum medium orange-fulvous; elytron yellow-testaceous; ventral surfaces as in pronotum; antenna with segments 1–7 yellow-testaceous to orange-fulvous, 8–9 dark castaneous, 10–11 orange-fulvous; legs yellow-testaceous. Dorsum with slender pale pubescence on vertex and pronotal disc; setae ± discretely grouped on elytron, with setal groups on elytral preapex and side on apical half.

Head: frontal surfaces smooth-shining, gently and transversely raised across interantennal region; frons set with small deep punctures, these mostly a little smaller than interspaces; central vertex with an indication of median impunctate line; vertex otherwise with small deep punctures often larger than interspaces, these becoming slightly elongated and closer on sides above; eye moderately small, ovate and protruding, the greatest eye diameter nearly 0.55 x as broad as interocular space. Antenna extending to about middle of elytron; apical 5 segments gradually heavier; pedicel exceeding mid-length of segment 3; relative antennal length/breadths (in 1/100ths mm or cmm): 16/10 : 10/7 : 14/6 : 16/6 : 18/6 : 15/7 : 19/8 : 18/9 : 18/9 : 19/10 : 26/10. Prothorax nearly 0.85 x as long as broad and becoming much narrower than elytra across their respective bases; side weakly convex at greatest breadth slightly before middle, then straight to anterior angle and also straight to prebasal constriction; disc convex and closely punctulate; central punctures somewhat elongated and commonly 3 x as large as interspaces and about 1/3 as large as basal elytral punctures; interspaces slightly swollen, shining alutaceous. Scutellum subpentagonal-rounded, surface microgranulate. Elytron subtriangular-elongate; surface flatter medially with inner basal quadrant of disc confusedly punctate with interspaces duller subgranulate; punctures otherwise in regular rows on preapex and laterally with interstices smooth-shining, these becoming swollen to ± costate laterally in places; elytron steeply declivitous at extreme apex. Ventral surfaces: propleuron smooth-alutaceous and set with large deep punctures, commonly 2–3 x as large as interspaces; metasternum similarly deeply punctured; abdominal ventrite 1 enlarged, shield-like, gently convex in lateral view, then stepped down to the following ventrites, surface alutaceous-punctulate, punctures commonly 1 x as large as interspaces; intercoxal piece of ventrite 1 (alternate female) moderately broad at 13:69 the breadth of ventrite. Legs (alternate female): metafemur gently swollen to middle; metatibia slightly sinuate, apical area flattened and gradually expanded. Genitalia

(alternate female): spermatheca with receptacle slender, v-shaped. Measurements: Body length 3.3 mm; body breadth 1.5 mm; head breadth 84 cmm; interantennal space 28 cmm; interocular space 52 cmm; eye (maximum diameter) 28 cmm; gena ca. 14 cmm; pronotal length 96 cmm; pronotal breadth 116 cmm; elytral length 2.36 mm.

Male (Allolectotype). Differs from female due to smoother dorsal surfaces and more distant puncturation on pronotum and elytron; elytron also with punctures more organized in irregular rows on medial part of disc and lacking costae laterally; antenna with apical 5 segments more strongly broadened than in female; abdomen: ventrite 1 normally in-line with others (lateral view). Genitalia (alternate male): aedeagal apex as in Fig. 3i. Measurements: Body length 3.0 mm; body breadth 1.4 mm; head breath 80 cmm; interantennal space 28 cmm; interocular space 46 cmm; eye 28 cmm; antenna length/breadth (in cmm): 21/8 : 10/7 : 11/6 : 18/6 : 19/7 : 16/7 : 20/10 : 20/10 : 18/9 : 18/11 : 25/11; pronotal length 88 cmm; pronotal breadth 102 cmm; elytral length 2.0 mm.

Variation. Sexes dimorphic. Males have the elytral discal punctures tending more regular internally over smooth-shining interspaces, while females have punctures of the inner basal quadrant of disc confused (note comments below). Four females from Mt Aoupinie/Ponerihouen have the dorsum largely lustrous dark fuscous on smooth-shining surfaces, but the puncturation of the pronotal disc smaller and tending to run in ± longitudinal series between finely raised interspaces; elytron additionally marked with paler orangish discally as a strip running obliquely from humerus to preapex; elytral sculpture of the inner basal quadrant pustulate and smooth-shining with punctures small and obscure instead of normally moderately large and distinct over flattened granulate interspaces; elytral apex appearing broader being accentuated by a projecting tuberculate extremity of an inner interstice overriding actual margin in dorsal view.

Material examined. NEW CALEDONIA: Lectotype ♀, Tao, 24.vi.1911 (SMTD); Allolectotype ♂, same data (SMTD); mountain W of Hovailou, 5.ii.1962, N.L.H. Krauss (1); 10 km S of Pouebo, 480 m, 22.i.1964, R. Straatman (1); Mt Ignambi, 900–1100 m, 4.ii.1964, sweeping, Straatman (9); W of Ponerihouen, 29–30.vii.1971, J.L. Gressitt (10); same data, on ferns (3); 1 same data, Malaise trap (1); same data but 29–31.vii.1971 on palm (1); same data but 30.vii.1971 "? sacch"; same data but 31.vii.1971, J. Holloway (1); Mt Aopinie, W of Ponerihouen, 550 m, 30–31.vii.1971, ex ferns Gressitt (24, 1 SMTD); Ponderihouen/Aoupinie, S21 08.946' E165 19.407', 389 m, 25–26/04/2006, C. Mille & J. Brinon (1 IAC); Aoupinie, 4/04/2008, Mille (1 Jolivet). Undesignated examples in BPBM with parts of series for deposit in IAC, ISNB, Jolivet, MNHN, NMNH, ONNC, and SMTD.

Plant associates. Many from ferns; 1 record from a palm; 1 record from a grass (" ? sacch").

Remarks. A lectotype designation is necessary for this species to stabilize the taxonomy of the species, as neither the female nor the male were clearly designated in the original description; the female is the one hereby selected as lectotype; it is clearly described in the text; also a label attached is marked "typus." The male, not mentioned in the text, is labelled "cotypus" and is not to be confused with the female as it is the smaller specimen.

This is a smaller, bicolorous species with generally dark prothorax and paler elytra, the latter often with fuscous markings. It is somewhat similar in color scheme and size to *T. scorpii*, **n. sp.** from which it differs by lacking a conspicuous setose pubescence on pronotum.

***Taophila mantillerii* Jolivet, Verma, and Mille**

Fig. 1b, 3b, 4b

Taophila mantillerii Jolivet *et al.* (2007) *Revue française d'Entomologie* (N.S.), 29(1):43–44, fig. 26 (aedeagus).

A larger orange-fulvous species with brassy lustre; described from male but sexes rather similar dorsally, with surfaces smooth-granulate and generally punctate, the pronotal punctures much smaller and closer than the elytral ones. Vestiture inconspicuous except for fringing setae along elytral apex. Legs very slender, of weak appearance.

Female (nov.). Similar to male. Abdominal ventrite 1 broadly concave and densely setose. Spermatheca as figured. Measurements: Body length 4.6 mm; body breadth 2.2 mm; head breadth 120 cmm; interantennal space 44 cmm; interocular space 78 cmm; eye 42 cmm; gena 22 cmm; pronotal length 120 cmm; pronotal breadth140 cmm; elytral length 3.6 mm.

Variation. Elytral coloration sometimes with a fuscescent darker streak extending longitudinally from the base.

Material examined. NEW CALEDONIA Col des Roussettes, 450–550 m, 4–6.ii.1963, C.M. Yoshimoto (5 ♀, 1 ♂); same data but 450–500 m, 5–6.ii.1963 (2 ♀, 2 ♂); same loc., Piste Est, 600 m, 24.xi.2002, beating *Cyathea*, A. Mantilleri & E.-A. Legun (1 ♂ paratype, JOLVET); Plateau de Dogny, 1.ii.1963, N.L.H. Krauss (3 ♀, 2 ♂); same loc., 700 m, 1.ii.1963, Yoshimoto (1 ♀, 2 ♂); Col d'Amieu, 500–600 m, 28.xii.1976, J.L. Gressitt (1 ♀); Sarramea/Col d'Amieu, 2–25/11/05, S. Cazeres, C. Mille, J.P. Kataoui [Red label: Jolivet 2006] (1 ♀ IAC); 9.2 km NE of Col d'Amieu, slopes of Mt Rembai, 375–600 m, 23.ix.1979, ferns, G.A. Samuelson (♀ **nov.** MNHN); same data (2 ♂); same data but 375–675 m, W.C. Gagne, G.M. Nishida & Samuelson (1 ♀, 3 ♂); Ponerihouen/Aoupinie, S21.1038 E165.1707, 945 m, 11/10/06, Cazeres (49 mixed sexes, IAC); same data but Mille (42 mixed sexes, IAC). Parts of IAC Ponerihouen/Aoupinie series for deposit in BPBM, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Plant associates. Treeferns: *Cyathea*, also ferns at mid-montane elevations.

Remarks. Unique in body form among congeners, the body breadth distinctively expanded across the mid-length of the elytra. The build of abdominal ventrite 1 in the female is distinctive, as is the c-shape of the spermatheca. In the male, the termination of the aedeagus is bifid and unique in the genus. Both sexes treated.

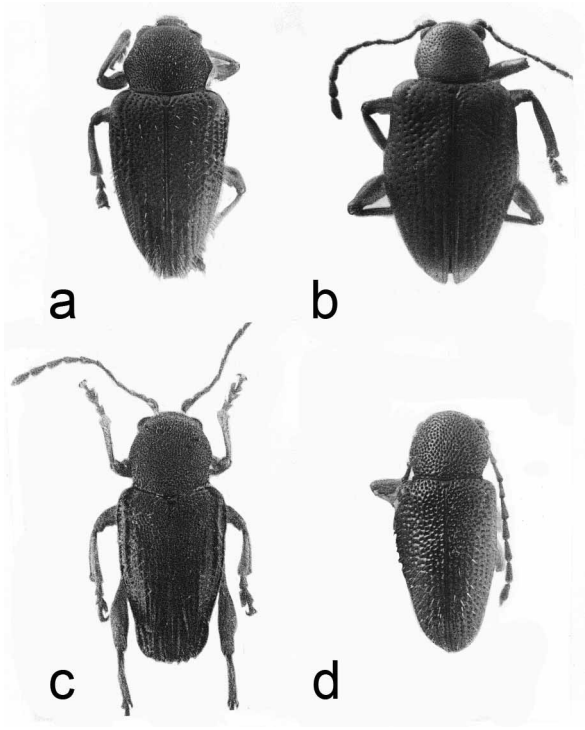

PLATE 1. Dorsal view—*Taophila*, named species. a. *subsericea* Heller ♀—body length = 3.55 mm; b. *mantillerii* Jolivet *et al.* ♂—body length = 4.5 mm; c. *nigrans* Jolivet *et al.* ♀—body length = 3.8 mm; . *nigrans* Jolivet *et al.* ♂—body length = 3.05 mm.

***Taophila nigrans* Jolivet, Verma, and Mille**
Fig. 1c, 1d, 3c, 4g

Taophila nigrans Jolivet *et al.* (2007) *Revue française d'Entomologie* (N.S.), 29(1):43–44, fig. 25 (spermatheca).

A small to moderate-sized, dark orangish to reddish-castaneous species; described from female. Female: dorsal surfaces dull granulate with pronotal punctures very close and deep; elytron duller on inner disc with moderately deep punctures, discal side and apex with interspaces somewhat smoother; elytron additionally with prominent costae along side and preapex, the side sinuately narrowed to costate apex (in dorsal view). Dorsal vestiture setose and erect. Abdominal ventrite 1 (in oblique ventral view) convexly inclined to metasternum on basal ¾ and rather sharply bent to plane of remaining ventrites on apical ¼.

Male (nov.). Unlike female in lacking elytral costae and having a smoother, shinier and more uniform punctate surface; elytral side rather evenly narrowed to rounded preapex. Dorsal coloration orange-fulvous but marked with dark fuscous on inner basal quadrant of elytral disc, this mark appearing as a long triangle over both elytra. Dorsal surfaces lustrous and rather closely and deeply punctate. Abdominal ventrite 1 with surface uniformly and gradually inclined to metasternum. Genitalia: aedeagus extremely long and slender before briefly expanded apex; apex as in Fig. 3c. Measurements: Body length 2.9 mm; body breadth 1.25 mm; head breadth 86 cmm; interantennal space 28 cmm; interocular space 50 cmm; eye 26 cmm; gena 14 cmm; pronotal length 92 cmm; pronotal breadth 100 cmm; elytral length 2.2 mm.

Variation. Males: about 60% have the dorsum rather evenly orange-fulvous without strong fuscescent markings on the inner basal part of elytral disc.

Material examined. NEW CALEDONIA. Females: Col des Roussettes, 600 m, 24.xi.2002, beating *Cyathea*, A. Mantilleri & E.-A. Leguin (1 paratype, JOLIVET); W of Ponerihouen, 550 m, 29–30.vii.1971, ferns, J.L. Gressitt (1 BPBM); IAC: Ponerihouen/Aoupinie, S21.1038 E165.1707, 945 m, beating, 11/10/06, C. Mille (9) [incl. 2 with Jolivet det. 2006]; same data but S. Cazeres (16, some with Jolivet det. label); same loc., S 21˚10.944’ E165˚17.355’, 855 m, 12/10/06, Cazeres (1); Sarramea/Col d’Amieu, 2–25/11/05. Cazeres, Mille, Kataoui (1); same loc., 489 m, S21˚ 34.694’ E165˚46.278’, 10/10/06 Kataoui (1).

Males: Ponerihouen/Aoupinie, S21.1038 E165.1707, 945 m, beating, 11/10/06, Cazeres (♂ **nov**. MNHN); W of Ponerihouen, 550 m, 29–30.vii.1971, ferns, J.L. Gressitt (1 BPBM); IAC: Ponerihouen/Aoupinie, S21.1038 E165.1707, 945 m, beating, 11/10/06, Cazeres (26 IAC); same data but Mille (19); Sarramea/Col d’Amieu, beating, 2–25/11/05, Cazeres, Mille, Kataoui (1); same loc., 489 m, S21˚34.694’ E165˚46.278’, beating, 04/10/06, Cazeres (1); same loc., 489 m, S21˚34.694’ E165˚46.278’, beating, 10/10/06, Kataoui (1); same loc., 609 m, S21˚34.914’ E165˚48.376’, beating, 04/10/06, Kataoui (1); Ponerihouen/Aoupinie, S21.1038 E165.1707, 945 m, beating, 11/10/06, Cazeres (1 Jolivet); same data but Mille (1); Sarramea/Col d’Amieu, 2–25/11/05, Cazeres, Mille, Kataoui (1); same data, except 2–23/12/05 (1); same loc., 489 m, S21˚ 34.694’ E165˚46.278’, beating, 10/10/06, Kataoui (1). Parts of longer IAC series for deposit in BPBM, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Remarks. This species differs from congeners by having the metafemur sub-clavate to clavate with metatibia correspondingly sinuate. The female is distinctive with the arrangement of elytral costae; the male has a shape resembling *T. sagittarii*, **n. sp.** but differs in having heavier, deeper punctures dorsally.

Taophila cancellata Samuelson, new species

Fig. 2b, 2c, 3f, 4d

Description. Female (Holotype). Body surfaces dull-shagreened dark pitchy castaneous but elytron smoother and brighter with violaceous lustre; antenna largely dark with contrasting testaceous segments 1+2 and 10+11. Surfaces essentially glabrous except conspicuous adpressed setae on elytral preapex-apex. Legs largely testaceous, tibiae tinged with fuscous.

Head: frontal surfaces evenly contiguous, frons flattened merging with gently convex vertex; these surfaces appearing dull-shagreened (actually with fine diametric granulatons at 50 x); frons additionally with sparse deep punctures mostly smaller than interspaces; vertex largely impunctate on disc but becoming punctate above, surface with deep median sulcus; eye prominent, maximum diameter about 0.6 x as broad as interocular space; gena about 0.4 x as deep as eye. Antenna attaining mid-elytron; pedicel ca 7/12 as long as segment 3; flagellar segments slender with last 5 distinctly heavier. Prothorax 0.72 x as long as broad; side

convex with stronger curvature along anterior half; posterior angle produced; basal margin beaded; discal surface evenly convex with small elliptical deep punctures commonly smaller than interspaces. Elytron rather evenly tapered to preapex and thence to extended "beaked" extremity; disc with basal 3/5 confusedly punctate, thence becoming regular with swollen interstices; humerus weakly produced but with 2 sharp post-humeral costae extending into apical 1/3. Ventral surfaces: propleuron smooth-shagreened, impunctate; metasternum as preceding; abdominal ventrites obscurely punctate but otherwise shagreened; ventrites in lateral profile gradually ascending to thorax; ventrite 1 with intercoxal piece narrow to basal breadth (14:107); ventrite 1 not quite as long as 4 remaining ones; last ventrite briefly and convexly emarginate at extremity flanked with finely serrate lateral margins. Legs: metafemur ± slender, incrassate, evenly thickened to middle; metatibia slender, apex briefly and slightly expanded. Genitalia: spermatheca with receptacle elongate-narrow and gently curved. Measurements: Body length 5.2 mm; body breadth 2.4 mm; head breadth 144 cmm; interantennal space 44 cmm; interocular space 80 cmm; eye 48 cmm; gena 20 cmm; pronotal length 148 cmm; pronotal breadth 206 cmm; elytral length 4.3 mm; abdominal ventrites: 58:15:13:13:20.

Male (Allotype). Paler than female with body surfaces largely orange-fulvous but elytra slightly darker subcastaneous, dorsal surfaces additionally with a slight brassy lustre; antenna yellow- to orange-testaceous with intermediate segments darker; legs yellow-testaceous. Body surfaces not shagreened as in female but head and prothorax possessing a fine diametric microsculpture, the elytra nearly smooth; pronotum additionally with distinct punctures; elytron with punctures confused on inner basal quadrant and becoming striate apically and laterally. Abdominal ventrite 5 with small median depression, sides dentate before briefly emarginate apex. Genitalia: aedeagal apex as in Fig. 3f. Measurements: Body length 3.9 mm, body breadth 1.7 mm; head breadth 126 cmm; interantennal space 27 cmm; interocular space 62 cmm; eye 50 cmm; gena 20 cmm; pronotal length 120 cmm; pronotal breadth 162 cmm; elytral length 2.85 mm.

Holotype ♀ (MNHN). NEW CALEDONIA. Sarramea/Col d'Amieu, S21.34694 E165.46278, 489 m, 2/12/06, beating, R.M'Bouen; Allotype ♂ Sarramea/Col d'Amieu, 2–25/11/2005, beating, S. Cazeres, C. Mille, J.P. Kataoui (MNHN).

Female paratypes: same data as holotype (1 BPBM, 1 ICA, 2 Jolivet); Sarramea/Col d'Amieu: 6/11/2004, beating, Mille (1); 17/10/2005, Mille & J. Brinon (1 Jolivet); 2–25/11/2005, beating, Cazeres, Mille & Kataoui (1 Jolivet); 10/05/2006, beating, Brinon (1); Malaise trap, 8/02/06 to 3/03/2006, S21˚34.903' E165˚48.376', 611 m, ICA personnel (1 Jolivet); Reserve du Col d'Amieu, S21˚35' 33.97" E165˚48'14.39", 362 m, 23/11/2007, beating various trees, Cazeres (1); La Foa/SRFP, S21.73393 E165.89605, 23 m, 16/11/2004, on *S. cumini*, Jamelonier, Cazeres (1); [La Foa] SRFP "Perroquet" S21.73393 E165.89605, 23 m, 4/12/2004, "Acajou" *Semecarpus atra*, Cazeres (1); Farino 22/Barbou L., S21.61198 E165.70272, 362 m, 29/11/2005, Brinon coll. (1); Kanala, *Dumbea cancellata* Fvl., coll. et det. A. Fauvel (1 ISNB).

Male paratypes: Sarramea, S21.66941 E165.8172, 3 m, 22/10/2004, beating *Syzygium jambos*, Brinon & Kataoui (6); Sarramea/Col d'Amieu, 2–25/11/2005, beating, Cazeres, Mille, Kataoui (9); same area but S21˚34.903' E165˚46.376', 611 m, Malaise trap 8/02/06 to 3/03/2006, various personnel (1); same area but S21.63411 E165.89527, 465 m, 20/02/2006, beating, Mille & Kataoui (1); same area but S21.34694 E165.46278, 489 m, 2/12/2006, M'Bouen (1); Reserve du Col d'Amieu, S21˚35'33.97" E165˚48'14.39", 362 m, 23/11/2007, beating various trees, Cazeres (2); [La Foa] SRFP "Perroquet" S21.73393 E165.89605, 23 m, 4/12/2004, "Acajou" *Semecarpus atra*, Cazeres (1). Undesignated paratypes from ICA with parts of series for deposit in BPBM, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Remarks. This is one of the larger *Taophila*, ranging up to about 5.5 mm; it exhibits pronounced sexual dimorphism: the female dark and shagreened, the male paler in color and much smoother in body form and sculpture. Differs from *T. mars*, **n. sp.** in lacking teeth at the side of the prothorax and the nearly glabrous dorsum. The species commemorates Fauvel's MS name, *cancellata*, perpetuating the label name attached to a single fragmented specimen from the ISNB Fauvel collection. The name is derived from the Latin *cancellus*, meaning lattice or screen, referring to the shagreened fine sculpture of the body surfaces in the female.

***Taophila corvi* Samuelson, new species**
Fig. 2d, 3g, 4e

Description. Female (Holotype). Head (labrum pale) and prothorax dark smooth-shining castaneous; elytron orange-testaceous, surface duller on inner basal disc, otherwise smoother; ventral body surfaces and legs orange-testaceous. Antenna largely fuscous but 1–3 and 11 testaceous. Dorsal vestiture inconspicuous on pronotum but conspicuously silvery setose on elytral preapex-apex and apically on elytral sides.

Head: front gradually and transversally raised across interantennal space, surface smooth-shining with small deep punctures commonly 0.5 x as large as interspaces; vertex similarly punctate over smooth interspaces but central disc more impunctate and barely suggesting a median line; eye about 0.55 x as broad as interocular space; gena 0.4 x as deep as eye. Antenna extending to about mid-elytron, pedicel and 3 subequal in length; flagellar segments moderately slender with apical 5 distinctly heavier. Prothorax nearly 0.9 x as long as broad, broadest before middle with side convex from middle anterior angle and sinuately narrowed basally to projecting posterior angle; basal bead distinct preceded by a fine antimarginal sulcus; pronotal disc evenly convex, smooth-shining, with small deep punctures commonly 1 x as large as interspaces. Elytron rather slender, tapering from postbasal area nearly to apex; apex briefly but steeply declivitous and straight (not beaked) in lateral view; humerus moderately swollen followed by a heavy costa disappearing near preapex; disc confusedly and deeply punctate on inner basal quadrant, the surface with dull subgranulate sculpture; remaining inner disc more sparsely punctate with interspaces smooth and feebly swollen; puncture rows regular at side. Ventral surfaces: propleuron smooth with deep punctures mostly smaller than interspaces; metasternum subgranulate with larger punctures laterally, the surface becoming smoother with smaller punctures medially; abdominal ventrite 1 somewhat produced and shield-like, surface granulate-punctulate and finely pubescent; intercoxal piece of ventrite 1 about 7:64 as broad as segment (alternate dissected specimen). Legs: metafemur smooth, indurate; metatibia nearly straight. Genitalia: spermatheca with receptacle slender, v-shaped. Measurements: Body length 3.5 mm; body breadth 1.45 mm; head breadth 87 cmm; interantennal space 30 cmm; interocular space 54 cmm; eye 30 cmm; gena 12 cmm; pronotal length 98 cmm; pronotal breadth 112 cmm; elytral length 2.65 mm.

Male (Allotype). Similar to female in coloration and vestiture but elytron generally smooth-shining on inner discal quadrant instead of granulate. Antenna extending past mid-elytron with apical segments much heavier. Prothorax slightly longer in proportion to breadth. Elytron additionally with a slight post-humeral depression and lacking a pronounced post-humeral costa. Genitalia (alternate male): aedeagal apex as in Fig. 3g. Measurements: Body length 2.8 mm; body breadth 1.3 mm; head breadth 84 cmm; interantennal space 28 cmm; interocular space 52 cmm; eye 30 cmm; gena 12 cmm; pronotal length 92 cmm; pronotal breadth 96 cmm; elytral length 2.0 mm.

Holotype ♀ (BPBM 17,183), NEW CALEDONIA. Mt Koghi, 500 m, 26–30.i.1963, G. Kuschel; Allotype ♂ (BPBM), same loc., 500 m, 27.x.1967, J.& M. Sedlacek.

Paratopotype Females: Mt Koghi, 500 m, 29.xi.1963, R. Straatman (1); ±600 m, 30.xi.1963, Straatman (1); 500–700 m, 1.xii.1963, Straatman (2); 450–600 m, 4–6.x.1967, Sedlaceks (1); 500–800 m, 23–27.x.1967, Sedlaceks (1); 600–900 m, 19.iii.1968, T.C. Maa (2); 400–600 m, i.1969, N.L.H. Krauss (5); 420 m, 21.ix.1979, W.C. Gagne, C.M. Nishida & G.A. Samuelson (1).

Paratopotype Males: Mt Koghi, ii.1962, N.L.H. Krauss (1); 26–30.i.1963, Kuschel (3); 15.ii.1963, Krauss (4); ±600 m, 30.xi.1963, Straatman (7); 500–700 m, 1.xii.1963, Straatman (5); 500–750 m, 25–26.x.1967, Sedlaceks (1); 300–600 m, 19.iii.1968, J.L. Gressitt & Maa (1); 600–900 m, 19.iii.1968, Maa (5);200–400 m, i.1969, Krauss (2); 400–600 m, i.1969, Krauss (18); SW slope, 500 m, 19–22.viii.1971, J. Holloway (1); 400–500 m, 11.ii.1976, Krauss (1); 420 m, 21.ix.1979, Gagne, Nishida & Samuelson (1); 500–550 m, xii.1983, Krauss (1).

Paratype Females: Thi River Val., viii.1940, F.X. Williams (1); Col de la Pirogue, vii.1950, Krauss (2); Plateau de Dogny, 20.xi.1958, C.R. Joyce (1); same loc., 150–900 m, 4.ii.1971, Krauss (1); 6 km N of Paita, 25.i.1963, C.M. Yoshimoto (1); Col des Roussettes, 450–550 m, 4–6.ii.1963, Kuschel (3); 7 km S of Tchambouenne, 750 m, 28.i.1964, Straatman (1); Col d'Amieu, 500 m, 26.xii.1976, *Psychotria*, Gressitt (1); same loc., 500 m, 28.xii.1976, *Scaevola*, Gressitt (1); same loc., 500–600 m, 28.xii.1976, Gressitt (1); Foret di

Thi, 29.x–1.xi.1967, Sedlaceks (1); Foret di Thy, 400 m, 29.iii.1981, J.Chazeau & Gressitt (1); Slopes of Mt Rembai, 375–675 m, 23.ix.1979, Gagne, Nishida & Samuelson (1); Yahoue, 100–200 m, i.1985, Krauss (1).

Paratype Males: St Louis, v.1950, Krauss (2); Plateau de Dogny, 20.xi.1958, Joyce (1); same loc., 1.ii.1963, Krauss (1); same loc., 29.iii.1968, Maa (1); Col d'Amieu, 750 m, 3.iii.1960, Gressitt (2); same loc., 650 m, 31.iii.1968, Gressitt & Maa (1); same loc., 500 m, 25.xii.1976, *Prunus*, Gressitt (1); same loc., 500 m, 28.xii.1976, *Hibiscus*, Gressitt (1); same loc., 500–600 m, 28.xii.1976, Gressitt (1); same loc., 350–650 m, 13.xi.1963, Straatman (1); Foret di Thy, 550 m, 1.iii.1960, Gressitt (2); Foret di Thi, 28.x–1.xi.1967, Sedlaceks (2); Col des Roussettes, 450–500 m, 4–6.ii.1963, Kuschel (2); Valle d'Amoa, 7.ii.1963, Yoshimoto (1); Col de la Pirogue, 330 m, 21.ii.1963, Yoshimoto (3); 7 km S of Tchambouenne, 750 m, 28.i.1964, Straatman (1); La Crouen, 20–22.iii.1968, Gressitt & Maa (1); Yahoue, 60–100 m, iii.1980, Krauss (1). BPBM paratopotype series with parts for deposit in IAC, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Remarks. A smaller bicolorous species. Similar to *T. scorpii*, **n. sp.** but the elytra are more evenly tapered to a narrower apex. Both sexes treated. Named for the constellation Corvus.

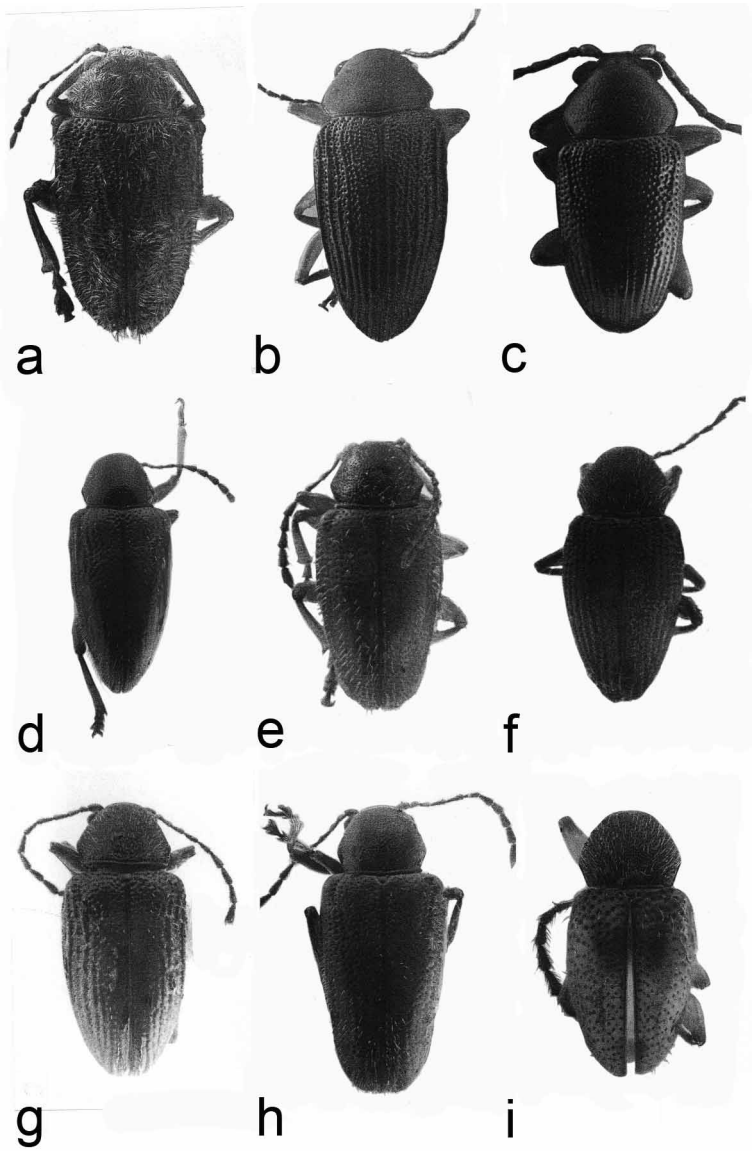

PLATE 2. Dorsal view —*Taophila*, new species. a. *mars*, **n. sp.**, PT ♀—body length = 3.8 mm; b. *cancellata*, **n. sp.**, PT ♀—body length = 4.45 mm; c. *cancellata*, **n. sp.**, PT ♂—body length = 4.1 mm; d. *corvi*, **n. sp.**, PT ♀—body length = 3.5 mm; e. *scorpii*, **n. sp.**, PT ♀—body length = 3.1 mm; f. *millei*, **n. sp.**, HT, ♀—body length = 3.75 mm; g. *joliveti* , **n. sp.**, PT ♀—body length = 4.1 mm; h. *sagittarii*, **n. sp.**, PT ♀—body length = 4.0 mm; i. *hydrae*, **n. sp.**, HT ♂ —body length = 3.0 mm.

***Taophila deimos* Samuelson, new species**
Fig. 3e

Description. Male (Holotype). Dorsum pitchy castaneous with slight violaceous lustre, head and pronotum darkest, almost black. Antenna orange-testaceous on 1–5, 4–6 more reddish, 7–11 darkest, castaneous. Ventral surfaces and legs largely pitchy castaneous. Pronotum appearing granose being closely and deeply punctulate in contrast to a smoother elytron; elytral punctures small, deep and not too conspicuous between swollen, pustulate interspaces. Dorsal surfaces moderately setose, the silvery setae fine and erect.

Head: frontal surfaces generally flat and continuous through interantennal region; frons rather deeply punctate with interspaces smooth, punctures a little larger above, though still small; vertex similarly punctate and with fairly distinct median line; eye with maximum diameter about 0.55 x as broad as interantennal space; gena about 0.4 x as deep as eye. Antenna extending to basal 2/5 of elytron, apical 5 segments heavier than preceding ones. Prothorax about 0.80 x as long as broad, broadest just before middle; side convex anteriorly, then evenly narrowed from widest convex point to produced posterior angle; base beaded with antimarginal impression; disc closely and densely punctulate, appearing rough at low magnifications, punctures small and deep with interspaces actually smooth-shining and raised at higher magnifications; surface densely setose. Elytron rather gradually and convexly narrowed to apex; humerus moderately produced; disc with basal quadrant confusedly punctate the punctures commonly 1 x as large as interspaces and 2–3 x as large as pronotal ones, these punctures not prominent due to swollen, ± transversely pustulate interspaces; lateral punctures large and becoming more regular in lateral 3 rows; surfaces smooth-shining. Ventral surfaces: propleuron smooth-shining with deep punctures commonly 2 x as large as interspaces; metasternum shining and smiliarly punctate and with surface with suberect setae; abdominal ventrites shining but with fine microsculpture; intercoxal piece of ventrite 1 fairly narrow at 9:60 breadth of segment; ventrite 1 in lateral profile gradually inclined to metathorax; remaining ventrites normal. Legs: femora moderately swollen medially; metatibia rather straight and briefly expanded at apex. Genitalia: aedeagus: length including base 102 cmm; narrowest breadth 18 cmm; preapex normally expanded with microtruncate extremity. Measurements: Body length 2.8 mm; body breadth 1.4 mm; head breadth 84 cm; interantennal space 30 cmm; interocular space 54 cmm: eye 30 cmm: gena 12 cmm; pronotal length 90 cmm; pronotal breadth 110 cmm; elytral length 2.0 mm.

Holotype ♂ (BPBM 17,184). NEW CALEDONIA. Yahoue, iii.1978, N.L.H. Krauss.

Remarks. A smaller dark castaneous species with violaceous lustre. Differing from congeners by the overall dark coloration and erect dorsal pubescence. Further differs from the variant of *T. subsericea* Heller with pustulate discal elytral interspaces by having the elytral apex evenly and convexly narrowed. Unique male. The name commemorates a satellite of planet Mars.

***Taophila hydrae*, Samuelson, new species**
Fig. 2i, 3d

Description. Male (Holotype). Head and prothorax dull dark castaneous (upper vertex orangish); elytron largely shining pale orange-testaceous, disc additionally with a slight oblique fuscescent marking from post-basal area to suture. Antenna orange-testaceous. Ventral surfaces: propleuron dark shining castaneous; metathorax and ventrites orange-testaceous. Legs yellowish but apices of femora and bases of tibia tinged with fuscous. Body surfaces dull granulate on head and pronotum and smooth-shining on elytron; propleuron smooth; metasternum granulate; ventrites ± smooth. Dorsal vestiture of erect silvery setae: pronotum with setae slightly angled anteriorad; elytron with setae directed slightly posteriorad. Head: frontal surface gently + transversely raised across interantennal region; frons and lower vertex closely and deeply punctate, the punctures becoming elliptical at sides of vertex; upper vertex with a distinctly paler delimited area with a few smaller punctures on a subgranulate smoother impunctate surface and central disc with a brief suggestion of a median line; eye with maximum diameter 0.5 x as broad as interocular space; gena nearly 0.5 x as deep as eye.

Antenna elongate, extending to elytral preapex; pedicel nearly as long as segment 3; intermediate segments slender; apical 5 segments much heavier. Prothorax about 0.85 x as long as broad broadest across middle; side rather strongly convex anteriorly thence evenly narrowed from middle to non-projecting posterior angle; basal antimargin finely sulcate; disc punctures small, deep, elliptical and a little closer centrally and basally; punctures commonly about 3 x as large as raised interspaces; lateral punctures larger with somewhat flatter interspaces. Elytron broadest near middle and rather evenly convex from base to apex; discal surface evenly convex with irregular puncture rows of large punctures commonly 1–2 x as large as interspaces. Ventral surfaces: propleuron with deep distinct punctures over a smooth glassy surface; metasternum with large deep well-formed punctures; ventrites normally inclined to thorax; ventrite 1 with intercoxal piece fairly narrow at 11:63 basal breadth. Genitalia: aedeagal apex as in Fig. 3d. Measurements: Body length 3.0 mm; body breadth 1.5 mm; head breadth 96 cmm; interantennal space 32 cmm; interocular space 60 cmm; eye 30 cmm; gena 14 cmm; pronotal length 108 cmm; pronotal breadth 126 cmm; elytral length 2.1 mm.

Holotype ♂ (BPBM 17,185). NEW CALEDONIA: Plateau de Dogny, 700 m, 1.ii.1963, C.M. Yoshimoto.

Remarks. A smaller bicolorous species, with conspicuous erect pubescence. Differs from bicolorous males of allied *T. corvi*, **n. sp.** and *T. scorpii*, **n. sp.** by having prothorax distinctly stouter: ca. 0.85 x instead of >0.90 x as long as broad and pronotal disc closely punctulate, the small punctures tending to run in ± longitudinal channels instead of being more distant between flatter interspaces. Unique male. Named for the constellation Hydra.

***Taophila joliveti* Samuelson, new species**
Fig. 2g, 4j

Description. Female (Holotype). Body surfaces largely orange-fuscous but head and prothorax more pitchy and slightly darker than elytron. Antenna and legs yellowish to orangish. Surfaces shining, nearly smooth, additionally with a slight isodiametric sculpture, especially on upper vertex and abdominal ventrites. Vestiture of forward-adpressed pronotal setae and longer erect elytral setae at side and apex.

Head: frontal surfaces rather continuous from frons to vertex with interantennal space flattened; frons with small deep punctures; lower vertex with deep larger punctures, these becoming elliptical at upper sides but central disc briefly impunctate, suggesting a median line; eye with maximum diameter nearly 0.5 x as broad as interocular space; gena about 0.5 x as deep as eye. Antenna very slender, attaining mid-elytron; pedicel distinctly exeeding mid-length of segment 3. Prothorax about 0.8 x as long as broad, broadest across middle; side convex anteriorly, thence rather straight and narrowed basally to projecting posterior angle; basal bead with antimarginal groove distinct; disc closely and deeply punctulate, the punctures deep and elliptical, commonly about 3 x as large as briefly raised interspaces; interspaces tending to run together longitudinally. Elytron broadest along basal 3/5 before narrowing to apex; apex briefly rounded; humerus slightly raised with swollen interstices following to preapex; disc with inner basal quadrant dull and confusely punctate, the punctures deep and irregularly spaced, often 1.0–1.5 x as large as interspaces; sutural interstice swollen apically; lateral puncture rows ± regular. Ventral surfaces: propleuron with large, deep punctures on smooth-shining interspaces; metasternum also with large deep punctures over a duller surface; abdominal ventrite 1, shield-like, apical margin simple; ventrite 2 with tubercles (1 + 1) on apical margin. Ventrite 1 (paratype female) with intercoxal piece relatively broad at 16:63 as broad as segment. Legs: metafemur slender, gradually thickened to middle; metatibia slender but gradually arched and slightly broaded apically. Genitalia: spermatheca with receptacle relatively stout, j-shaped. Measurements: Body length 4.0 mm; body breadth 1.75 mm; head breadth 102 cmm; interantennal space 37 cmm; interocular space 62 cmm; eye 30 cmm; gena 16 cmm; pronotal length 108 cmm; pronotal breadth 136 cmm; elytral length 3.05 mm.

Holotype ♀ (BPBM 17,186). NEW CALEDONIA. Mont Panie, 800 m, 27–29.vii.1971, *Freycinetia*, J.L. Gressitt; paratype ♀, same data but 1300 m, 28.vii.1971, shrubs (BPBM).

Remarks. A larger pitchy testaceous species. Differs from congeners by having abdominal ventrite 2 bituberculate on apical margin. Females only. The name honors Prof. Pierre Jolivet of Paris, who continues his remarkable studies in Chrysomelidae of New Caledonia and beyond.

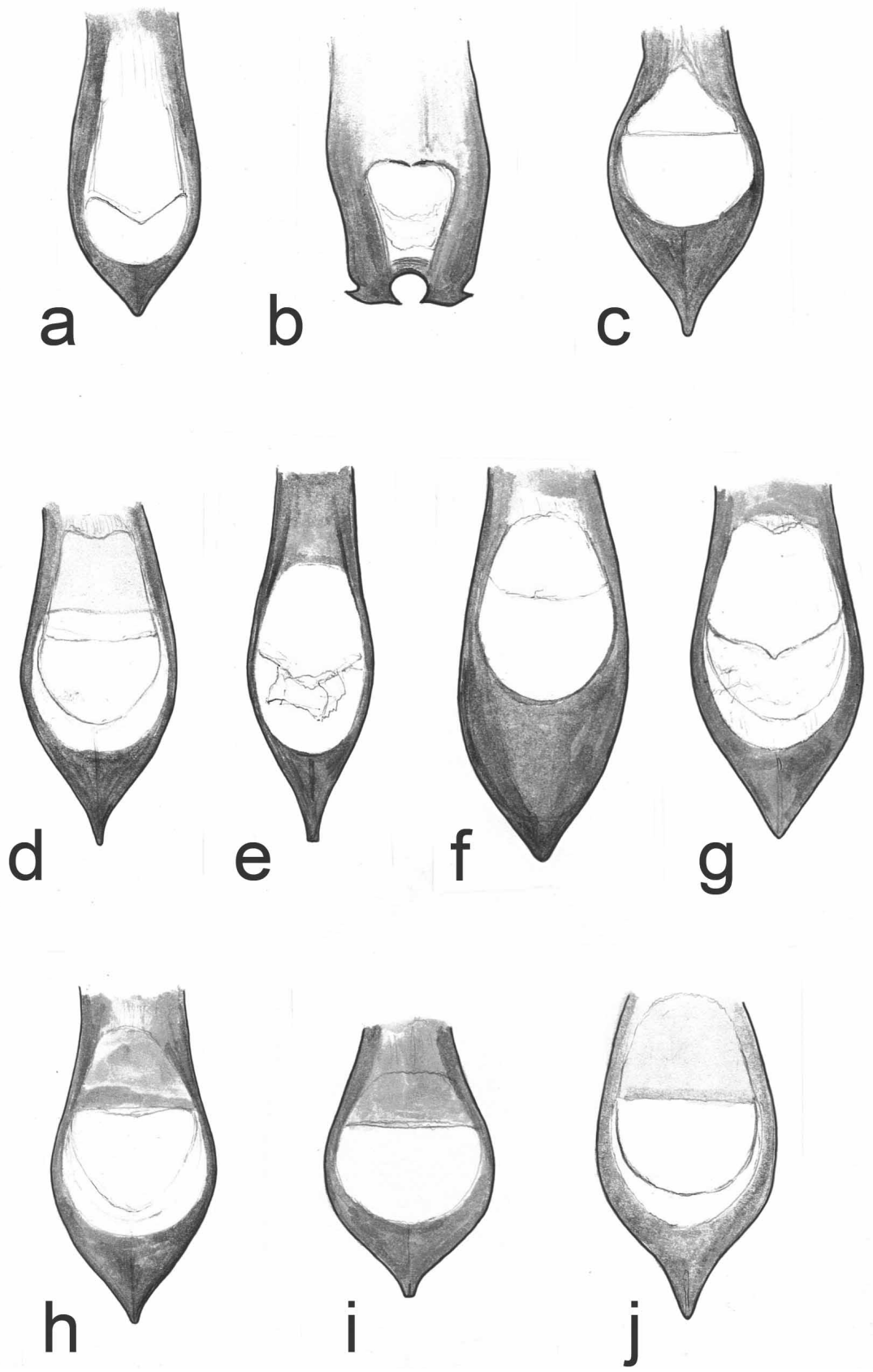

PLATE 3. Aedeagus, apical structure in *Taophila*. a. *mars*, **n. sp.**; b. *mantillerii* Jolivet *et al.*; c. *nigrans* Jolivet *et al.*; d. *hydrae* **n. sp.**; e. *deimos*, **n. sp.**; f. *cancellata*, **n. sp.**; g. *corvi*, **n. sp.**; h. *scorpii*, **n. sp.**; i. *subsericea* Heller; j. *sagittarii*, **n. sp.**

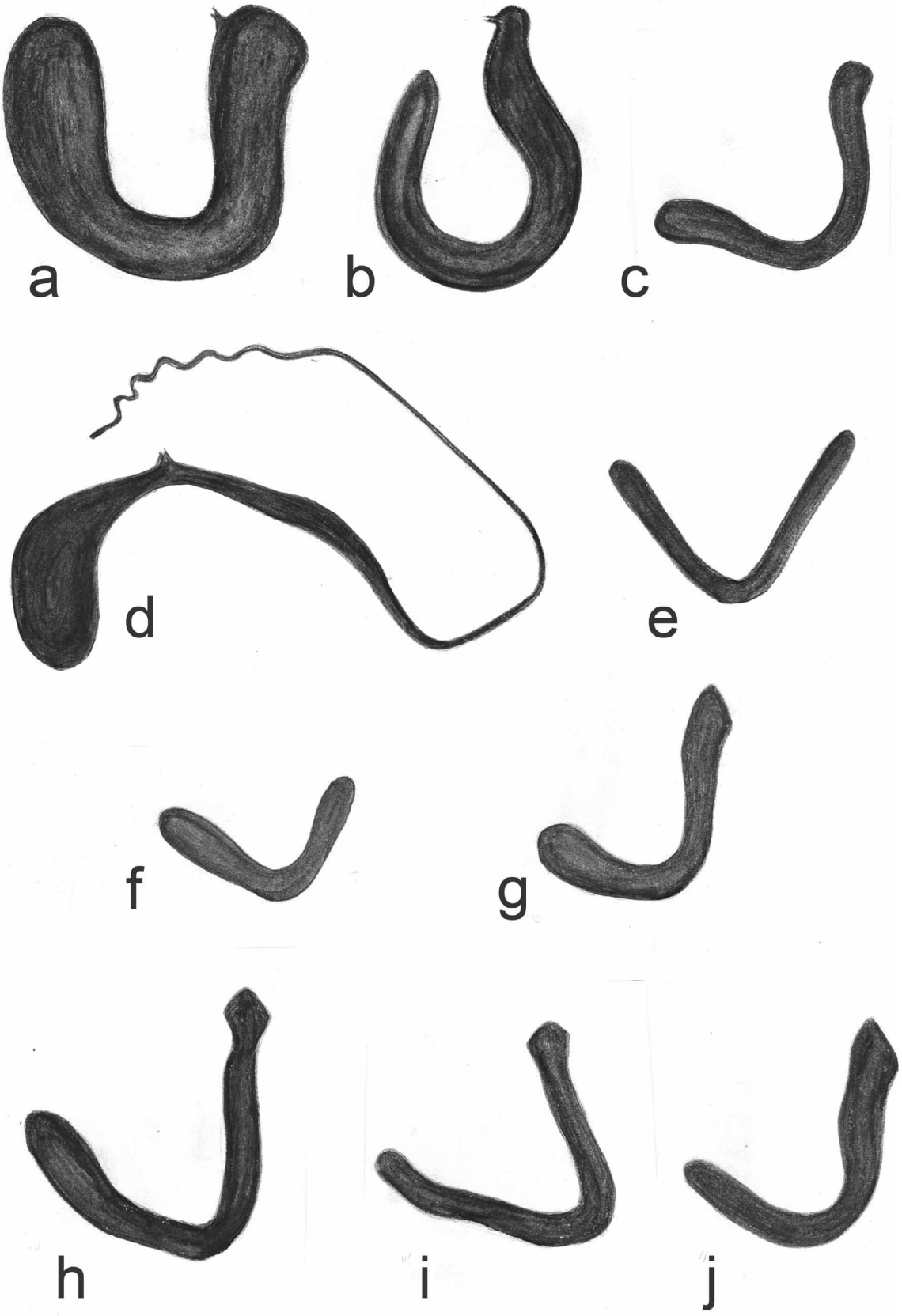

PLATE 4. Spermatheca in *Taophila*. a. *mars*, **n. sp.**; b. *mantillerii* Jolivet *et al.*; c. *subsericea* Heller; d. *cancellata*, **n. sp.**; e. *corvi*, **n. sp.**; f. *scorpii*, **n. sp.**; g. *nigrans* Jolivet *et al.*; h. *millei*, **n. sp.**; i. *sagittarii*, **n. sp.**; j. *joliveti* , **n. sp.**

***Taophila mars* Samuelson, new species**
Fig. 2a, 3a, 4a

Description. Female (Holotype). Dorsum largely dark shining castaneous with a slight metallic greenish lustre; ventral surfaces as above except abdominal ventrites slightly paler, more orangish fuscous. Antenna with segments 1–3 and 10–11 orange-fuscous, intermediate segments dark fuscous; legs largely orange-fuscous. Body surfaces mostly smooth, lustrous, bright under lights but abdominal ventrites subshagreened with fine sculpture. Dorsal pubescence of moderately long and bristle-like setae sporadically arranged in various directions, ± forming large rosettes; vertex with a central rosette.

Head: frontal surfaces flattened and continuous with interantennal space; frons finely and closely punctulate; vertex similarly punctulate, disc with a distinct median line; eye with maximum diameter about 0.5 x as broad as interantennal space; gena 0.5 x as deep as eye. Antenna slightly exceeding mid-elytron; pedicel about 0.5 x as long as segment 3; intermediate segments slender; apical 5 segments much heavier than preceding. Prothorax about 0.6 x as long as broad, broadest across middle with 2 distinctive teeth marking broadest part; sides otherwise evenly narrowed to apex and base; posterior angle weakly produced; base finely beaded; discal surface uneven, transversely depressed on sides along posterior 2/5; disc closely punctulate. Elytron gradually narrowed to preapex; preapex sinuately narrowed to extremity; inner disc largely confusedly punctate, the punctures small, deep but distinctly larger than pronotal ones and 2–3 x as large as interspaces; posterior 1/5 with punctures becoming more regular adjacent to suture; humerus slightly swollen; postbasal area with 2 meandering heavy costae, the inner disappearing near suture and the outer reaching preapex. Ventral surfaces: propleuron with small deep punctures, commonly 1 x as large as interspaces; shining interspaces shining; metasternum with shallow small punctures, surface with fine sculpture; ventrite 1 in lateral view evenly and convexly elevated to metasternum; intercoxal piece 0.21 x as broad as basal breadth of segment; remaining ventrites appearning normal. Legs: femora normally slender-incrassate; metatibia nearly straight, dilated at apex. Genitalia: spermatheca with receptacle an elongate and nearly closed u-shape. Measurements: Body length 3.9 mm; body breadth 1.9 mm; head breadth 118 cmm; interantennal space 38 cmm; interocular space 70 cmm, eye 36 cmm, gena 18 cmm; pronotal length 100 cmm; pronotal breadth 158 cmm (across posterior teeth); elytral length 2.9 mm.

Male (Allotype). Similar to holotype, including distinct pronotal teeth laterally; elytral disc more evenly convex and lacking costae. Ventral surfaces: abodominal ventrites essentially on an even, flat plane in lateral view. Genitalia: aedeagal apex as in Fig. 3a. Measurements: Body length 3.25 mm; body breadth 1.65 mm; head breadth 106 cmm; interantennal space 30 cmm; interocular space 58 cmm; eye 36 cmm; gena 16 cmm; pronotal length 90 cmm; pronotal breadth 138 cmm; elytral length 2.5 mm.

Holotype ♀ (BPBM 17,187). NEW CALEDONIA. Mt Koghi, 500–550 m, ii.1983, N.L.H. Krauss collector; Allotype ♂, same loc., ii.1978, Krauss (BPBM); paratopotypes: 500 m, 26–30.i.1963, G. Kuschel (1), C.M.Yoshimoto (2); 500 m, 15.ii.1963, Yoshimoto (1), Krauss (1); 19.ii.1963, Krauss (1); 500–750 m, 25–26.x.1967, J&M Sedlacek (2); 500–800 m, 23–27.x.1967, Sedlaceks (2); 400–600 m, ii.1980, Krauss (1); 500–550 m, xii.1983, Krauss (1).

Paratypes (BPBM): Thio, 11.xi.1958, C.R. Joyce (1); La Crouen, 16.iii.1961, J. Sedlacek (1); Col de Pirogue, 13.iii.1962, Krauss (1); same loc. 14.ii.1963, Krauss (2); S of Koh, 300 m, 31.i.1963, Yoshimoto (1); Ponerihouen, 30.vii.1971, J.L. Gressitt (1); Foret di Thi, 100–300 m, 29.x–1.xi.1967, Sedlaceks (12); La Foa-Canala, Saddle Road, 300–450 m, 30.i.1963, Krauss (1); heights between Thio-Nakety, 12.xi.1958, Joyce (1); Plateau de Dogny, 700 m, 1.ii.1963, Kuschel (1); Yiambi, NE, 1–50 m, 15.x.1967, Sedlaceks (1); 6 km N of Paita, 25.i.1963, Yoshimoto (1), Kuschel (1), Krauss (1). Paratypes (IAC): Sarramea/Reserve du Col d'Amieu, 23/11/07, beating various trees, S. Cazeres (2); Sarramea/Col d'Amieu, S21˚34.694' E165˚46.278', 489 m, 08/02/06, Malaise trap, Cazeres (1); same loc., S21˚34.914' E165˚46.376', 609 m, 04/10/06, beating, J.P. Kataoui (1); same loc., 2–25/11/05, beating, Cazeres, C. Mille & Kataoui (4); same loc. S21˚34.903' E165˚46.376', 611 m, 08/02/06–03/03/06, Malaise trap, ICA personnel (2); Ponerihouen/Aoupinie, S21 ˚08.946' E165˚19.407', 389 m, 25–26/04/06, beating various trees, Mille & J.Brinon (1); same loc., S21.1038 E165.1707, 945 m, 11/10/06, Cazeres (1). Part of BPBM Foret di Thi series for deposit in IAC, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Remarks. A larger dark castaneous species differing from all congeners by having a double-toothed prominence on each side of pronotum and by having ± erect, unkempt setae in various large rosette patterns. Both sexes treated. The name commemorates the planet Mars.

***Taophila millei* Samuelson, new species**
Fig. 2f, 3h

Description. Female (Holotype). Head dark castaneous but paler on lower frons and central to upper vertex; prothorax dull dark castaneous with a slight brassy lustre; elytron orange-fuscous. Antenna, pterothorax, abdominal ventrites, and legs largely pitchy orange-fuscous. Dorsal surfaces: pronotum dulled by close puncturation; elytron subshining with slight isodiagramatic sculpture. Dorsal vestiture of conspicuous silvery setae.

Head: frontal surfaces essentially flattened but interantennal region very weakly and gradually raised transversely; frons bearing small deep punctures, mostly about 1 x as large as interspaces; lower vertex with similar but larger punctures; punctures of upper vertex becoming elliptical at sides and above and median line of disc fine but distinct; eye rather small, with maximum diameter about 0.4 x as broad as interantennal space; gena about 0.55 x as deep as eye. Antenna extending beyond mid-elytron; pedicel exceeding half-length of segment 3; segments rather slender but with apical 5 distinctly heavier and longer. Prothorax roughly 0.7 x as broad as long, broadest across anterior third; side convex anteriorly, thence becoming straightened and narrowed to projecting posterior angle; basal antimarginal sulcus a deep narrow scratch; discal punctures small and ± elliptical, commonly 3 or 4 x as large as briefly raised interspaces, roughly tending to run in longitudinal directions; marginal punctures at side slightly larger and more circular. Elytron broadest across anterior third, the side rather evenly convex and gradually narrowed to apex; apex weakly declined in lateral view; humerus briefly swollen and followed by slightly swollen interstices; inner basal discal quadrant with punctures largest and confused; puncturation becoming regular apically and laterally; discal sculpture generally subgranulate-shining at most in inner discal quadrant, otherwise nearly smooth. Ventral surfaces: propleuron set with deep punctures mostly less than 1 x as large as smooth interspaces; metasternum subgranulate-smooth, with large punctures at side; abdominal ventrites 1 and 2 modified: ventrite 1 shield-like with apical margin bituberculate; ventrite 2 normally short but with apical margin bituberculate as in preceding; intercoxal piece of ventrite 1 fairly narrow at 11:68 as broad as segment. Legs: metafemur rather slender but incrassate; metatibia ± straight, apex expanded. Genitalia: spermatheca with receptacle slender v-like, somewhat sinuate on one arm. Measurements: Body length 3.75 mm; body breadth 1.8 mm; head breadth 102 cmm; interantennal space 36 cmm; interocular space 68 cmm; eye 27 cmm; gena 15 cmm; pronotal length 102 cmm; pronotal breadth 140 cmm; elytral length 2.8 mm.

Holotype ♀ (BPBM 17,188). NEW CALEDONIA. Col d'Amieu, 750 m, 3.iii.1960, J.L. Gressitt.

Remarks. A larger bicolorous species, with dorsal surfaces moderately setose. Differs from the smaller bicolorous species by having the elytral disc normally turgid and evenly convex instead of flattened with barely any granulation on the inner disc as compared to the other females. Differs further from *T. scorpii*, **n. sp.** by having a more evenly narrowed elytron and larger size. Unique female. The name honors Christian Mille of IAC in La Foa, provider of material critical to this study.

***Taophila sagittarii* Samuelson, new species**
Fig. 2h 3j, 4i

Description. Female (Holotype). Body surfaces and legs yellow-testaceous. Antenna largely fuscous, only the scape and pedicel yellowish. Dorsal surfaces: pronotum shining-punctate; elytron duller subgranulate and punctate. Ventral surfaces: propleuron smooth-punctate; metasternum nearly smooth-punctate; abdominal ventrite 1 dull shagreened-punctulate. Vestiture: setation finer and shorter on pronotum, longer on elytron.

Head: frontal surfaces smooth-glassy, with frons and interantennal region very weakly and gradually raised transversely and on a slightly higher plane than lower vertex; frons sparsely punctate than vertex, the punctures small and fairly deep; vertex similarly punctate and lacking distinct median line on disc; eye nearly 0.6 x as broad as interocular space; gena about 0.45 x as deep as eye. Antenna extending to about mid-elytron; pedicel exceeding half-length of segment 3; segments moderately slender but with apical 5 heavier. Prothorax about 0.9 x as long as broad, broadest just before middle; side convex anteriorly, thence straight and narrowed to projecting posterior angle; base beaded, with a deep antimarginal sulcus; disc shining with deep punctures about 1–1.5 x as large as smooth interspaces. Elytron with side very straight and narrowed from humerus to preapex; apex narrowed to briefly truncate extremity; apex in lateral view briefly declined; inner basal discal quadrant confusedly punctuate, the punctures large; elsewhere the punctures becoming regular; humerus somewhat swollen and followed by slightly higher interstices to preapex. Ventral surfaces: propleuron smooth-shining with moderately small deep punctures; metasternum similarly punctate at side over a subgranulate duller surface surface; abdominal ventrite 1 enlarged, apron-like with apical margin bituberculate, surface punctulate with subshagreened-smooth sculpture; ventrite 2 simple. Legs: metafemur slender but indurate, gradually thickened to middle; metatibia straight, barely thickened at apex. Genitalia: spermatheca with receptacle slender and forming a broadly open c-shape. Measurements: Body length 3.15 mm; body breadth 1.4 mm; head breadth 84 cmm; interantennal space 28 cmm; interocular space 52 cmm; eye 30 cmm; gena 14 cmm; pronotal length 90 cmm; pronotal breadth 99 cmm; elytral length 2.35 mm.

Male (Allotype). Similar to female, excepting elytron entirely smooth-shining. Genitalia: aedeagal apex as in Fig. 3j. Measurements: Body length 3.0 mm; body breadth 1.3 mm; head breadth 86 cmm; interantennal space 28 cmm; interocular space 52 cmm; eye 31 cmm; gena 15 cmm; pronotal length 92 cmm; pronotal breadth 98 cmm; elytral length 2.25 mm.

Holotype ♀ (BPBM 17,189). NEW CALEDONIA. Mts des Koghis, 400–600 m, i.1969, N.L.H. Krauss; Allotype ♂, same loc., 600–900 m, 19.iii.1968, T.C. Maa (BPBM).

Paratopotype Females: Mt Koghi, same data as holotype (13); 26.i.1963, C.M. Yoshimoto (1); 26–30.i.1963, G. Kuschel (3); 28.xi.1963, R. Straatman (1); 900 m, 3.xii.1963, Straatman (2); 450–600 m, 4–6.x.1967, J.& M. Sedlacek (1); 600–900 m, 19.iii.1968, Maa (4); 400–600 m, ii.1973, Krauss (3); 400–500 m, 2.ii.1976, Krauss (1); 400–500 m, 11.ii.1976, Krauss (3).

Paratype Females, other locals: St Louis, v.1950, Krauss (3); Foret di Thy, 1.iii.1960, treefern, J.L. Gressitt (2); Foret di Thi, 29.x–1.xi.1967, Sedlaceks (1); La Crouen, 150 m, 22.iii.1968, small palm, Gressitt (1).

Paratopotype Males, Mt Koghi, ii.1962, Krauss (1); 500 m, i.1963, Krauss (2); 500 m, 26.i.1963, Yoshimoto (5); 500 m, 26–30.i.1963, G. Kuschel (1); 15.ii.1963, Yoshimoto (1), Krauss (2); 28 or 29.xi.1963, Straatman (3); 500–700 m, 1.xii.1963, Straatman (2); 900 m, 3.xii.1963, Straatman (2); 600 m, 25.xii.1963, Gressitt (1); 300–600 m, 19.iii.1968, Gressitt & Maa (1); 600–900 m, 19.iii.1968, Maa (7); 400–600 m, ii.1973, Krauss (8); 400–500 m, ii.1976, Krauss (4); ii.1978, Krauss (3); 400–600 m, ii.1980, Krauss (1). BPBM paratopotype series with parts for deposit in IAC, ISNB, JOLIVET, MNHN, NMNH, ONNC, and SMTD.

Remarks. A smaller pale unicolorous species with very straight-sided tapering elytra. Possibly close to *T. scorpii*, **n. sp.** because abdominal ventrite 1 has a bituberculate apical margin; differs from the same by having the elytral margin tapering to a broader preapex and somewhat glossier pronotal sculpture, besides color differences. Both sexes treated. Named for the constellation Sagittarius.

***Taophila scorpii* Samuelson, new species**
Fig. 2e, 3h, 4f

Description. Female (Holotype). Head pitchy fuscous becoming darker on sides of vertex; prothorax pitchy castaneous; elytron orange-testaceous. Antenna testaceous, intermediate segments fuscescent but without much contrast. Ventral surfaces and legs largely orange-testaceous but propleuron dark. Dorsal surfaces

subshining granulate (isodiametric). Vestiture: pronotal disc with fine silvery setae; elytron with longer setae, these most conspicuous along side and apical region.

Head: frontal surfaces generally raised transversely across interantennal region; frons deeply punctulate; lower vertex with larger punctures, commonly smaller than interspaces; upper vertex with punctures at sides more elliptical; discal median line obscure; eye with maximum diameter roughly 0.6 x as broad as interocular space; gena nearly 0.5 x as deep as eye. Antenna just exceeding mid-elytron; segments slender but apical 5 heavier; pedicel ovate and distinctly exceeding half-length of segment 3. Prothorax about 0.85 x as long as broad, broadest just before middle; side rather strongly convex anteriorly thence narrowed and ±straight to projecting posterior angle; base sulcate antimarginally; discal punctures small and deep, mostly about 1 x as large as interspaces. Elytron relatively robust, parallel-sided along basal 2/5, thence narrowed to fairly broad and sinuate preapex; apex slightly declined in lateral view; humerus slightly produced and followed by 2 weak costae, with the inner costa obliquely delimiting disc; disc with inner basal quadrant confusedly punctate, the punctures large; apical punctures smaller in ±irregular rows; apical part of lateral humeral costa swollen at preapex making apical area appear relatively broad with median emargination in dorsal view.

Ventral surfaces: propleuron with deep punctures mostly smaller than interspaces, surface with slight granulation; metasternum with large shallow punctures laterally; abdominal ventrite 1 strongly modified, elevated over its length and exceeding half-length of abdomen, surface flattened to shallowly concave and extending to bituberculate apical margin; intercoxal piece fairly narrow at 11:66; remaining ventrites appearing normal. Legs: metafemur slender, gradually thickened to about middle; metatibia rather straight, apex expanded. Genitalia: spermatheca with receptacle slender, v-shaped. Measurements: Body length 3.6 mm; body breadth 2.6 mm; head breadth 92 cmm; interantennal space 29 cmm; interocular space 52 cmm; eye 32 cmm; gena 15 cmm; pronotal length 102 cmm; pronotal breadth 122 cmm; elytral length 2.65 mm.

Male (Allotype). Similar to holotype but pronotal surface a little smoother and elytral surface much smoother and shinier; elytral preapex normally closing to apex without sinuation or enlarged humeral costa above; ventrite 1 not overtly modified. Genitalia: aedeagal apex as in Fig. 3h. Measurements: Body length 2.8 mm; body breadth 1.3 mm; head breadth 81 cmm; interantennal space 24 cmm; interocular space 48 cmm; eye 30 cmm; gena 12 cmm; pronotal length 90 cmm; pronotal breadth 98 cmm; elytral length 2.0 mm.

Holotype ♀ (BPBM 17,190), NEW CALEDONIA. Col des Roussettes, 350–450 m, 3.ii.1971, N.L.H. Krauss; Allotype ♂ (BPBM), same loc. but 450–550 m, 4–6.ii.1963, J.L. Gressitt.

Paratypes: same data as holotype (1 ♀); same data as allotype but G. Kuschel (1 ♀, 1 ♂); Plateau de Dogny, 29.iii.1968, sweeping, T.C. Maa (1 ♂) and Maa & Gressitt (2 ♀ BPBM, MNHN); Col d'Amieu, 650 m, 31.iii.1968, Gressitt (1 ♀).

Remarks. A smaller bicolorous species generally fitting with the smaller bicolorous species: *T. corvi*, **n. sp.** and *T. subsericea* Heller. The highly modified bituberculate female ventrite 1 and simple ventrite 2 separate this species from its close allies. Both sexes treated. Named for the constellation Scorpius.

Plant host affinities

The relatively few specific host records for adults of *Taophila* indicate a broad range of plant associates from pteridophytes to higher plants. Several beetles appear tied to pteriodphytes, namely *Taophila mantillerii* Jolivet *et al.*, *T. sagittarii*, **n. sp.**, and *T. subsericea* Heller. Others appear to be tied to seed plants over a fairly broad range of familes, such as *Taophila corvi*, **n. sp.** with *Hibiscus* (Malvaceae), *Prunus* (Rosaceae), *Psychotria* (Rubiaceae), and *Scaevola* (Goodeniaceae) and *T. mars*, **n. sp.** with *Semecarpus* (Anacardiaceae) and *Syzygium* (Myrtaceae). Further plant-beetle associations are either based on few or sporadic records, including *Taophila joliveti*, **n. sp.** from *Freycinetia* (Pandanaceae). All of these records at least identify plant associates on which the beetles were feeding or perching when collected. We have no data on oviposition or larval food habits.

Key to species of *Taophila*

1. Prothorax with lateral margin convex or subangulate-convex near middle, not toothed; dorsal pubescence never in rosettes 2
- Prothorax with lateral margin producing 2 teeth (2 + 2) near middle of each side; dorsal pubescence adpressed to suberect and lying in different directions; dorsum dark fuscous to blackish with usually violaceous lustre; body length 3.0–4.3 mm ..... *T. mars*, **n. sp.**
2. Elytron pustulate on inner basal discal quadrant, pustules appearing as smooth ± transverse transverse wrinkles 3
- Elytron with inner basal discal quadrant flattened, punctate, or smooth but not markedly pustulate 4
3. Dorsum entirely blackish with strong metallic violaceous lustre and with conspicuous erect pubescence overall; body length 2.8 mm ..... *T. deimos*, **n. sp.**
- Dorsum largely pitchy fuscous, the surface smooth-shining but not metallic; dorsal pubescence adpressed on pronotal disc and ± erect on elytral disc: body length 3.0–3.25 mm ..... *T. subsericea* Heller (part),
4. Dorsum essentially glabrous, lacking conspicuous setae on pronotal- or elytral disc, except elytral preapex 5
- Dorsum usually with conspicuous setae somewhere on pronotal- or elytral disc beside elytral preapex 7
5. Front of head (frons and vertex) largely impunctate, surfaces ± evenly granulate, vertex additionally with conspicuous median line; dorsum orange-fulvous with elytron a slight value darker, reddish; body length 3.2–4.5 mm; males ..... *T. cancellata*, **n. sp.**
- Front of head with conspicuous punctures on frons and vertex, surface sculpture various 6
6. Body surfaces blackish-castaneous, shagreened with metallic violaceous lustre; elytron relatively slender, not broadened postbasally but rather gradually narrowed to preapex; posthumeral region with sharp costae; legs not extremely slender; body length 3.8–5.4 mm; females ..... *T. cancellata*, **n. sp.**
- Body surfaces largely orange-fulvous, subgranulate-smooth, sometimes with a slight brassy lustre; elytron rather strongly broadened to middle before narrowing apically, surface lacking sharp costae but posthumeral interstices may be swollen; legs extremely slender in both sexes; body length 3.5–5.0 mm ..... *T. mantillerii* Jolivet *et al.*
7. Males: dorsal surfaces generally smooth-shining; elytron with inner discal area and surrounding areas uniformly smooth; probasitarsus relatively turgid 8
- Females: dorsal surfaces generally duller, elytron usually with inner discal area subgranulate, much duller than sublateral area, but alutaceous with erect pubescence in *T. millei*, **n. sp.**; probasitarsus relatively slender 13
8. Prothorax dark: blackish or very dark fuscous, strongly contrasting to paler parts of elytron (elytron often entirely pale testaceous or fulvous but sometimes with dark discal markings) 9
- Prothorax pale: testaceous or fulvous, not strongly contrasting to paler parts of elytron (elytron often entirely pale but inner elytral disc sometimes dark) 12
9. Pronotal disc sparsely to moderately punctate: punctures 1 x or less as large as interspaces; interspaces smooth … 10
- Pronotal disc finely and densely punctulate: punctures 3–4 x as large as interspaces; pronotal pubescence subdense; dorsum: pronotum black, elytron yellow-testaceous with faint posthumeral oblique stripe; body length 3.0 mm ..... *T. hydrae*, **n. sp.**
10. Pronotal disc moderately punctate: punctures commonly 1 x as large as interspaces 11
- Pronotal disc sparsely punctate: punctures commonly 0.5 x as large as interspaces; elytral disc sparsely pubescent but pubescence denser on apical 1/3; apical antennal segment usually paler than preceding; body length 2.4–3.0 mm ..... *T. corvi*, **n. sp.**
11. Pronotal pubescence moderate, suberect; elytron with moderate erect pubescence ± uniformly placed over disc; body length 2.5–2.75 mm ..... *T. scorpii*, **n. sp.**
- Pronotal pubescence inconspicuous; elytral disc sparsely and irregularly set with suberect hairs; body length 2.5–3.0 mm ..... *T. subsericea* Heller.
12. Pronotal puncturation sparser: punctures commonly 0.5–1.0 x as large as interspaces; interspaces flat, smooth-shining between punctures; metatibia straight ... dorsum yellow-testaceous; body length 2.75–3.2 mm ..... *T. sagittarii*, **n. sp.**
- Pronotal puncturation closer: punctures 3–4 x as large as interspaces; interspaces convex between punctures; metatibia weakly sinuate; dorsum evenly orange-fulvous with bright lustre but elytron sometimes with inner disc dark; body length 2.6–3.4 mm ..... *T. nigrans* Jolivet *et al.*
13. Prothorax and elytron with distinct color contrast, the respective surfaces dark and pale 14
- Prothorax and elytron rather similarly monocolorous or varicolored, the surfaces either dark or pale and not contrasting significantly 17
14. Pronotal pubescence conspicuous, ± erect; abdominal ventrites 1 or 1+2 tuberculate on apical margin/s 15
- Pronotal pubescence not conspicuous: fine, ± short, adpressed; abdominal ventrites 1 or 1+2 not tuberculate on apical margin 16
15. Abdominal ventrite 1 tuberculate sublaterally along apical margin; ventrite 2 with apical margin simple; elytral

humeral costa well developed posteriorly, concealing lateral margin (from above) along preapical area; elytral inner disc dull, granulate; elytral discal pubescence present and erect but not quite uniform; elytral side nearly straight and narrowed to preapex; body length 2.8–3.6 mm ..... *T. scorpii*, **n. sp.**

- Abdominal ventrite 1+2 each tuberculate sublaterally along apical margin; elytral humeral costa not well developed, lateral margin not concealed preapically; elytral dorsal interspaces generally ± alutaceous, with more shining; elytral discal pubescence uniform and erect; elytral side more convex in dorsal view; body length 3.75 mm .... *T. millei*, **n. sp.**

16. Pronotal puncturation moderate: punctures commonly about 1 x as large as interspaces; elytron more strongly and evenly narrowed apically; elytron reddish fulvous; body length 3.2–3.6 mm ..... *T. corvi*, **n. sp.**
- Pronotal puncturation closer: punctures commonly 3 x as large as interspaces; elytron not strongly narrowed until apical 1/3; elytron often bicolorous: orange with black areas along side; body length 2.9–4.0 mm..... ..... *T. subsericea* Heller.
17. Abdominal ventrite 1 with apical margin simple, not tuberculate.....18
- Abdominal ventrite 1 with apical margin bituberculate; body surfaces uniformly pale: yellow-testaceous or orange-fulvous; body length 3.1–4.0 mm ..... *T. sagittarii*, **n. sp.**
18. Abdominal ventrite 2 with apical margin simple, not tuberculate apically 19
- Abdominal ventrite 2 with apical margin tuberculate sublaterally; elytron with duller granulate area on inner disc more restricted, surrounded by smoother areas; 2 or 3 posthumeral costae present; dorsum: pronotum slightly darker, more reddish fuscous than elytron; body length 4.0–4.25 mm; females only ..... *T. joliveti*, **n. sp.**
19. Abdominal ventrite 1 with surface gently convex, shield-like; metafemur not clavate; metatibia ± straight; pronotum subpiceous, dull with fine, close puncturation; elytral humerus briefly pale, inner discal area dark reddish, side darker piceous; 2 posthumeral interstices ± swollen; side moderately pubescent; body length 3.6–3.8 mm .... *T. subsericea* Heller (part).
- Abdominal ventrite 1 with surface ± bulbous basally before bending to plane of following ventrites; metafemur clavate; metatibia strongly sinuate; elytral posthumeral costae strongly developed; dorsum dark red-fuscous but more reddish on elytral posthumeral and apical areas; body length 3.5–4.0 mm ..... *T. nigrans* Jolivet *et al.*

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