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Typological problems in East Palaearctic *Thinodromus* KRAATZ, 1857 (Coleoptera: Staphylinidae: Oxytelinae)

Gy. MAKRANCZY

Abstract

Identities of four East Palaearctic *Thinodromus* KRAATZ, 1857 (Coleoptera: Staphylinidae: Oxytelinae) species are discussed. Neotypes are designated for *Thinodromus anhuiensis* LI, 1993, *Trogophloeus eminens* SHARP, 1889 and *T. kochi* BERNHAUER, 1939. The latter was found in the same sample as a specimen of a rather similar species from China (Shaanxi province) here described as new: *Thinodromus crinitus* sp.n. A subsequently validated lectotype designation of *Trogophloeus deceptor* SHARP, 1889 is based on a female, but information about this species is supplemented by paralectotypes (both sexes), and the misidentification of the species in the most recent taxonomic treatment is clarified. The following new synonyms are proposed: *Thinodromus eminens* (SHARP, 1889) = *T. pseudoeminens* GILDENKOV, 2003, syn.n. and *T. deceptor* (SHARP, 1889) = *T. proprius* GILDENKOV, 2003, syn.n. All five species are illustrated by colour photographs of males and line drawings of terminalia and genitalia.

Key words: Coleoptera, Staphylinidae, Oxytelinae, *Thinodromus*, taxonomy, neotypes, new synonymy, new species, Palaearctic Region, China, Japan.

Introduction

In the genus *Thinodromus* KRAATZ, 1857 characters in terminalia and genitalia are rather rich and useful in identification. With a high number of externally very similar species these character states must be explored to the fullest extent. For the same reason it must be ensured that the valid taxa are based on decent type material that maintain stability of nomenclature and provide a solid basis for further studies and many more species descriptions. It is therefore alarming that very serious problems exist with the type material; the present contribution is aimed at curing four of these; they affect the East Palaearctic *Thinodromus* fauna that will likely receive further treatment in the near future.

For the present account concentrating primarily on pinning down these problematic identities, homologies within the inner sclerites of the aedeagi (MAKRANCZY 2009, 2013 for Afrotropical species) are not established at this point (at the current state of knowledge), but an effort is made to treat the species in a manner consistent with the author's previous work on *Thinodromus* of other regions.

Material and methods

Although the hereby presented work treats a very limited number of specimens, it is based on larger number of specimens. Abbreviations of the depositories of the material are as follows:

coll. Gildenkov	private collection of Mikhail Gildenkov (Smolensk, Russia)
coll. Ito	private collection of Tateo Ito (Kyoto, Japan)
coll. Pütz	private collection of Andreas Pütz (Eisenhüttenstadt, Germany)
coll. Schülke	private collection of Michael Schülke (Berlin, Germany) (part of ZMHB)

BMNH	The Natural History Museum (London, United Kingdom)
FMNH	Field Museum of Natural History (Chicago, USA)
IZAS	Institute of Zoology, Chinese Academy of Sciences (Beijing, China)
HNHM	Hungarian Natural History Museum (Budapest, Hungary)
MHNG	Muséum d'histoire naturelle, Genève (Switzerland)
MNHP	Muséum national d'histoire naturelle (Paris, France)
NMW	Naturhistorisches Museum Wien (Vienna, Austria)
ZMHB	Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung (Berlin, Germany)
ZMUC	Zoological Museum, University of Copenhagen (Denmark)

Label data for types are listed verbatim, "\" separates labels and ";" separates lines. Text within brackets "[]" is explanatory and was not included in the original labels. Measurements are defined as follows: HW = head width with eyes; TW = head width at temples; PW = maximum width of pronotum; SW = approximate width of shoulders; MW = maximum width of elytra; AW = maximum width of abdomen; HL = head length from front margin of clypeus to the beginning of neck at middle-line; EL = eye length; TL = length of temple; PL = length of pronotum in the middle-line; SL = length of elytra from shoulder; SC = length of elytra from hind apex of scutellum; FB = forebody length (combined length of head, pronotum and elytra); BL = approximate body length. All measured from dorsal view. For descriptions and measurements a Leica MZ 12.5 stereoscopic microscope was used. For the line drawings permanent preparations were made in Euparal mounting medium on plastic cards pinned with the specimens. The genital preparation techniques are detailed in MAKRANCZY (2006). Drawing was done with a Jenalab (Carl Zeiss, Jena) compound microscope and drawing tube (camera lucida). For the colour habitus photographs a Nikon D4 camera with Mitutoyo PlanApo 10x ELDW lens was used and layers combined with ZereneStacker.

Thinodromus anhuiensis LI, 1993

Thinodromus anhuiensis LI 1993: 159; HERMAN 2001: 1761.

TYPE MATERIAL: **Neotype** ♂: "CHINA: Anhui, [Anqing prefecture] Yuexi Co., Dabie Shan, ca. 50km (on the road) NW Yuexi City, Huang Liyan (village) nr. Baojia, 1000-1050 m [31°01'45"N, 116°08'48"E], 8.XI.1997, leg. Schönmann & Wang (CWBS 299) \ steep and narrow forest valleys, stream running over mainly rock, small sandy pools with decaying leaves, densely shaded \ Neotypus; Thinodromus; anhuiensis J.-K. Li; des. Makranczy, 2015 \ Thinodromus; anhuiensis J.-K. Li; det. Makranczy, 2015" (NMW).

REDESCRIPTION: Measurements (in mm, n = 1): HW = 0.49; TW = 0.43; PW = 0.54; SW = 0.70; MW = 0.80; AW = 0.71; HL = 0.32; EL = 0.19; TL = 0.03; PL = 0.43; SL = 0.69; SC = 0.65; FB = 1.47; BL = 2.76. Lustre and colour: Habitus as in Fig. 1. Body moderately lustrous for fine but very dense punctation; only elytra with slightly larger interspaces, so with higher gloss. Head and abdomen blackish dark brown. Pronotum and elytra dark brown with very slight reddish tint, however, at sutural corners with small bright, orangish, slightly elongate spot. Mouthparts and antennae dark brown, but first antennomeres and legs medium brown. Shape and sculpture: Head quite transverse, with large eyes and inconspicuous, almost truncate temples slightly sticking out anteriorly. Neck not delineated from punctate vertex by groove, microsculpture rather transverse coriaceous (same lustre). Antennae with articles 4 and 5 1.74–1.86 × longer than broad, articles 9 and 10 1.02–1.05 × longer than broad (in male). Pronotum rather transverse, strongly obtuse-angled anterior corners narrowly rounded but still marked. Anterior half of side arched, posterior half slightly concave; posterior corners obtuse-angled and narrowly rounded. Posteriorly with thin marginal bead, also on posterior half of sides. Horseshoe-shaped impression moderately strong and posteriorly transversal, side arms slightly outwards bent, anteriorly reaching into anterior half of length; middle of disc with inconspicuous impressions. Elytra with apical margin slightly oblique and imperceptibly arched, with inconspicuous membranous lobe; with a pair of very shallow impressions behind scutellum connected

to larger impressions in the middle of anterior disc. Apex of abdominal tergite VII with thin, but medially broader palisade fringe. Punctation and microsculpture: Head and pronotum with moderately deep and rough, extremely dense punctures; interspaces less than 0.2 × puncture diameters, punctation with sharp puncture borders, loosening on middle of anterior edge and behind frontoclypeal/epistomal suture; no microsculpture. Elytra with slightly larger punctures, interspaces less than puncture diameters, punctation loosening a little in anterior middle of disc. Puncture edges rather sharp, no microsculpture. Abdomen densely and deeply punctured (punctures smaller than on forebody), interspaces slightly less than diameters without microscuplture. Pubescence: Body setation fine, short and rather dense and equal sized on whole forebody; direction mostly antero-medial on head and pronotum, anterior near midline. Longer setae only on abdomen, especially near sides and apices of tergites; otherwise elytral and abdominal setation with approximately the same density. Primary and secondary sexual features: Male: sternite VIII as in Fig. 6, tergite IX as in Fig. 7, tergite X as in Fig. 8, aedeagus, frontal view with parameres as in Fig. 9, median lobe with internal sclerites (in the same view) as in Fig. 10, paramere from side view as in Fig. 11. Female unknown.

DISTRIBUTION AND BIONOMICS: This species is only known from China (Anhui province), was collected in a forested stream valley, probably among decaying leaves stuck at rocks.

COMMENT: *Thinodromus anhuiensis* was described based on a single female specimen with data "Ning-Guo, 9.IV.1992, 5–10 cm depth, leg. Z.-Y. Wang", but the possible depositories (Department of Geographic Sciences of Harbin Normal University or the Northeast Normal University) do not maintain a permanent insect collection and have no staff for managing collections. Enquiries made on the present writer's behalf by Liang Lü (IZAS) in 2013 and 2016 (to Li Jing-Ke and Prof. Mei-Xiang Gao) yielded no information on the whereabouts of this specimen, as is the case with most other type specimens described in Li Jing-Ke's works (e.g. FELDMANN et al. 2014), so it is untraceable and most likely lost (ICZN Art. 75.3.4). The communication in August 2016 with Prof. Gao confirmed the specimen was not at these depositories. VIT (2006) mentions existence of type specimens from the same material, bought by Georges Coulon in 1995, but the latter person certainly did not acquire the specimen in question. The article indicates the specimens being preserved "in an unknown liquid medium" that caused distortion (shrinking) of parts and not being labelled properly by the author. It is also mentioned that by examining the original material numerous serious discrepancies were detected between the description and the type specimen. These circumstances make a later recovery (and safe recognition) of the original type rather unlikely. Interpretation of this taxon is problematic as the exclusively verbal description is very brief and inappropriate. A few irrelevant (and even redundant) statements are mixed with ones that are rather relative (referring to lustre and punctation density). Colour is of not much diagnostic value either, as species with contrasting colours can be rather unicolorous when teneral, also predominantly dark species can have body parts lighter when not fully mature. Contrary to the opinion of most colleagues the present writer discussed with in the past few years, it is decided not to ignore this poorly documented name as complete suppression of Li's infamous work is now unlikely (some treatments of his names are already published, neotypes are designated and even junior synonyms are proposed), so only a case-by-case treatment is possible and with this particular name the present action seems to be the best option. In the interest of nomenclatural stability a neotype designation is here deemed necessary to stabilize the interpretation of this taxon and prevent a different usage, potential threat to other, properly described species. The neotype is from Anhui province, a very poorly researched area, so the present specimen's locality is as close as one can get to the original habitat (ICZN Art. 75.3.4).

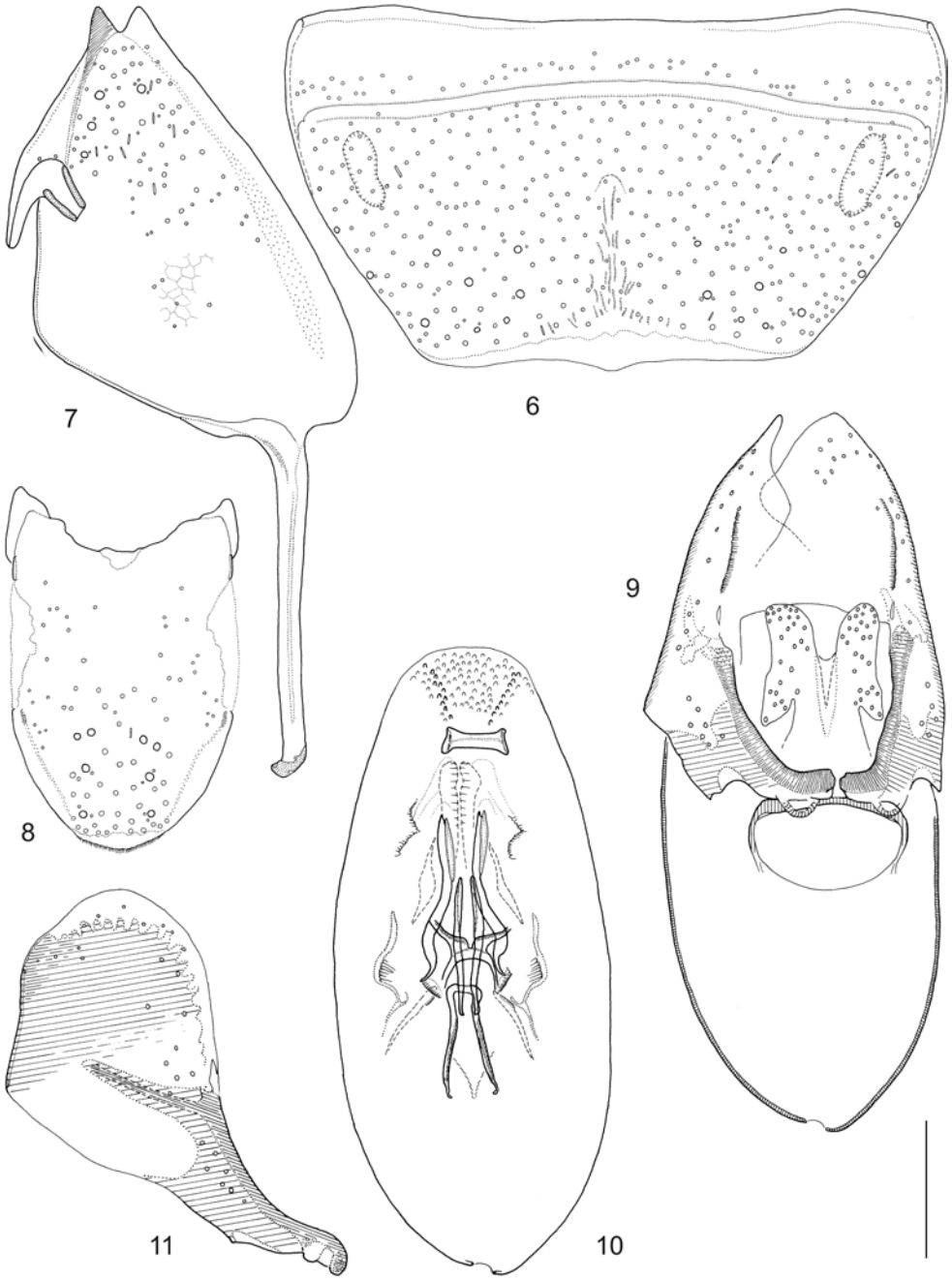
Figs. 1–3: Habitus of 1) *Thinodromus anhuiensis* (♂); 2) *T. deceptor* (♂); 3) *T. eminens* (♂).

Figs. 4–5: Habitus of 4) *Thinodromus kochi* (♂); 5) *T. crinitus* (♂).

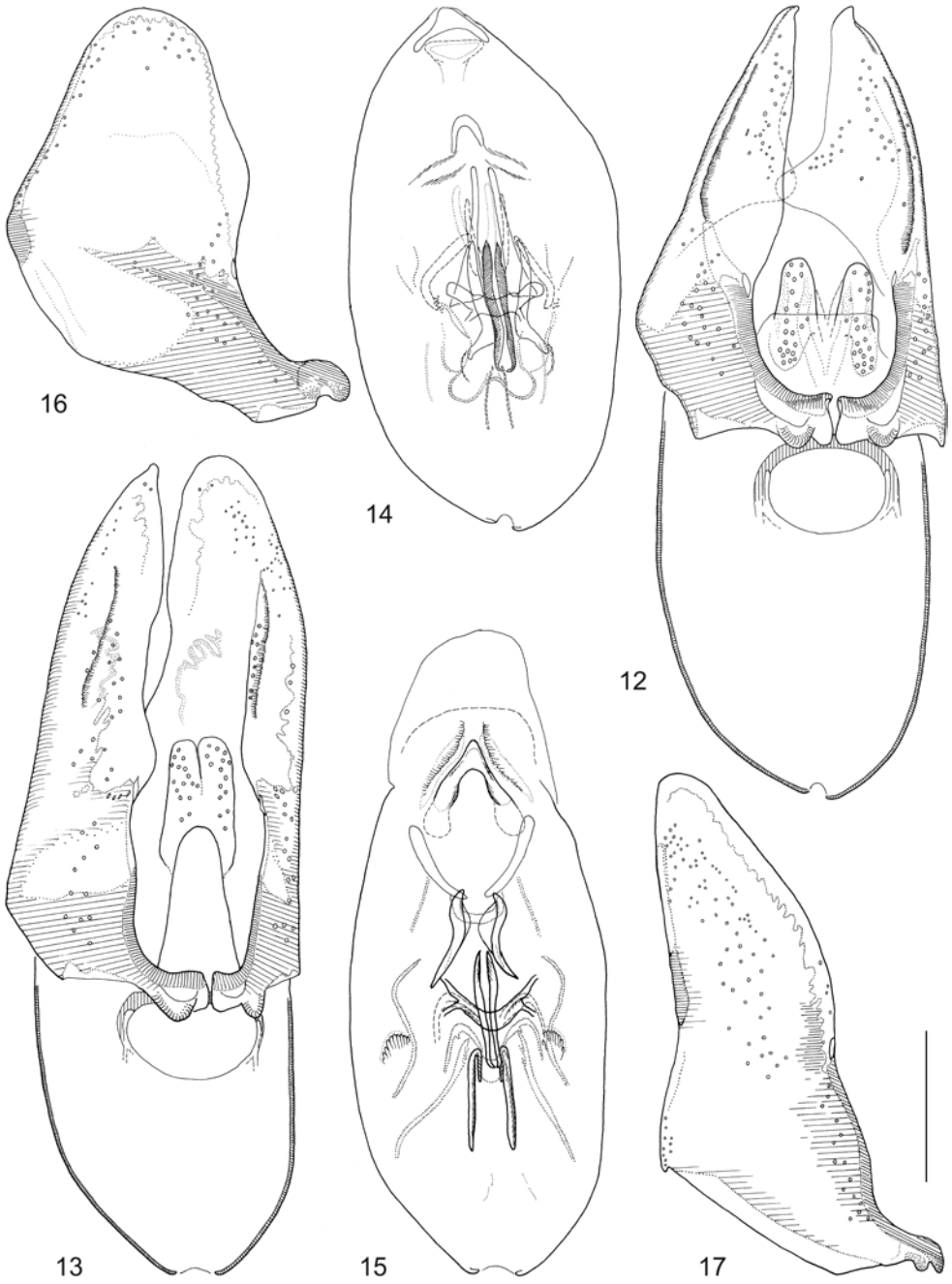
Thinodromus deceptor (SHARP, 1889)

Trogophloeus deceptor SHARP 1889: 416.
Trogophloeus (*Thinodromus*) *deceptor*: BERNHAUER & SCHUBERT 1911: 94.
Thinodromus (*Thinodromus*) *deceptor*: HERMAN 1970: 387, 2001: 1766; GILDENKOV 2000a: 693, 2000c: 829, 2001: 80, 2003a: 592, 2003b: 247; LEE & AHN 2007: 40 (misidentification).
Thinodromus (*Thinodromus*) *proprius* GILDENKOV 2003a: 584; GILDENKOV 2001: 83 (not available; ICZN Art. 16.1); GILDENKOV 2003b: 239, **syn.n.**

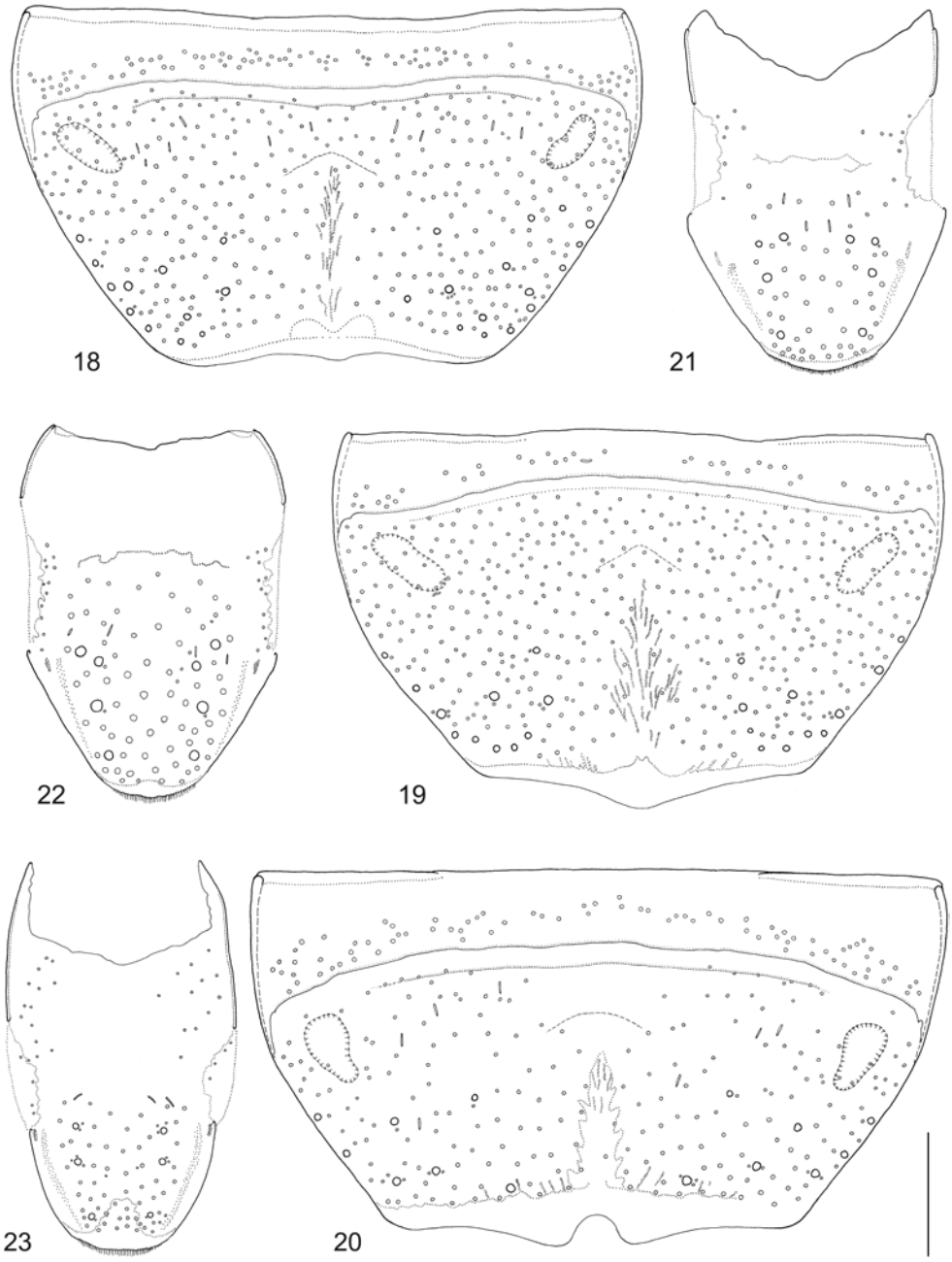
TYPE MATERIAL of *Trogophloeus deceptor*: **Lectotype** ♀: "Trogophloeus; deceptor.; Type D.S.; [Nagasaki] 28.5.1881. Lewis \ Type [red margined disc, curator label] \ Japan.; G. Lewis \ Sharp Coll.; 1905-313. \ Lectotypus; Trogophloeus; deceptor; Sharp \ Thinodromus; deceptor; (Sharp) 2000; det. M. Gildenkov \ Lectotypus; Trogophloeus; deceptor Sharp; ver. Makranczy, 2015 \ Thinodromus; deceptor (Sharp); det. Makranczy, 2015" (BMNH). **Paralectotypes** (4): "Trogophloeus; deceptor.; D.S.; Yokohama. \ Para-; lecto-; type [light blue margined disc, curator label] \ Japan.; G. Lewis. \ Sharp Coll; 1905-313. \ Paralectotypus; Trogophloeus; deceptor Sharp; ver. Makranczy, 2015 \ Thinodromus; deceptor (Sharp); det. Makranczy, 2015" (2 ♂♂, BMNH); "Trogophloeus; deceptor.; Yokohama. \ Para-; lecto-; type [light blue margined disc, curator label] \ Japan.; G. Lewis. \ Sharp Coll; 1905-313. \ Paralectotypus; Trogophloeus; deceptor Sharp; ver. Makranczy, 2015 \ Thinodromus; deceptor (Sharp); det. Makranczy, 2015" (1 ♂, 1 ♀, BMNH).



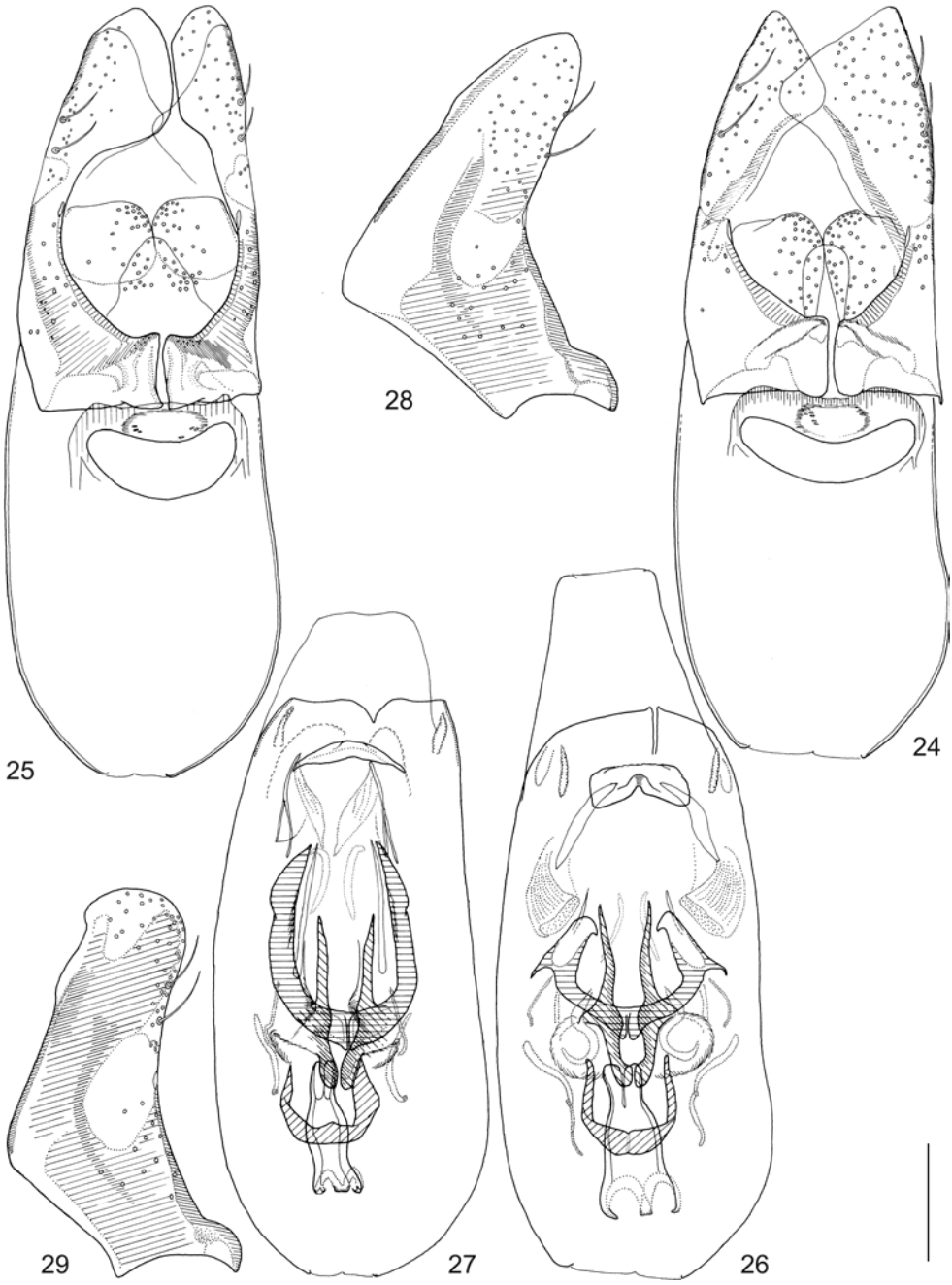
Figs. 6–11: *Thinodromus anhuiensis*: sternite VIII (6), tergite IX (7), tergite X (setae omitted) (8), aedeagus, frontal view (9–10), and paramere, lateral view (11). Scale bar = 0.08 mm (9–11), 0.09 mm (7–8), 0.1 mm (6).



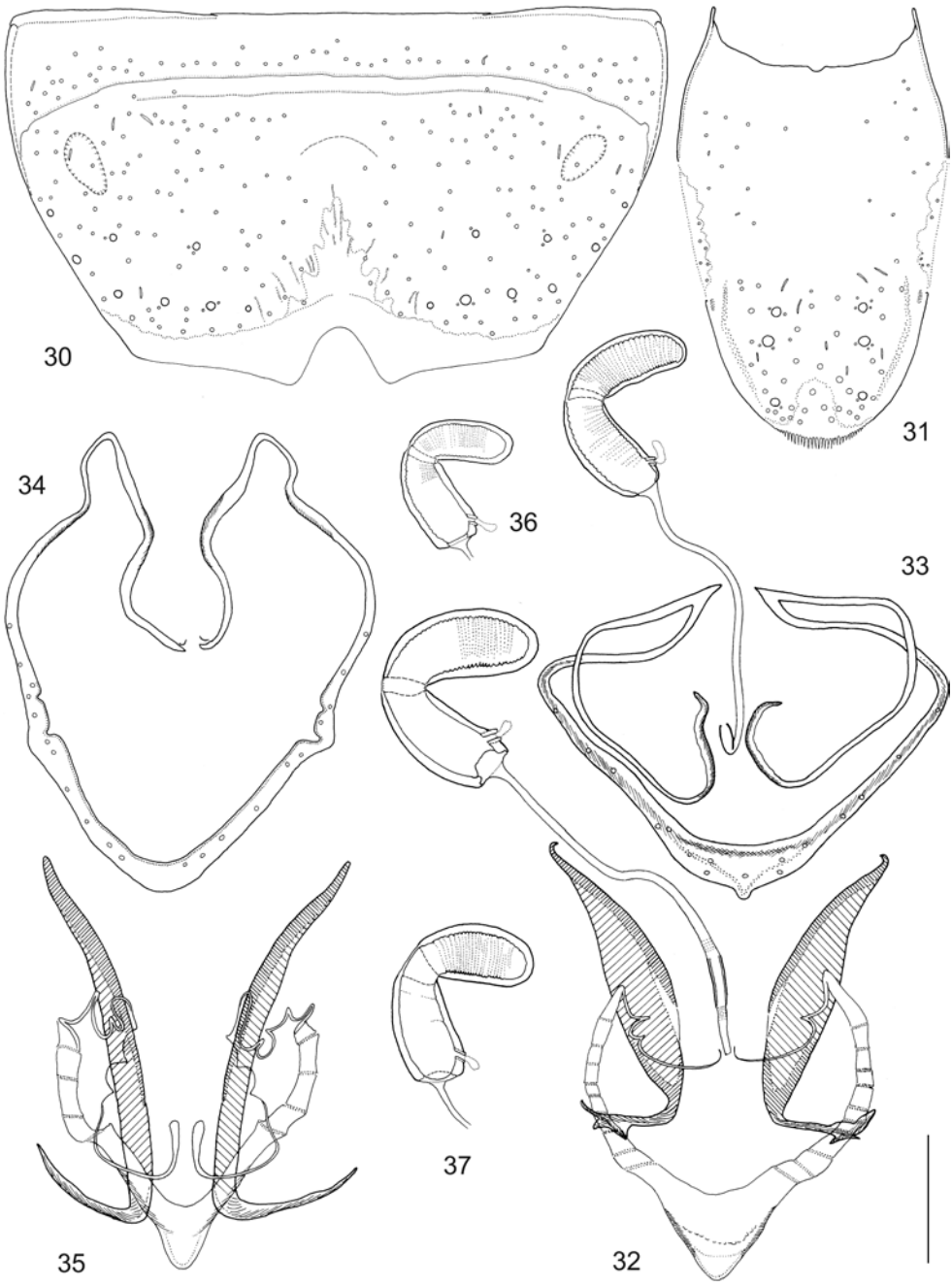
Figs. 12–17: Aedeagus, frontal view (12–15) and paramere, lateral view (16–17) of *Thinodromus deceptor* (12, 14, 16) and *T. eminens* (13, 15, 17). Scale bar = 0.093 mm (13, 15, 17), 0.1 mm (12, 14, 16).



Figs. 18–23: Sternite VIII (18–20) and tergite X (setae omitted) (21–23) of *Thinodromus deceptor* (18, 21), *T. eminens* (19, 22) and *T. kochi* (20, 23). Scale bar = 0.075 mm (22), 0.087 mm (19, 21), 0.1 mm (18, 20, 23).



Figs. 24–29: Aedeagus, frontal view (24–27) and paramere, lateral view (28–29) of *Thinodromus kochi* (24, 26, 28) and *T. crinitus* (25, 27, 29). Scale bar = 0.092 mm (25, 27, 29), 0.1 mm (24, 26, 28).



Figs. 30–37: Sternite VIII (30), tergite X (setae omitted) (31), female ringstructure with spermatheca (32–33), spermatheca (36–37), and female ringstructure (34–35) of *Thinodromus crinitus* (30–32), *T. eminens* (33), *T. deceptor* (34, 36), and *T. kochi* (35, 37). Scale bar = 0.060 mm (33), 0.075 mm (32, 34–37), 0.085 mm (31), 0.1 mm (30).

TYPE MATERIAL of *Thinodromus proprius*: **Holotype** ♂: "Chiuzenji [Lake Chuzenji, 36°44'22"N, 139°29'48"E, 1280 m] \ Japan.; G. Lewis.; B.M. 1910-320. \ Holotypus Thinodromus; (s.str.) proprius; Gildenkov 2000 \ Thinodromus; deceptor (Sharp); det. Makranczy, 2015" (BMNH).

REDESCRIPTION: Measurements (in mm, n = 6): HW = HW = 0.48 (0.47–0.49); TW = 0.45 (0.43–0.47); PW = 0.57 (0.55–0.59); SW = 0.66 (0.64–0.68); MW = 0.77 (0.75–0.79); AW = 0.73 (0.70–0.75); HL = 0.31 (0.30–0.33); EL = 0.18 (0.18–0.19); TL = 0.03 (0.025–0.03); PL = 0.42 (0.40–0.44); SL = 0.62 (0.58–0.66); SC = 0.58 (0.54–0.62); FB = 1.36 (1.30–1.42); BL = 2.91 (2.53–3.15). Lustre and colour: Habitus as in Fig. 2. Body moderately lustrous for fine but very dense punctation and uneven surface; only tergite bases (if exposed) with higher gloss. Head and abdomen blackish dark brown with slight reddish tint. Pronotum faintly reddish dark brown, elytra mostly reddish medium to dark brown; scutellar area to shoulders blackish, as well as outer posterior corners and sometimes more along posterior margin. Legs, mouthparts and antennae reddish medium to dark brown. Shape and sculpture: Head quite transverse, with large eyes and inconspicuous, almost truncate temples slightly sticking out anteriorly. Neck delineated by shallow groove, neck somewhat shinier than vertex. Antennae with articles 4 and 5 1.53–1.63 × longer than broad in male, articles 9 and 10 1.00–1.06 × longer than broad. Female antennomeres somewhat shorter. Pronotum transverse, strongly obtuse-angled anterior corners superficially appear somewhat rounded but still marked. Anterior half of side arched, posterior half almost straight (but not concave); posterior corners strongly obtuse-angled and barely marked. Posteriorly with thin marginal bead, also on posterior half of sides and anterior margin at corners. Horseshoe-shaped impression strong and broad, anteriorly reaching into anterior half of length, posteriorly arched; middle of disc with a pair of impressions. Elytra with apical margin very slightly oblique and arched, with thin membranous lobe in outer 2/5; with a pair of small, oval, slightly elongate impressions behind scutellum and shallowly extending along suture. Apex of abdominal tergite VII with broad and medially stronger palisade fringe. Punctation and microsculpture: Head and pronotum finely but densely punctured, interspaces about as puncture diameters. Punctures irregular, not so sharp edged, rather shallow on middle of pronotum; only traces of microsculpture. Elytra with same type of punctation, more even but still irregular, average interspaces about as puncture diameters; surface very uneven, obscuring traces of microsculpture. Abdomen with fine punctures 2–3 × puncture diameters, faint traces of coriaceous (isodiametric) microsculpture around punctures / setae bases. Pubescence: Body setation medium fine, mostly rather long and dense, semi-erect. Compared to head, elytra with slightly longer setae, pronotum generally more similar to head, but along side margins with several stronger, more erect and much longer setae; direction mostly anterior on both head and pronotum. Abdomen with longer setae, especially near sides and apices of tergites; density of setation not differing significantly between main body parts. Primary and secondary sexual features: Male: sternite VIII as in Fig. 18, tergite X as in Fig. 21, aedeagus, frontal view with parameres as in Fig. 12, median lobe with internal sclerites (in the same view) as in Fig. 14, paramere from side view as in Fig. 16. Female: ringstructure as in Fig. 34, spermatheca as in Fig. 36.

DISTRIBUTION AND BIONOMICS: This species is still only known from Japan (records from Korea are based on misidentification). No modern material seems to exist, all specimens were collected more than a century ago, therefore exact habitat is unknown.

COMMENT: On a July 2000 visit by the present writer in BMNH, handwritten notes were made which indicate a set of syntypes of *Trogophloeus deceptor*, including male specimens. However, when the multiple "lectotype designations" appeared, they treated only a female specimen as syntype – GILDENKOV (2000a,c) did not intend to designate a lectotype, later articles cite this date as label text. GILDENKOV (2003a) says in the Russian summary "*Th. deceptor* is being redescribed based on the holotype (female)", in the main text (p. 592) "lectotype female", failing to meet requirements of Art. 74.7.3. emended in 2003 ("merely citing a specimen as lectotype is

insufficient"), GILDENKOV (2001) lists the specimen as "Lectotype", a similarly invalid designation. GILDENKOV (2010) made an express statement by saying "the lectotype is being designated" and provided the necessary information about the specimen, thereby meeting the requirements. LEE & AHN (2007) considered the earlier designation valid but based on study of the same specimen misidentified the taxon and illustrated the male of another species under this name, not being able to correctly recognize the species (the genitalia preparation of the lectotype is overbleached and no diagnostic structure can be seen). The identity of the species, however, can be clarified by the paralectotypes (three males and one female, all in decent condition). Type locality is inferred from the original description of this taxon and a note under *Philonthus angustatus*, collected on the same day by G. Lewis (SHARP 1889: 39).

Thinodromus eminens (SHARP, 1889)

Trogophloeus eminens SHARP 1889: 416.
Trogophloeus (*Thinodromus*) *eminens*: BERNHAUER & SCHUBERT 1911: 94.
Thinodromus eminens: HERMAN 1970: 387, 2001: 1768.
Thinodromus (*Thinodromus*) *eminens*: GILDENKOV 2000a: 693, 2000c: 829.
Thinodromus (*Thinodromus*) *pseudoeminens* GILDENKOV 2003a: 586; GILDENKOV 2001: 79 (not available; ICZN Art. 16.1); GILDENKOV 2003b: 241, **syn.n.**

TYPE MATERIAL: **Neotype** ♂: "♂ [on mounting card] \ 8 mi[les] N. Kyoto; Seryo Toge [35°09'30"N 135°47'09"E]; 6.viii.[19]80 \ Japan: Honshu; B.M. 1980-492; P.M. Hammond \ Leaf; litter \ Holotypus Thinodromus; pseudoeminens; Gildenkov 2000 \ Neotypus; Trogophloeus; eminens Sharp; des. Makranczy, 2015 \ Thinodromus; eminens (Sharp); det. Makranczy, 2015" (BMNH). **Rejected holotype** ♀: "Type [red margined disc, curator label] \ Japan,; G. Lewis.; 1910-320. \ Trogophloeus; eminens.; Type D.S. \ Holotypus Trogophlo-; eus; eminens; Sharp \ syn. n.; Gildenkov \ Thinodromus; sericatus; 2000; det. M. Gildenkov \ Holotype; Trogophloeus; eminens; Sharp, 1889: 416; det. R.G. Booth 2006 \ rejected as holotype -; specimen not from Kiga,; opposing every state-; ment of description; [on the back:] Makranczy,; Oct. 2015" (BMNH).

ADDITIONAL MATERIAL: **JAPAN:** Tamagawa-Kyo, Kii, 24.VIII.1985, leg. T. Ito (1 ♂, coll. Ito); Maruno-Cho, Yamanashi, 11.VI.1991, leg. K. Hosoda (1 ♀, NMW); Maruno-Cho, Yamanashi, 12.VI.1990, leg. K. Hosoda (1 ♀, coll. Ito).

REDESCRIPTION: Measurements (in mm, n = 4): HW = 0.50 (0.48–0.52); TW = 0.44 (0.42–0.45); PW = 0.57 (0.55–0.58); SW = 0.78 (0.74–0.81); MW = 0.91 (0.85–0.96); AW = 0.79 (0.74–0.84); HL = 0.30 (0.29–0.31); EL = 0.19 (0.18–0.20); TL = 0.02 (0.02–0.02); PL = 0.47 (0.45–0.48); SL = 0.80 (0.75–0.85); SC = 0.75 (0.70–0.80); FB = 1.61 (1.53–1.67); BL = 2.82 (2.76–2.87). Lustre and colour: Habitus as in Fig. 3. Body rather lustrous, punctation fine (but with larger interspaces) and body covered with short setation giving a slightly greasy / dusty appearance. Whole body pitch black, only ends of tibiae and tarsi occasionally lighter. Shape and sculpture: Head quite transverse, with large eyes and inconspicuous, almost truncate temples slightly sticking out anteriorly. Neck delineated by shallow groove, microsculpture of neck not much different. Antennae with articles 4 and 5 1.59–1.74 × (male) and 1.38–1.47 × (female) longer than broad, articles 9 and 10 1.18–1.27 × longer than broad (male) and in female about as long as broad. Pronotum rather transverse, anterior corners strongly obtuse-angled, side gently arched in anterior half, moderately concave posteriorly. Before posterior corners sides with a small, slightly sticking out angle at 5/6 length, corners narrowly rounded, obtuse-angled. Posteriorly with thin marginal bead, very slightly also on anterior margin at anterior corners. Horseshoe-shaped impression strong but narrow and confined to posterior 1/3 of pronotal length, posteriorly evenly arched; middle of disc with a pair of very shallow impressions. Elytra with apical margin distinctly oblique and very slightly arched, with only a trace of a small membranous lobe near outer corners; with a pair of small, oval, slightly elongate impressions behind scutellum. Apex of abdominal tergite VII with broad palisade fringe. Punctation and microsculpture: Head and pronotum finely but densely punctured, interspaces about as puncture diameters, punctures distinct, rather sharp-edged; no microsculpture. Elytra with much more

even punctures, interspaces a little larger than puncture diameters, faint coriaceous (isodiametric) microsculpture. Abdomen with extremely tiny, rather dense punctures, interspaces about 3 × puncture diameters; extremely faint coriaceous microsculpture with transverse cells around punctures / setae bases. Pubescence: Body setation fine, extremely short and rather dense on forebody, giving surface a dusty appearance. Head and pronotum with somewhat more dense setation, pronotal side without any larger setae, elytral side with a couple of tiny, but darker and more erect bristles; direction mostly antero-medial on head and pronotum, anterior from mid-vertex to clypeus. Abdomen with longer setae, especially near sides and apices of tergites; density of setation not differing significantly between main body parts. Primary and secondary sexual features: Male: sternite VIII as in Fig. 19, tergite X as in Fig. 22, aedeagus, frontal view with parameres as in Fig. 13, median lobe with internal sclerites (in the same view) as in Fig. 15, paramere from side view as in Fig. 17. Female: ringstructure with spermatheca as in Fig. 33.

DISTRIBUTION AND BIONOMICS: This species is only known from Japan, but is rather rare and the only habitat information on the more recently collected specimens indicate leaf litter (probably by a stream).

COMMENT: The description of *Trogophloeus eminens* is practically a differential diagnosis that compares the taxon to *T. sericatus* SHARP, 1889, described in the preceding entry in the same publication. The specimen that GILDENKOV (2000a, c, 2001) treats as the holotype of *T. eminens* is in very poor condition, a teneral female, but definitely belongs to *Thinodromus sericatus*. The original description clearly distinguishes between a pair of closely allied species, and its statements are not true to *T. sericatus* but "the other species". It must also be noted that the specimen is not mounted the way D. Sharp mounted his type material, particularly not the "primary" specimens. The name is not written on the mounting card with the specimen, but on a paper slip that has been punched through many times. The description refers to a specimen from Kiga, and this specimen is not from there. Notes made on a personal visit in July 2000 indicate that the mounting card originally had a date written on the back which is now missing (probably remounted by later examiner without data copied). The date was "3/9/81", and this collecting date of G. Lewis is associated with the locality "Sanjo" under *Stenus confertus* in SHARP (1889: 332). It is therefore easily conceivable that specimens were mixed up in the past, and the original type must be considered lost, as there is not any suspicious specimen remaining in the author's collection (R. Booth, pers. comm., 6 July 2015). A specimen that contradicts every statement of the description cannot be accepted as type and it is best to reject this specimen as being the holotype of *T. eminens*. In the interest of stability of nomenclature and respecting the original author's intention a neotype designation is deemed necessary to stabilize the interpretation of *T. eminens*. Choosing the holotype of *Thinodromus pseudoeminens* GILDENKOV, 2003 as the neotype of *Trogophloeus eminens* makes the former an objective synonym of the latter. The type locality of the neotype is reasonably close to the original type locality.

Thinodromus kochi (BERNHAUER, 1939)

Trogophloeus (*Carpalimus*) *kochi* BERNHAUER 1939: 585.
Thinodromus kochi: HERMAN 1970: 392, 2001: 1769, GILDENKOV 2000b: 1075, 2000d: 844, 2001: 126.

TYPE MATERIAL: **Neotype** ♂: "**CHINA: C-Hubei**, Dahong-; shan, 31.5°N, 113.0°E,; 30-31.V.2005, leg. J. Turna \ Neotypus; Trogophloeus; kochi Bernhauer; des. Makranczy, 2015 \ Thinodromus; kochi (Bernhauer); det. Makranczy, 2015" (NMW).

ADDITIONAL MATERIAL: same data as neotype (1 ♂, 1 ♀, 71, NMW, 5, coll. Schülke, 1 ♂, 1 ♀, ZMUC, 1 ♂, 1 ♀, IZAS, 1 ♂, 1 ♀, FMNH, 1 ♂, 1 ♀, MHNG, 1 ♂, 1 ♀, MNHP, 1 ♂, 1 ♀, HNHM, 1 ♂, 1 ♀, coll. Gildenkov), same but 30.IV–1.V.2005 (65, NMW).

REDESCRIPTION: Measurements (in mm, n = 10): HW = 0.52 (0.49–0.54); TW = 0.48 (0.45–0.50); PW = 0.61 (0.56–0.64); SW = 0.78 (0.73–0.83); MW = 0.91 (0.84–0.96); AW = 0.91

(0.85–0.96); HL = 0.33 (0.30–0.35); EL = 0.18 (0.175–0.19); TL = 0.05 (0.04–0.05); PL = 0.47 (0.44–0.54); SL = 0.80 (0.75–0.84); SC = 0.76 (0.71–0.80); FB = 1.64 (1.53–1.72); BL = 3.04 (2.97–3.30). Lustre and colour: Habitus as in Fig. 4. Body moderately lustrous for rather fine and very dense punctation; only elevated middle of vertex with higher gloss. Forebody and abdomen blackish dark brown with occasional reddish tint. Legs and mouthparts reddish medium to dark brown, as also antennae but apically often darker, blackish. Shape and sculpture: Head quite transverse, with large eyes and inconspicuous, almost truncate temples slightly sticking out anteriorly. Neck poorly delineated by extremely faint groove, more by different, transverse coriaceous microsculpture (instead of punctures). Antennae with articles 4 and 5 1.21–1.35 × (male) and 1.06–1.15 × (female) longer than broad, respectively, articles 9 and 10 1.00–1.04 × (male) and 1.15–1.20 × (female) broader than long, respectively. Pronotum transverse, strongly obtuse-angled anterior corners still marked; side arched in anterior portion, posterior half feebly concave; posterior corners obtuse-angled and narrowly rounded. Posteriorly with thin marginal bead, very slightly also on anterior margin at anterior corners. Horseshoe-shaped impression strong and posteriorly transversal, side arms outwards bent, anteriorly reaching into anterior half of length; middle of disc with a pair of oblique elongate impressions. Elytra with apical margin almost straight and imperceptibly arched, but with rather broad membranous lobe in outer 2/5; a pair of small, oval, slightly elongate impressions behind scutellum faintly extending along suture. Apex of abdominal tergite VII with moderately broad but medially stronger palisade fringe. Punctation and microsculpture: Head and pronotum densely punctured with moderately fine, rather deep punctures, average interspaces much less than puncture diameters; on elytra somewhat more shallow, puncture edges less discrete, appearing less dense. Abdomen with very fine, shallow punctures and moderately dense, very faint coriaceous (isodiametric) microsculpture around punctures / setae bases. Pubescence: Body setation moderately long but very dense (especially apparent in outer posterior corners of elytra). Pronotal side with occasional, darker and slightly stronger bristles, usually not conspicuous; direction mostly anterior on head and pronotum, except pronotal sides antero-lateral. Elytra with mostly postero-lateral setae, but posterior in middle of disc. Compared to forebody, abdominal setation longer but not more dense, so appearing not much different. Primary and secondary sexual features: Male: sternite VIII as in Fig. 20, tergite X as in Fig. 23, aedeagus, frontal view with parameres as in Fig. 24, median lobe with internal sclerites (in the same view) as in Fig. 26, paramere from side view as in Fig. 28. Female: ringstructure as in Fig. 35, spermatheca as in Fig. 37.

DISTRIBUTION AND BIONOMICS: The species is known only from China, no details are known about habitat or collecting method.

COMMENT: The female holotype, the only original specimen of this taxon, was borrowed for study by M. Gildenkov, while on a research visit in Eberswalde (now Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany). On his departure (in 1996) the borrowed specimens were returned directly from Germany to the USA but this package has never reached its destination and is regarded as lost (GILDENKOV 2010). Besides three small drawings published, some comparative remarks help identifying the correct taxon, as well as communication with Dr. Gildenkov, who confirmed that the species as here presented is – to the best of his knowledge and memory – conspecific with the original type specimen. In the interest of stability of nomenclature a neotype designation is deemed necessary to stabilize the interpretation of this taxon and distinguish it from its close relative described below. The holotype was collected at "Tianmushan" in Zhejiang province, which most probably refers to 天目山, a UNESCO Biosphere Reserve (see https://en.wikipedia.org/wiki/Tianmu_Mountain) in Lin'an County (west of Hangzhou, northern Zhejiang). The locality of the neotype is about 630 km WNW of Tianmushan. Almost all *Thinodromus* species are capable of flight and are rather wide-ranging, so a distribution covering both of these places is rather plausible.

Thinodromus crinitus sp.n.

TYPE LOCALITY: China, Shaanxi province, Qin Ling Shan, river valley approx. 33°59'39"N 108°49'52"E, 720 m.

TYPE MATERIAL: **Holotype** ♂: "CHINA (Shaanxi); Qin Ling Shan /108.49E; 34.00N/ riv.[er] vall.[ey] 30 km; SSW Xian, autoroute km; 33, env. source, 600 m; 31.VIII.1995 [leg. D.] Wrase \ Sammlung; M. Schülke; Berlin" (ZMHB). **Paratypes** (27): same data as holotype (2 ♀♀, 16, coll Schülke/ZMHB, 1 ♂, IZAS, 1 ♂, FMNH, 1 ♂, MNHP, 1 ♂, MHNG, 1 ♂, ZMUC, 1 ♂, HNHM, 1 ♂, coll. Gildenkov); "**CHINA: Shaanxi**, Qin Ling Shan; 108.49 E, 34.00 N, River Valley; 30 km SSW Xian, Autoroute km 33; 600 m, sifted; 31.08.1995, leg. A. Pütz" (1 ♂, coll. Pütz); "**CHINA: C-Hubei**, Dahong-; shan, 31.5°N, 113.0°E,; 30-31.V.2005, leg. J. Turna" (1 ♂, NMW).

DIFFERENTIAL DIAGNOSIS: In size, colour and to lesser extent, body shape similar to *Thinodromus kochi*, by genital features one can be sure they are members of the same species group. The new species, however, can be distinguished at once by the extremely long setation and also the larger and deeper incision in the middle of sternite VIII apex in males.

REDESCRIPTION: Measurements (in mm, n = 10): HW = 0.51 (0.48–0.53); TW = 0.46 (0.43–0.48); PW = 0.59 (0.55–0.61); SW = 0.75 (0.69–0.79); MW = 0.86 (0.81–0.91); AW = 0.82 (0.78–0.86); HL = 0.33 (0.31–0.34); EL = 0.18 (0.17–0.19); TL = 0.045 (0.04–0.05); PL = 0.45 (0.43–0.47); SL = 0.79 (0.74–0.83); SC = 0.74 (0.70–0.78); FB = 1.60 (1.51–1.67); BL = 3.07 (2.71–3.30). Lustre and colour: Habitus as in Fig. 5. Body moderately lustrous for rather rough punctation, although interspaces may be significant (especially on elytra), their gloss often covered by the very long setation; sometimes less punctate abdomen shinier. Forebody and abdomen blackish dark brown with occasional reddish tint. Legs, mouthparts and antennae reddish medium to dark brown, antennae often apically darkening; also apices of tibiae and tarsi somewhat lighter. Shape and sculpture: Head quite transverse, with large eyes and inconspicuous, almost truncate temples slightly sticking out anteriorly. Neck poorly delineated by extremely faint groove, more by different, transverse coriaceous microsculpture (instead of punctures). Antennae with articles 4 and 5 1.35–1.45 × (male) and 1.08–1.18 × (female) longer than broad, respectively, articles 9 and 10 1.25–1.32 × (male) and 1.30–1.38 × (female) broader than long, respectively. Pronotum rather transverse, strongly obtuse-angled anterior corners rather marked, sides on a small portion even feebly concave behind; side more strongly arched before middle, posteriorly very slightly concave; posterior corners obtuse-angled and moderately broadly rounded. Posteriorly with thin marginal bead, very slightly also on anterior margin at anterior corners. Horseshoe-shaped impression strong and posteriorly transversal, side arms oblique, slightly outwards bent, anteriorly reaching into anterior half of length; middle of disc with a pair of small impressions. Elytra with apical margin slightly oblique and arched, with membranous lobe in outer 2/5, slightly pulled out in middle; with a pair of small, oval, slightly elongate impressions behind scutellum. Apex of abdominal tergite VII with broad and medially stronger palisade fringe. Punctation and microsculpture: Head and pronotum very roughly punctured with rather uneven sized punctures; some are rather large and deep, other smaller and more shallow. Interspaces vary between 0.3–2 × puncture diameters; no microsculpture. Elytra with much more even punctures, albeit on average same density and puncture sizes; puncture edges more obscured, very faint traces of coriaceous (isodiametric) microsculpture around punctures, average interspace about equal to puncture diameters. Abdomen with tiny, shallow punctures, rather scattered, very faint coriaceous (isodiametric) microsculpture around punctures / setae bases. Pubescence: Body setation extremely long, mostly fine, very erect, but moderately dense. Pronotal side with many darker, stronger setae, to a lesser extent elytral side likewise; direction mostly anterior on head and pronotum, except pronotal sides antero-lateral. Elytra with posterior (middle) or postero-lateral (sides), but near posterior margin lateral or even antero-lateral setae. Compared to forebody abdomen with somewhat finer setae, less conspicuous, but about same density. Primary and secondary sexual features: Male: sternite VIII as in Fig. 30, tergite X as in Fig. 31, aedeagus, frontal view with parameres as in Fig. 25, median lobe with

internal sclerites (in the same view) as in Fig. 27, paramere from side view as in Fig. 29. Female: ringstructure and spermatheca as in Fig. 32.

ETYMOLOGY: The specific epithet is the Latin word for "long-haired".

DISTRIBUTION AND BIONOMICS: The species is only known from China (Shaanxi and Hubei provinces) and was collected by sifting near water.

COMMENT: This species was found in the same habitat as *Thinodromus kochi*, in fact, it was first thought to be *T. kochi*, because the available information (published and unpublished notes of M. Gildenkov) refers to rather long setae covering the body. The pubescence, however, can be misleading as setae are easily rubbed off or can adhere to body when specimen is dirty (greasy). Because the main features (size, colour, shape) of the species are very similar to those of *T. kochi*, the species is here described as new.

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Dr. György MAKRANCZY
Hungarian Natural History Museum, Baross u. 13, H – 1088 Budapest, Hungary (makranczy@zoo.nhmus.hu)