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Revisional notes on Oriental *Formicomus* LA FÉRTE-SÉNECTÈRE, 1848 (Insecta: Coleoptera: Anthicidae)

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Abstract

In the present work, the Formicomus praetor group and the F. censor group are established and nine new taxa of these groups are described: Formicomus celer sp.n. (Thailand, Laos, Vietnam); F. helferi sp.n. (Burma); F. grabowskyanus sp.n. (Borneo), F. opiatus sp.n. (Thailand); F. praetor aequiparens ssp.n. (Vietnam, Thailand); F. gardneri saudeki ssp.n. (India); F. songhoanus sp.n. (Vietnam); F. laosensis sp.n. (Laos); F. discolor sp.n. (Laos). The following new synonymies are proposed: F. censor LA FÉRTE-SÉNECTÈRE, 1848 (=F. feai PIC, 1907 syn.n.); F. elongatissimus PIC, 1913 (=F. tenuis KREKICH-STRASSOLDO, 1926 syn.n.). Lectotypes of F. praetor LA FÉRTE-SÉNECTÈRE, 1848, F. censor LA FÉRTE-SÉNECTÈRE, 1848, F. tenuis KREKICH-STRASSOLDO, 1926, and F. promiscuus KREKICH-STRASSOLDO, 1929 are designated. Keys to the males of both species groups are provided.

Key words: Insecta, Coleoptera, Anthicidae, *Formicomus*, new species, species group, lectotype designation, Oriental Region.

Zusammenfassung

In dieser Arbeit werden die Formicomus praetor-Gruppe und die F. censor-Gruppe aufgestellt und neun Arten neu beschrieben: Formicomus celer sp.n. (Thailand, Laos, Vietnam); F. helferi sp.n. (Burma); F. grabowskyanus sp.n. (Borneo), F. opiatus sp.n. (Thailand); F. praetor aequiparens ssp.n. (Vietnam, Thailand); F. gardneri saudeki ssp.n. (India); F. songhoanus sp.n. (Vietnam); F. laosensis sp.n. (Laos); F. discolor sp.n. (Laos). Folgende Synonymien werden festgestellt: F. censor LA FÉRTE-SÉNECTÈRE, 1848 (=F. feai PIC, 1907 syn.n.); F. elongatissimus PIC, 1913 (=F. tenuis KREKICH-STRASSOLDO, 1926 syn.n.). Lectotypen von F. praetor LA FÉRTE-SÉNECTÈRE, 1848, F. censor LA FÉRTE-SÉNECTÈRE, 1848, F. tenuis KREKICH-STRASSOLDO, 1926 und F. promiscuus KREKICH-STRASSOLDO, 1929 werden designiert. Bestimmungstabellen für die Männchen von beiden Artengruppen werden erstellt.

Introduction

Although most *Formicomus* species have elytral setigerous punctures rather evenly spaced, a number of species possess irregular puncturation and modified pubescence of elytra. Some Afrotropical species with this irregular puncturation were treated by VAN HILLE (1967) in the *F. albolineatus* group. In the present paper, two groups of Oriental species, the *F. praetor* group and the *F. censor* group, are established. Both are characterized, among other characters, by a narrow, transverse band of elytral setae in the post-scutellar area. The two groups comprise approximately one half of the Oriental species with modified elytral pubescence.

In accordance with VAN HILLE (1950, 1958), the male secondary sexual characters were found to be the most convenient features for species identification. Although females

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are rather uniform and difficult to distinguish, differences in the morphology of ovipositor and abdominal segments have been found in several cases.

Revising the type material treated in this study, I have noted some confusion in the designation of type material of species described by La Férte-Sénectère. LA FÉRTE-SÉNECTÈRE (1848) described more than fifty species of Anthicidae originating from the collections of J. V. Helfer (NMPC), which he obtained via M. Schmidt-Göbel. Except for the types in the present La Ferté collection (MNHN), there is a number of specimens labelled: "MUSEUM PRAG, HINTER-JNDIEN [sic!], Tenasserim ?", "Coll. Helfer", mostly determined by H. von Krekich-Strassoldo and scattered in several European museums. Those from Krekich's collection (NHMW) are of special interest, as they are in most cases indicated by red "TYPE" labels. It cannot be said with certainty, whether Schmidt-Göbel gave to La Férte-Sénectère all above discussed specimens or only those from MNHN, but the following facts suggest more likely the latter possibility. The types in MNHN are mounted and labelled in quite a different way than the others (see taxonomic part below). It is obvious, that Helfer's collections have been mounted by various students for a long time (roughly between 1843 and 1920). There is also a number of misidentified (det. Krekich-Strassoldo) specimens of Formicomus from this material in NMPC but non in MNHN. Finally, Krekich-Strassoldo obviously designated only certain specimens he picked out for himself. For these reasons, the "TYPE" labelled specimens from MNHN are herein regarded as the only true types.

Acronyms:

HNHM - Hungarian Natural History Museum,	MNHN - Museum National d'Histoire Naturelle, Paris
Budapest	NHMW - Naturhistorisches Museum, Wien
MCSN - Museo Civico di Storia Naturale, Genova	NMPC - Národní Museum, Praha
MHNG - Muséum d'Histoire Naturelle, Genéve	CKD - collection Kejval, Domažlice

With the exception of *F. helferi* sp.n., the holotypes of the new species donated to NMPC are retained as permanent loan in CKD.

The terms "sternite VII" and "tergite VII" indicate the last visible, morphologically seventh, abdominal sternite and tergite. The terms "sternite VIII" and "tergite VIII" indicate the retracted, morphologically eighth abdominal sternite and tergite.

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Taxonomy

The Formicomus praetor group

The species of the *F. praetor* group can be distinguished by the following combination of characters: eyes medium-sized to large, at most moderately convex, not protruding

from lateral outline of head; pronotum distinctly medio-longitudinally impressed in anterior half; elytra with narrow, transverse band of whitish, decumbent setae in basal third; male sternite VII less sclerotized, usually with median, more or less protruding, lobe-like projection, setose apically; aedeagus with tegmen rather uniformly trilobed apically.

At present this group contains seven species, *F. praetor*, *F. anderssoni*, *F. promiscuus*, *F. celer*, *F. helferi*, *F. opiatus*, *F. gardneri*, occuring in India, Sri Lanka, Burma, Thailand, Vietnam, Laos and Philippine islands (so far only Luzon). *Formicomus apoderinus* WASMANN, 1898 from India is possibly also a member of this group but this has to be confirmed by the study of the type material.

Key to males of the Formicomus praetor group

1	Body length 2.7 - 3.2 mm; head conspicuously, at least 1.30 times as wide as pro- notum; medio-longitudinal impression of pronotum prominent, rather deep 2
-	Body length 3.4 - 4.2 mm; head at most 1.20 times as wide as pronotum; medio- longitudinal impression of pronotum less prominent, shallow
2	Profemora with short, rather wide process (Fig. 2)
-	Profemora with comparatively narrow process or minute protuberance
3	Antennomere X distinctly elongate, 1.25 times as long as wide; profemoral process slightly more projecting, with shorter outer edge; prongs of male sternite VIII as in Fig. 15, largest, subapical dent rounded <i>F. praetor parvicollis</i>
-	Antennomere X slightly, 1.06 times as long as wide; profemoral process (Fig. 2) less projecting, with longer outer edge; prongs of male sternite VIII with largest, subapical dent distinctly pointed
4	Prongs of male sternite VIII (Fig. 16) with largest, subapical dent somewhat asymmetrical, pointing proximad; inner longitudinal edge of prong weakly widened, nearly dentless, armed with single, minute dent distally <i>F. praetor aequiparens</i> ssp.n.
-	Prongs of male sternite VIII (Figs. 5, 6) with largest, subapical dent symmetrical, mediad pointing; inner longitudinal edge widened mediad and armed with 4 - 6, rather distinct, pointed dents of different size and form <i>F. praetor praetor</i>
5	Profemora with minute protuberance (Fig. 19); prongs of sternite VIII (Fig. 21) slender, lacking stiff, clustered setae
-	Profemora with distinct, more or less protruding process; prongs of sternite VIII rather wide, with stiff, clustered setae
6	Process of male profemora conspicuously elongate (Fig. 39); prongs of male sternite VIII (Fig. 40) with apical portion rather wide, with a pair of thorn-like medially pointing protrusions. <i>F. anderssoni</i>
-	Process of male profemora less elongate (Figs. 24, 30); apical portion of prongs of male sternite VIII narrow, simply shaped
7	Prongs of male sternite VIII (Fig. 26) rather wide at base; each prong with two, dorsal and ventral, rows of long, stiff setae <i>F. promiscuus</i>
-	Prongs of male sternite VIII (Fig. 32) narrow at base; each prong with single, ven- tral row of long, stiff setae

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- Dorsal face of pronotum posteriorly with moderately protruding gibbosity (Fig. 56); constricted portion of pronotum distinctly wrinkled dorsally and laterally; male sternite VII (Fig. 42) with posterior margin deeply emarginate, with small, median process bearing several, long, stiff setae apically; prongs of male sternite VIII rather strong.
- 9 Prongs of male sternite VIII as in Fig. 46, their apices simply rounded; distal portion of prongs widened mediad into two, dorso-ventrally flattened lobes and narrow, dent-like process and laterad into longitudinal, proximally weakly angulate lobe.
 F. gardneri gardneri

Formicomus praetor praetor LA FÉRTE-SÉNECTÈRE, 1848

Formicomus praetor LA FÉRTE-SÉNECTÈRE, 1848: 92.

Type material: Lectotype of [herewith designated, mounted on mica-label with basal margin enclosed in a narrow strip of green paper]: "Carteromerus Praetor mihi h. in Ind. Orient d. Schmidt [yellow handwritten label, pinned separately] \ MUSÉUM PARIS 1951, COLL: R. OBERTHUR La Ferté [printed] \ TYPE [red label, printed]" (MNHN). Paralectotype: 1 q [prepared and labelled in the same way as lectotype]: same data except: "q" (MNHN).

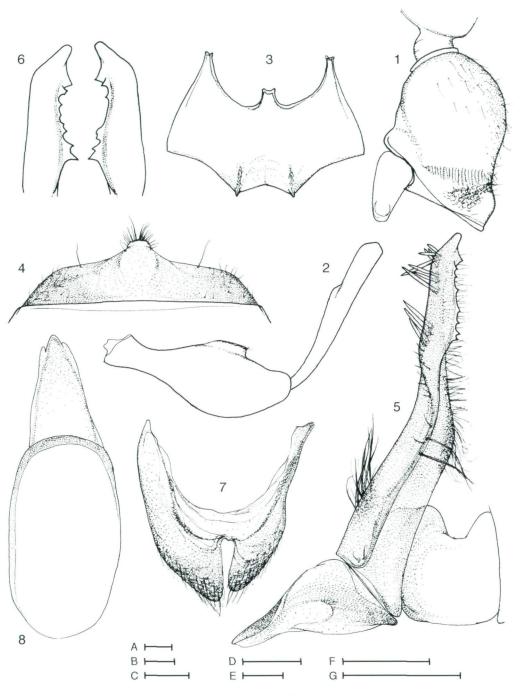
Additional material: 4 dd, 23 qq: "Museum Prag, Hinter-Jndien [sic!] Tenasserim ? \ Coll.Helfer" [bearing an identification label "praetor" by Krekich] (NMPC); 1 d, same data (HNHM); 1 d, 2 qq, same data; 1 q, same loc. data except "TYPE" [red label, printed] (NHMW); 1 d, "Thailand, Chumphon prov., Pha To env., 9°48' 98°47', 1.-12.iii.1996, P. Průdek leg."; 1 d, 1 q, same data except: "27.iii.-14.iv.1996, K. Majer leg."; 1 d, 3 qq, "NE India, Meghalaya state, W Garo Hills, Balphakram Nat. Park, alt. 400±150 m, GPS N25°11' E90°51' (WGS 84), 22.-27.v.1996, E. Jendek, O. Šauša leg." (CKD); 9 dd, 5 qq, same data (NHMW); 1 d, "India, West Bengal, delta of Ganga river, Bakhali, 10.-12.ii.1994, Z. Kejval leg." (CKD); 1 q, "Burma, Mulmein, Fieber [legit] 1871" [bearing an identification label "s. dentitibia nov." by Heberdey] (NHMW).

Description: Body length 2.7 - 3.2 mm. Dark brown to piceous; elytra unicoloured; legs, especially profemora proximally, palpi and usually first 5 - 7 antennomeres lighter, yellow-brown. Head 1.15 times as long as wide, 1.4 times as wide as pronotum; tempora strongly narrowed posteriad, temporal angles entirely obsolete. Neck short, well differentiated from head (Fig. 1). Eyes medium-sized, moderately convex, not protruding from lateral outline of head. Dorsal surface of head distinctly, irregularly punctured, with pale, decumbent setae; punctures of frons coarser, becoming finer and more widely spaced posteriorly.

Antennae relatively short, reaching barely to humeral swellings; antennomeres VII - X increasingly enlarged and flattened; antennomere X 1.06 times as long as wide; antennomere XI narrower, 1.62 times as long as wide, 1.44 times as long as antennomere X.

Pronotum slim, 1.36 times as long as wide, rounded in front, constricted shortly before posterior third. Dorsal face of pronotum (Fig. 1) impressed at constricted portion and

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Figs. 1 - 8: *Formicomus praetor praetor* (male): (1) prothorax, lateral aspect, (2) front leg, (3) metasternum, (4) sternite VII, (5) sternite VIII, dorsal aspect (6) denticulation of prongs of sternite VIII, detail, (7) tergite VIII, (8) tegmen of aedeagus. Scale (0.1 mm): A - Fig. 3; B - Figs. 1, 2; C - Fig. 4; D - Fig. 7; E - Fig. 8; F - Fig. 5; G - Fig. 6.

posteriorly with moderately protruding subbasal gibbosity. Dorsal medio-longitudinal impression rather deep, prominent. Basal margin distinctly bordered. Surface of pronotum finely and sparsely punctured antero-dorsally, nearly smooth, with only few scattered punctures antero-laterally and postero-dorsally (behind constriction), coarsely rugose at constricted portion and behind constriction, laterally; punctures of dorsal surface somewhat irregularly spaced, becoming coarser posteriad and passing into wrinkles of constriction; pale, scanty pubescence formed by short decumbent and few longer, erect setae.

Elytra longitudinally oval, 1.6 - 1.7 times as long as wide, humeri distinctly angulate; postscutellar, transverse impression shallow, but distinct. Hind wings fully developed. Surface of elytra irregularly finely punctured; pubescence formed by shorter decumbent and numerous longer, semierect to erect setae; except ordinary, pale setae with transverse, narrow band of whitish, somewhat thicker, decumbent setae in postscutellar impression; punctures more densely, evenly spaced in posterior two thirds (behind transverse band) and sparsely scattered in basal third, especially on humeri.

Male metasternum (Fig. 3) with a pair of densely punctured, setose patches, projecting into small, dent-like protuberances posteriorly. Male front legs modified (Fig. 2); profemora with rather wide, short process armed with row of minute spines along its long, outer edge; male protibia moderately enlarged close behind its mid-length, narrowed distally. Male metatibia (Fig. 14) with more or less distinct tuft of long, curved setae subapically.

Male sternite VII (Fig. 4) somewhat impressed mid-ventrally, its posterior margin with median, weakly sclerotized, lobe-like projection, setose apically. Male tergite VII simply shaped, arcuately rounded apically. Male sternite VIII (Fig. 5) with a pair of slender, bluntly pointed, posteriad projecting prongs; each prong armed with row of about 12 stiff, ventrally inserted, ventro-laterad pointing setae and 6 to 8 small, mediad pointing dents, located along inner, distinctly widened edge; subapical dent constantly more prominent, remaining dents variable in size and shape (Fig. 6). Male tergite VIII (Fig. 7) composed of two plates narrowly connected medially.

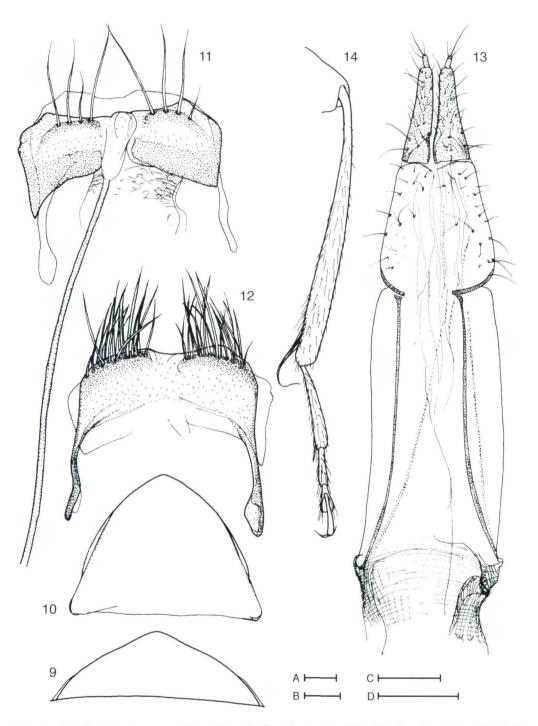
Female sternite VII (Fig. 9) and tergite VII (Fig. 10) both with posterior margin slightly pointed apically. Female sternite VIII (Fig. 11) with about 8 setae. Female tergite VIII (Fig. 12) densely setose.

Tegmen of aedeagus (Fig. 8) trilobed apically; median lobe membranous, strengthened by narrow, sclerotized apodeme. Ovipositor (Fig. 13) with coxites distinctly narrowed toward apex.

Sexual dimorphism: Female with simple front legs, lacking a pair of densely punctured patches of metasternum and a tuft of long, curved setae on metatibia.

Variability: Somewhat variable in form and size of dents of prongs of male sternite VIII and prominence of tuft of long hairs on male metatibia. Both characters seem to be more distinct in specimens from Thailand than in those from India.

Distribution: So far known from Burma, south-west Thailand and eastern part of India (Meghalaya, West Bengal). Records from Sri Lanka, Vietnam, N Thailand and western India (Karnataka, Maharashtra) by UHMANN (1983, 1990) are based on misidentified specimens of *F. anderssoni*, *F. celer* and *F. praetor parvicollis*.



Figs. 9 - 14: *Formicomus praetor praetor*: (9) female sternite VII, (10) female tergite VII, (11) female sternite VIII with spiculum (12) female tergite VIII, (13) ovipositor, (14) male metatibia. Scale (0.1 mm): A - Fig. 14; B - Figs. 9, 10; C - Figs. 11, 12; D - Fig. 13.

Differential diagnosis: *F. praetor praetor* differs from all other species of the *F. praetor* group by the combination of the following characters: medio-longitudinal impression of pronotum rather deep; process of male profemora rather short and wide (Fig. 2); female tergite VIII conspicuously setose (Fig. 12). For its separation from *F. praetor parvicollis* and *F. praetor aequiparens* see the diagnoses of the following two taxa.

Remarks: The above listed male specimen from Burma, labelled "s. dentitibia nov" by Heberdey, fully agrees with *F. praetor praetor*. Moreover, the description of *F. praetor dentitibia* has never been published.

Formicomus praetor parvicollis HEBERDEY, 1934

Formicomus prator [sic!] parvicollis HEBERDEY, 1934: 6.

Type material examined: Syntype: 1 & [abdomen dissected, mounted in micro-slide by Heberdey]: "Fraserpet Coorg [printed] \ & \ F. R. I. Sandal Insect Survey [printed] \ 1212 [number of slide] \ 17.II.30 [year printed] \ coll. Heberdey [printed] \ parvicollis Hbdy. [handwritten]" (NHMW).

Additional material: 1 J, 2 qq, "India, Karnataka, Shimoga Distr., Jog Falls, 500 m, leg. G. Topál \ 2-8.iii.1980"; 1 J, "India, Maharashtra, Bhaja, leg. G. Topál \ 6.viii.1967" (HNHM); 1 J, 1 q, "India, Maharashtra, Lonvala, 80km E Bombay, 13.ix.1991, leg. R. Schuh" (CKD).

Diagnosis: Body length 3.1 - 3.4 mm. In general appearance very similar to *F. praetor praetor*, but differs by the following characters. Coloration light brown, with rufous tinge. Head and pronotum slightly narrower; elytra less elongate, narrower at humeri, more convex in mid-length; distal antennomeres more elongate, antennomere X 1.25 times as long as wide; subapical tuft of long setae of male metatibia indistinct. Prongs of sternite VIII as in Figure 15, their lateral outline somewhat more angulate; largest, subapical dent rounded; longitudinal inner edge not widened, very finely, almost indistinctly denticulated. Coxites of female ovipositor (Fig. 17) slightly narrowed in mid-length.

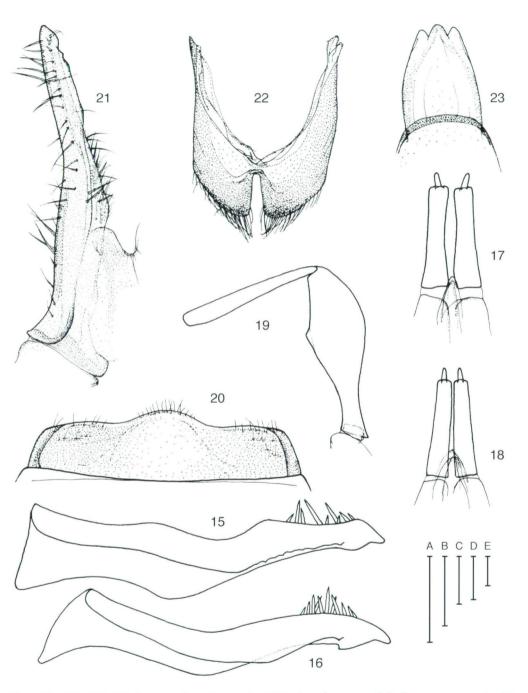
Distribution: Obviously restricted to the western part of India; so far known from Maharashtra and Karnataka.

Remarks: According to the original description, HEBERDEY (1934) described this subspecies after material originating from the survey of the insect fauna of sandal tree. It was collected in February on the locality "Coorg: Fraserpet". The above listed specimen, despite of the lacking "TYPE" label, bears the corresponding data and must be thus regarded as belonging to the type series.

Formicomus praetor aequiparens ssp.n.

Holotype 5: "THAI, PALONG 19°55'N 99°06'E, 750 m, 26.-28.V.199, Vít Kubáň leg. \ Thailand 1991 Thanon Thong Chai D. Král & V. Kubáň" (NMPC). **Paratypes:** 1 d, "THAI, FANG 19°55'N 99°12'E, 300 m, 25.V.1991, Vít Kubáň leg. \ Thailand 1991 Thanon Thong Chai D. Král & V. Kubáň"; 1 q, "Thai, PALONG (Akha vill.)19°55'N 99°06'E, 750 m, 26.-28/5.1991, lgt. D. Král" (CKD); 2 dd, "S-VIETNAM, Nam Cat Tien Nat. Park 1.-15.5.1994, Pacholátko & Dembický \ Formicomus apoderinus Wasm. det. G. Uhmann 1996" (NHMW).

Diagnosis: Body length 3.1 - 3.2 mm. In general appearance very similar to *F. praetor praetor*, but differs by the following characters. Somewhat lighter coloured, subapical tuft of long setae of male metatibia absent. Prongs of male sternite VIII (Fig. 16) fluently



Figs. 15 - 23: (15, 16) Prongs of male sternite VIII, dorsal aspect: (15) *F. praetor parvicollis*, (16) *F. praetor aequiparens*, (17, 18) Coxites of ovipositor: (17) *F. praetor parvicollis*, (18) *F. praetor aequiparens*, (19 - 23) *F. helferi* (male): (19) front leg, (20) sternite VII, (21) prong of sternite VIII, dorsal aspect (22) tergite VIII, (23) apex of tegmen of aedeagus. Scale (0.1 mm): A - Fig. 19; B - Fig. 20; C - Fig. 22; D - Figs. 17, 23; E - Figs. 15, 16, 18, 21.

curved; largest subapical dent asymmetrical, proximad pointing; longitudinal, inner edge weakly widened mediad, nearly dentless, armed with single, minute dent distally. Coxites of female ovipositor (Fig. 18) rather slim, at most very slightly narrowed toward apex.

Distribution: Thailand, Vietnam.

Etymology: From Latin *aequiparens* (seemingly identical), referring to the considerable external similarity with *F. praetor praetor*.

Formicomus helferi sp.n.

Holotype δ: "MUSEUM PRAG, HINTER-JNDIEN [sic!] Tenasserim ? [printed] \ Coll. Helfer [printed] \ ρ \ praetor det. v. Krekich [partly handwritten]" (NMPC).

Diagnosis: Body length 2.9 mm. In general appearance very similar to *F. praetor*, but differs by the following characters. Male front legs modified (Fig. 19); profemora with minute protuberance; protibia nearly simple. Male sternite VII (Fig. 20) with posterior margin less projecting medially. Prongs of male sternite VIII (Fig. 21) rather slim, their inner longitudinal edge moderately widened, nearly straight, slightly sinuous distally; surface of prongs sparsely and rather finely setose; no stiff or clustered setae. Male tergite VIII (Fig. 22). Apex of tegmen of aedeagus (Fig. 23).

Female unknown.

Distribution: So far known only from the type locality, probably Tenasserim in south Burma.

Differential diagnosis: With respect to the nearly simple front legs and the morphology of sternite VIII, males of *F. helferi* can not be confused with those of other members of the *F. praetor* group.

Etymology: Named in honour of the late J. V. Helfer and his old, but still remarkable collection.

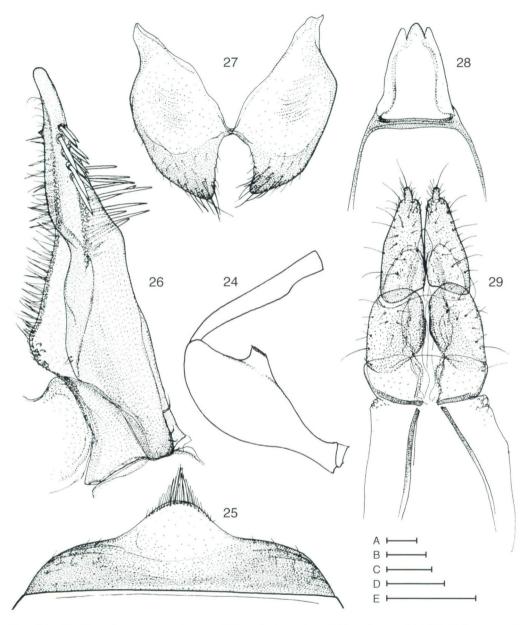
Remarks: The male holotype of *F. helferi* was found among twentyseven, identically labelled specimens of *F. praetor* from Helfer's collection (NMPC). In the past, it was mistaken for female of the latter species due to the nearly simple front legs.

Formicomus promiscuus KREKICH-STRASSOLDO, 1929 stat.n.

Formicomus praetor promiscuus KREKICH-STRASSOLDO, 1929: 474.

Type material: Lectotype & [herewith designated, abdomen dissected, mounted in micro-slide]: "PHILIPP. ISL. Manila Böttcher 3.11.914 [printed] \ 603 A [number of slide] \ TYPE [red label, printed] \ coll. Heberdey [printed] \ praetor-promiscuus Kr. det. v. Krekich [species name handwritten] \ s. promiscuus Krek. [handwritten]" (NHMW). **Paralectotypes:** 2 dd, 2 qq, same data as holotype except: "CO-TYPE"; 2 qq, same data except: "PHILLIP. ISL. Luzon, Mt. Makeling Baker \ CO-TYPE" (NHMW).

Diagnosis: Body length: 2.9 - 3.1 mm. In general appearance very similar to *F. praetor*, but differs by the following characters. Male front legs modified (Fig. 24); profemora with narrow, more projecting process, obliquely truncate apically. Male sternite VII as in Figure 25. Prongs of male sternite VIII (Fig. 26) rather wide proximally; apical portion slim, rounded apically; inner side widened mediad into longitudinal lobe, armed with



Figs. 24 - 29: *Formicomus promiscuus*: (24) male front leg, (25) male sternite VII, (26) prong of male sternite VIII, dorsal aspect (27) male tergite VIII, (28) apex of tegmen of aedeagus, (29) ovipositor. Scale (0.1 mm): A - Fig. 24; B - Fig. 27; C - Fig. 25; D - Fig. 28; E - Figs. 26, 29.

single minute dent distally; each prong with dorsal and ventral row of long, thick setae. Male tergite VIII (Fig. 27). Tegmen of aedeagus (Fig. 28). Female sternite VIII and tergite VIII weakly sclerotized, with only few setae postero-laterally. Ovipositor (Fig. 29) with coxites large, rather stout.

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Distribution: So far known only from the island of Luzon (Philippines).

Remarks: KREKICH-STRASSOLDO (1929) described *F. promiscuus* as a subspecies different from nominotypical *F. praetor praetor* by its unicoloured, piceous-black body. While this feature was found to be variable, the examination of the male secondary sex characters has revealed a number of significant differences (cf. Figs. 5, 26) justifying specific status.

Formicomus celer sp.n.

Holotype d: "Hoa Binh Tonkin de Cooman [printed] \ HOLOTYPE [red label, printed] \ Museum Paris Coll. M. Pic [printed] \ Formicomus celer n.sp. P. Bonadona dét. 1983 [handwritten]" (MNHN). Allotype o: same loc. data as holotype, except: "ALLOTYPE" (MNHN). Paratypes: 1 d, 1 o, same loc. data as holotype, except: "PARATYPE"; 6 dd, 1 q, same loc. data as holotype, but handwritten [in two males abdomen dissected, mounted in slides no. 219831, 219832 by Bonadonal, except: "PARATYPE" (MNHN); 4 dd, 22 qq, "THAI, THIMONGTHA, 350 m, 15°02'N 98°35'E, 9.-13.IV.1991, Vít Kubáň leg. \ Thailand 1991 Thanon Thong Chai, D. Král & V. Kubáň"; 1 d, 1 o, "THAI, UMPHANG riv., 1000 m, 16°07'N 99°00'E, 28.IV.-6.V.1991, Vít Kubáň leg. \ Thailand 1991 Thanon Thong Chai, D. Král & V. Kubáň"; 2 çç, "THAI, FANG, 19°55'N 99°12'E, 300 m, 25.V.1991, Vít Kubáň leg. \ Thailand 1991 Thanon Thong Chai, D. Král & V. Kubáň"; 1 d, 1 g, "S VIETNAM, Nam Cat Tien Nat. park, 1.-15.5.1994, P. Pacholátko & L. Dembickiý leg." (CKD); I d, I q, same data, except: "Formicomus apoderinus Wasm. det. G. Uhmann 1996" (NHMW); 5 dd, 1 q, "VIETNAM: Tanh liet SE Hanoi 23.IV.1996 Exp. Gy. TOPÁL \ Nr. 140 beaten from trees \ Formicomus praetor La Ferté det. G. Uhmann 1982"; 1 o, "Xuan dinh NWof Hanoi 26-29.IV.1966 Exp. Gy. Topál \ Nr. 196 beaten from hedge \ Formicomus praetor La Ferté det. G. Uhmann 1982"; 1 o, "Dinh vy NE of Hanoi 15.IV.1996 Exp. Gy. Topál \ Nr. 60 beaten from bushes \ Formicomus praetor La Ferté det. G. Uhmann 1982" (HNHM); 1 3, "LAOS Tranninh H. Perrot \ Coll. H. Perrot in Coll. M.Curti MHNG-1991 \ Formicomus apoderinus Wasm. det. G. Uhmann 1994"; 1 d "THAILAND prov. Chiang Mai, Chiang Mai 320 m, 15.V.86, P. Schwendinger \ Formicomus praetor La Ferté det. G. Uhmann 1989"; 1 d, "Thailand, Chiang Mai Prov. Chiang Mai, 300 - 340 m, 18.10.1990, P. Schwendinger \ Formicomus castigator Laf. det. G. Uhmann 1993" (MHNG); 2 dd, 1 q, "LAOS centr., 70 km NE Vientiane, BAN PHABAT env. N 18°16.1, E 103°10.9, 150 m, 27.IV. - 1.V.1997, E. Jendek & O. Šauša leg." (CKD).

Diagnosis: Body length 2.8 - 3.4 mm. In general appearance very similar to *F. praetor praetor*, but differs by the following characters. Elytra brown, either unicoloured or with basal third more pale, rufous. Male profemora (Fig. 30) with short, bluntly pointed process, armed with few minute spines subapically. Male metatibia lacking subapical tuft of long setae. Densely punctured, setose patches of male metasternum less distinct, not passing into small protuberance posteriorly. Male sternite VII as in Figure 31. Prongs of male sternite VIII (Fig. 32) rather strong; each prong armed with a pair of subapical dents and row of long, thick, ventrally inserted, ventro-laterad pointing setae, located far from pointed apex. Male tergite VIII (Fig. 33). Tegmen of aedeagus (Fig. 34) trilobed apically. Both female sternite VIII and tergite VIII membranous, lacking distinct setae. Ovipositor (Fig. 35) with coxites comparatively stout.

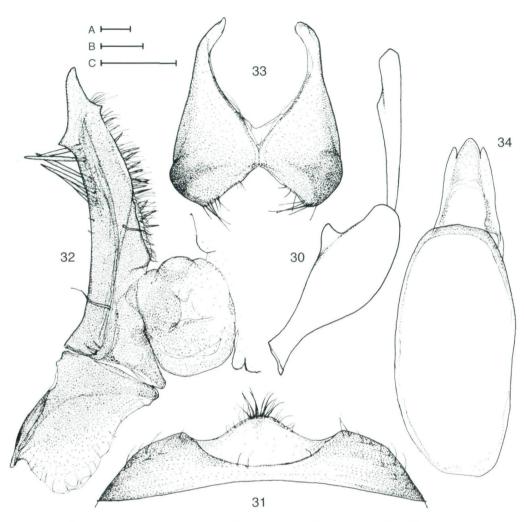
Distribution: Thailand, Laos, and Vietnam.

Differential diagnosis: Male specimens of *F. celer* can be easily recognized by the shape of the profemoral process and the prongs of male sternite VIII. Females differ by glabrous sternite VIII and tergite VIII.

Etymology: Named by P. Bonadona (see remarks), Latin celer (quick, nimble).

Remarks: The description of *F. celer* is based on rather extensive material from CKD and several other museums. The holotype, allotype and nine paratypes were found, fully

KEJVAL: Revisional notes on Oriental Formicomus (Coleoptera: Anthicidae)

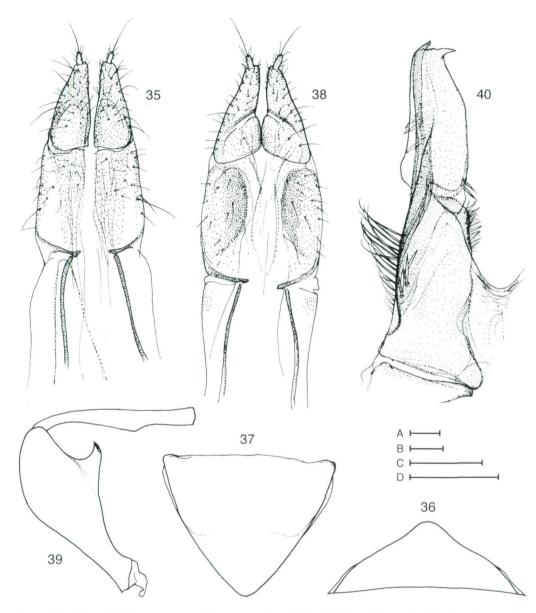


Figs. 30 - 34: *Formicomus celer* (male): (30) front leg, (31) sternite VII, (32) prong of sternite VIII, dorsal aspect (33) tergite VIII, (34) tegmen of aedeagus. Scale (0.1 mm): A - Fig. 30; B - Figs. 31, 33; C - Figs. 32, 34.

designated in the collection of the French entomologist Paul Bonadona (MNHN). It is believed, that the description of *F. celer* has never been published, since no record of the description was found in the "Zoological Record" and Bonadona's entomological inheritance (deposited in MNHN), which includes the list of his bibliography.

Furthermore, in Heberdey's collection (NHMW), there is a torso of a *Formicomus* specimen, from north Vietnam ("Hoa-Binh Tonkin"), bearing an identification label: "s. Pici nov." by Heberdey. Of this single specimen only the dissected abdomen is left, but the shape of the prongs of sternite VIII leaves no doubt that it belongs to *F. celer*. However, the description of "*F. praetor pici*" has never been published.

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Figs. 35 – 40: (35) *Formicomus celer*, ovipositor. (36 - 40) *F. anderssoni*: (36) female sternite VII, (37) female tergite VII, (38) ovipositor, (39) front leg in male, (40) prong of male sternite VIII, dorsal aspect. Scale (0.1 mm): A - Fig. 39; B - Figs. 36, 37; C - Figs. 35, 38; D - Fig. 40.

Formicomus anderssoni BONADONA, 1986

Formicomus anderssoni BONADONA, 1986: 70, figs. 29-36.

Material examined: 3 dd, 5 qq, "Sri Lanka, NW Prov., Galkulama, SE Anuradhapura, 27.vii.1968, leg. J. Balogh" (HNHM).

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Diagnosis: Body length 3.1 - 3.6 mm. In general appearance very similar to *F. praetor praetor*, but differs by the following characters. Antennomere X distinctly longer than wide. Process of male profemora (Fig. 39) conspicuously long and slender. Subapical tuft of long setae of male metatibia constantly prominent. Prongs of male sternite VIII as in Figure 40. Female sternite VII (Fig. 36) more produced apically. Female tergite VII (Fig. 37) tapering, with apical portion somewhat upturned. Ovipositor (Fig. 38) with coxites rather stout.

Distribution: So far recorded only from Sri Lanka.

Remarks: Although not mentioned by BONADONA (1986), *F. anderssoni* belongs to species related to *F. praetor*. It especially resembles *F. promiscuus* by the comparatively long, narrow process of male profemora, but differs from the latter by the morphology of prongs of male sternite VIII (cf. Figs. 26, 40).

Formicomus gardneri gardneri HEBERDEY, 1934 (Fig. 46)

Formicomus gardneri HEBERDEY, 1934: 6, fig. 1.

Type material examined: Syntype σ [abdomen dissected, mounted in micro-slide, aedeagus missing]: "Fraserpet, Coorg. [printed] \F. R. I. Sandal Insect Survey [printed] \ σ \I.V.30 [year printed] \1174 [number of slide] \coll. Heberdey [printed] \gardneri Hbdy.[handwritten]" (NHMW).

Differential diagnosis: Externally, *F. gardneri gardneri* differs from all other members of *F. praetor* group (except *F. opiatus* and *F. gardneri saudeki*) by larger size, more robust appearance and by the shallow medio-longitudinal impression of the pronotum. For the separation of the two taxa in brackets see their respective diagnoses.

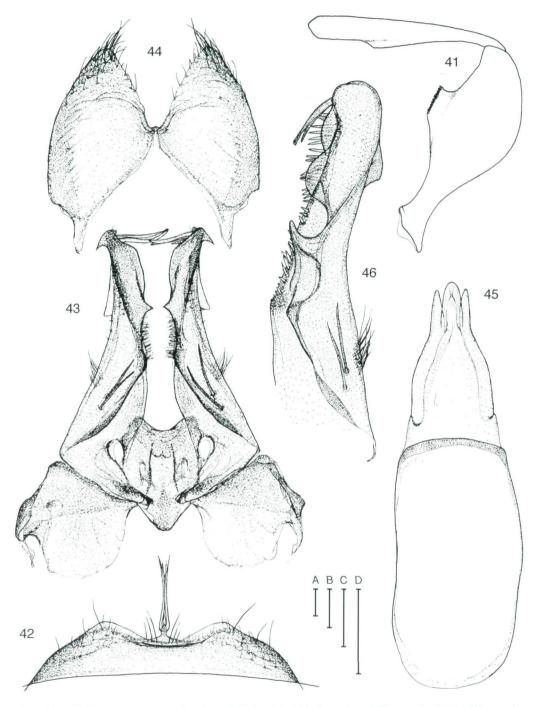
Distribution: So far known only from the type locality in western India (south-west Karnataka).

Remarks: Similarly as in *F. praetor parvicollis*, the only examined specimen of *F. gardneri* bears data corresponding with the original description and must be thus regarded as belonging to the type series.

Formicomus gardneri saudeki ssp.n.

Holotype 5: "NE India, Meghalaya state, West Garo hills reg., TURA, alt. 700 ± 100 m, GPS N59°30.7' E90°13.9' (WGS 84), 29.-31.V.1996, E. Jendek & O. Šauša leg." (NMPC). **Paratypes:** 1 d, 2 qq, same data as holotype; 1 q, "NE India, Meghalaya state, West Garo Hills, NOKREK Nat. Park, alt. 1100 ± 150 m, GPS N25°29.6' E90°19.5' (WGS 84), 9.-17.V.1996, E. Jendek & O. Šauša leg."; 2 dd, 2 qq, "NE INDIA: Meghalaya; 3 km E Tura; 25°30'N 90°14'E; 18.iv.1999; 1150 m; Dembický & Pacholátko leg." (CKD).

Diagnosis: Body length 3.4 - 4.2 mm. In general appearance and most characters (Figs. 41, 42, 44), identical with *F. gardneri gardneri*, but differs by the morphology of prongs of male sternite VIII (Fig. 43). Each prong armed subapically with strong, ventro-laterad pointing dent; distal portion widened mediad into longitudinal, dorso-ventrally flattened lobe, with distinct, pointed dent proximally; outer side dilated into longitudinal, proximally sharply angulate lobe. Tegmen of aedeagus (Fig. 45) conspicuously trilobed apically. Female sternite VIII and tergite VIII both distinctly setose along posterior margin. Ovipositor (Fig. 54) with coxites rather short.



Figs. 41 - 46: *Formicomus gardneri saudeki* (male): (41) front leg, (42) sternite VII, (43) sternite VIII, dorsal aspect, (44) tergite VIII, (45) tegmen of aedeagus. (46) *F. gardneri gardneri*, prong of male sternite VIII, dorsal aspect. Scale (0.1 mm): A - Fig. 41; B - Figs. 42, 44; C - Figs. 43, 45; D - Fig. 46.

Distribution: Known only from the type locality in north-eastern India (Meghalaya). **Etymology:** Derived from the surnames of both collectors of the holotype specimen.

Formicomus opiatus sp.n.

Holotype d: "NW Thailand, Mae Hong Son prov., Ban Huai Po, 9.-16.V.1991, lgt. J. Horák" (NMPC). Paratype: 1 q, same data as holotype (CKD).

Description: Body length 3.9 mm. Head and pronotum deeply rufous; antennae, legs, especially profemora proximally, and palpi somewhat lighter; elytra distinctly bicoloured, largely piceous, with basal third rufous. Head 1.15 times as long as wide; tempora strongly narrowed posteriad; temporal angles entirely obsolete. Neck short, differentiated from head. Eyes large, moderately convex, not protruding from lateral outline of head. Dorsal surface of head distinctly, irregularly punctured, with short, pale, decumbent setae; punctures of frons coarser, becoming finer and more widely spaced posteriorly. Antennae comparatively short, reaching to humeral swellings; antennomeres VII - X increasingly enlarged; antennomere X distinctly elongate, 1.27 times as long as wide; antennomere XI twice as long as wide, 1.42 times as long as antennomere X.

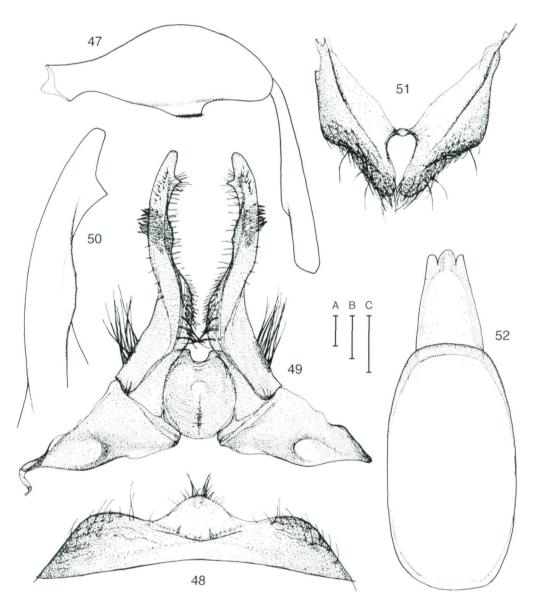
Pronotum 1.34 times as long as wide, moderately narrower than head, widely rounded in front, constricted before base. Dorsal face of pronotum slightly impressed at constricted portion and flattened posteriorly (Fig. 55). Dorsal medio-longitudinal impression shallow. Surface of pronotum finely irregularly punctured antero-dorsally (before constriction), nearly smooth with only few, scattered punctures antero-laterally and dorsally between constriction and base, distinctly rugose behind constriction, laterally; punctures of dorsal surface more densely spaced alongside of medio-longitudinal impression; constricted portion of pronotum wrinkled laterally and with a few punctures and obsolete wrinkles dorsally. Basal margin distinctly bordered. Pale pubescence composed of short, more numerous, decumbent setae and a few longer, erect setae. Male metasternum with small, densely punctured, setose patches posteriorly, similarly as in Figure 3.

Elytra 1.66 times as long as wide, humeri distinctly angulate; postscutellar transverse impression shallow, but rather distinct. Hind wings fully developed. Surface of elytra sparsely, irregularly punctured and pubescent; pubescence formed by shorter decumbent and numerous longer, semierect to erect setae; except ordinary setae with narrow, transverse, rather dense band of whitish, somewhat thicker, decumbent setae; punctures much more dense, evenly spaced in posterior two thirds, behind transverse band, and sparsely scattered in basal third, especially on humeri.

Male front legs modified (Fig. 47); profemora with rather wide, short process, armed with minute spines along its outer edge; protibia moderately enlarged shortly behind mid-length, narrowed distally.

Male sternite VII (Fig. 48) with lobe-like median protrusion, setose along rounded apical margin. Male tergite VII slightly tapering apically. Male sternite VIII (Fig. 49) with a pair of slender, curved, posteriad projecting prongs; each prong with single, mediad pointing dent, with slightly rugged, but dentless inner edge (Fig. 50) and with cluster of stiff ventrally inserted setae, located far from blunt apex. Male tergite VIII (Fig. 51) composed of paired plates, narrowly connected medially. Female sternite VII and tergite

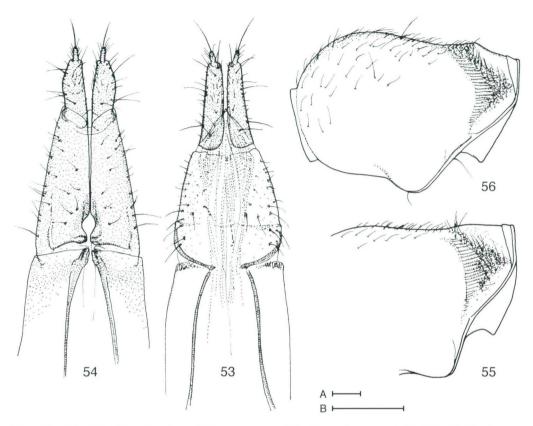
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Figs. 47 - 52: *Formicomus opiatus* (male): (47) front leg, (48) sternite VII, (49) sternite VIII, dorsal aspect, (50) prong of sternite VIII, detail, (51) tergite VIII, (52) tegmen of aedeagus. Scale (0.1 mm): A - Fig. 47; B - Figs. 48, 51; C - Figs. 49, 50, 52.

VII with posterior margin arcuately rounded, weakly tapering apically. Female sternite VIII and tergite VIII both distinctly setose posteriorly. Tegmen of aedeagus (Fig. 52) trilobed apically. Ovipositor (Fig. 53) with coxites long and slender, slightly narrowed toward apex.

Sexual dimorphism: Female with front legs simple, lacking densely punctured patches of metasternum.



Figs. 53 - 56: (53, 54) ovipositor: (53) *F. opiatus*, (54) *F. gardneri saudeki*. (55, 56) Prothorax, lateral aspect: (55) *F. opiatus*, (56) *F. gardneri*. Scale (0.1mm): A - Figs. 55, 56; B - Figs. 53, 54.

Differential diagnosis: *Formicomus opiatus* can be distinguished from most members of the *F. praetor* group (except *F. gardneri*) by its larger size, more robust appearance and the distinct but somewhat less prominent medio-longitudinal impression of the pronotum. It differs from *F. gardneri* by the nearly unwrinkled, flattened postero-dorsal third of the pronotum as well as by many details in the morphology of the male sternites VII and VIII. Moreover, females of *F. opiatus* differ from *F. gardneri saudeki* ssp.n. by the shape of the ovipositor (cf. Figs. 53, 54).

Distribution: So far known only from the type locality in north-west Thailand.

Etymology: Referring to the location of the type locality; this new species was found in the so called "Golden Triangle", the area notorious for production of opium.

Formicomus apoderinus WASMANN, 1898

Formicomus apoderinus WASMANN, 1898: 483.

Remarks: With respect to the presence of elytral band of setae and rather distinct dorsal, medio-longitudinal impression of pronotum (see the original description), there is no doubt, that this species belongs to the *F. praetor* group. It was described after a single, probably female specimen, collected by R. Ch. Wroughton in western India (Gudjarat). WASMANN (1898) mentioned the similarity of *F. apoderinus* and *F. praetor*, but he found the former different by the conspicuously large head and the convex, basally strongly narrowed elytra. Considering the distribution of *F. praetor* and the above mentioned differences, *F. apoderinus* should be close or even identical with *F. praetor parvicollis*. Unfortunately, the type material of *F. apoderinus* was not available for the present study. It should be deposited in Wasmann's collection in Natuurhistorisch Museum Maastricht, Netherlands.

The Formicomus censor group

Members of the *F. censor* group can be distinguished by the following combination of characters. Eyes conspicuously large, protruding from lateral outline of head; medio-longitudinal impression of pronotum absent or at most very slightly indicated (*F. fasciatus*); elytra with narrow, transverse band of whitish setae in basal third and with vague indication of another wider band of setae in apical third; male sternite VII strongly sclerotized, distinctly hollowed ventrally before base and more or less projecting posteriad into peculiar dorso-ventrally flattened lobe; aedeagus elongate, apex of tegmen of variable shape but never trilobed apically.

At present this group contains nine species, F. censor, F. grabowskyanus, F. fasciatus, F. elongatissimus, F. pilumnus, F. castigator, F. songhoanus, F. discolor, F. laosensis, occuring in Bangladesh, Burma, Thailand, Vietnam, Laos, and Indonesia (Borneo).

Key to males of the Formicomus censor group

1	Profemora with inconspicuous protuberance (Figs. 83, 88)
-	Profemora with rather prominent process
2	Lobe of sternite VII (Fig. 84) strongly narrowed, with sides sub-parallel distally; prongs of sternite VIII as in Fig. 85
-	Lobe of sternite VII (Fig. 89) less narrowed, with sides arcuately converging toward apex; prongs of sternite VIII as in Fig. 90
3	Profemoral process (Fig. 57) lobe-like, flattened, rounded apically; lobe of sternite VII (Fig. 58) weakly projecting, with posterior margin arcuately rounded; prongs of sternite VIII as in Fig. 59. <i>F. censor</i>
-	Profemoral process narrow, obliquely truncate or pointed 4
4	Profemoral process (Fig. 76) rather long, somewhat curved, obliquely truncate api- cally; protibia with distinctly protruding longitudinal edges shortly behind mid- length; sternite VII (Fig. 77); prongs of sternite VIII (Fig. 78); paired plates of ter- gite VIII (Fig. 79) conspicuously narrow, tongue-like
-	Profemoral process short, straight, tapering, thorn-like; protibia nearly simple, with inconspicuous protuberances or barely protruding edge distally; plates of tergite VIII rather wide
5	Lobe of sternite VII (Fig. 95) parallel-sided in distal half, deeply incised apically; prongs of sternite VIII (Fig. 96)

-	Lobe of sternite VII with lateral outlines distinctly converging, at most moderately, narrowly incised apically
6	Prongs of sternite VIII narrowed distally, finger-like, with claw-shaped apex (Figs. 66, 72)
-	Prongs of sternite VIII rather wide, flattened distally, with rounded apex
7	Lobe of sternite VII (Fig. 71) conspicuously projecting, with simple, obtuse apex; prongs of sternite VIII (Fig. 72) with number of thick, short setae mid-dorsally, without tuft of long setae sub-basally
-	Lobe of sternite VII (Fig. 64) less projecting, slightly incised apically; prongs of sternite VIII (Fig. 65) with less numerous, fine, longer setae mid-dorsally, with tuft of long setae sub-basally. <i>F grabowskyanus</i> sp.n.
8	Lobe of sternite VII (Fig. 107) incised apically; prongs of sternite VIII (Fig. 108) with a cluster of long mostly obtuse setae dorsally <i>F. laosensis</i> sp.n.
-	Lobe of sternite VII (Fig. 101) pointed apically; surface of prongs of sternite VIII (Fig. 102) finely setose

Formicomus censor La Férte-Sénectère, 1848

Formicomus censor LA FÉRTE-SÉNECTÈRE, 1848: 88.- KREKICH-STRASSOLDO 1931: 14, figs. 28a, b. Formicomus feai Pic, 1907: 341. syn.n.

Type material:

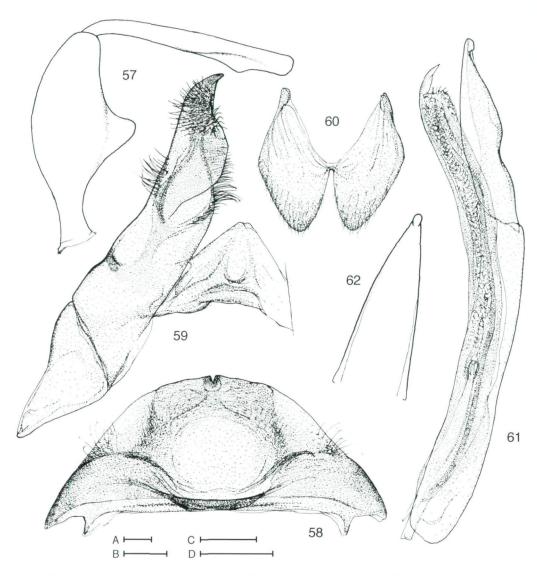
Formicomus censor: Lectotype d [herewith designated, mounted on small, triangular label]: "Carteromerus Censor mihi, h. Ind. Orient d. Schmidt [yellow, handwritten, pinned separately and common for all type specimens]\MUSÉUM PARIS 1952, COLL. R. OBERTHUR La Ferté [printed]\TYPE [red label, printed]" (MNHN). Paralectotypes: 2 qq [one of them in rather poor stand, without head], same preparation, labels and data as lectotype, one of them with "q" (MNHN).

Formicomus feai: **Holotype** δ : "Birmania Shwegoo Myo Fea 12.6.1886 [partly printed] \ δ [printed] \ TYPUS [red printing in red frame] \Formicomus feai Pic [handwritten] \Feai Pic [handwritten] \Mus. Civ. Genova [printed]" (MCSN).

Additional material: 1 d, "Museum Prag, Hinter-Jndien [sic!], Tenasserim ? 555 A [number of microslide] Coll. Helfer TYPE [red label, printed]", [bearing an identification label "censor" by Krekich] (NHMW); 5 dd, 6 qq, same loc. data (NHMW, NMPC, CKD); 1 d, "India or. 551A [number of microslide] Formicomus subaeneus Motsch Ind. or.", [bearing an identification label "censor" by Krekich]; 1 q, "Burma, Tenasserim", [bearing an identification label "Feai" by Pic] (NHMW); 1 d, 2 qq, "Laos centr., Khammouan prov., Nam Theun env., Route no. 8, alt. 500 \pm 20 m, N 17°50.7 E 105°03.2 (GPS), 2-4.v.1998, M. Strba & R. Hergovits leg." (CKD).

Description: Body length 3.4 - 3.8 mm; brown; legs, antennae, mouthparts, palpi and abdominal segments somewhat lighter, with rufous tinge. Head including neck 1.2 times as long as wide, 1.4 times as wide as pronotum; tempora strongly narrowed posteriad, close behind eyes, with lateral outline barely convex in dorsal view; temporal angles entirely obsolete. Neck short, clearly differentiated from head. Eyes large, rather convex, protruding from lateral outline of head. Dorsal surface of head finely punctured and corrugated; corrugation becoming finer, less distinct posteriad, especially in occipital area; scanty pubescence composed of pale, short decumbent setae.

Antennae long, slender, reaching distinctly beyond humeri, all antennomeres cylindrical, at most slightly flattened or enlarged distally; antennomere X more than twice as long as wide; antennomere XI 2.85 times as long as wide, 1.18 times as long as antennomere X.



Figs. 57 - 62: *Formicomus censor* (male): (57) front leg, (58) sternite VII, (59) prong of sternite VIII, dorsal aspect, (60) tergite VIII, (61) aedeagus, lateral aspect, (62) apex of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Figs. 57, 60; B - Fig. 58; C - Figs. 61, 62; D - Fig. 59.

Pronotum elongate, more than 1.6 times as long as wide, distinctly narrower than head including eyes, regularly rounded in front, constricted shortly before basal third. Dorsal face of pronotum (Fig. 112) somewhat impressed in constricted portion and posteriorly with distinctly protruding subbasal gibbosity. Dorsal surface finely corrugate, matt, except area between subbasal gibbosity and base; lateral sides comparatively smooth anteriorly and distinctly rugose behind constriction. Basal margin distinctly bordered. Pubescence similar to that of head. Male metasternum simple, lacking longitudinal ribs or densely punctured patches.

Elytra rather short, 1.4 times as long as wide, convex posteriorly; humeri distinctly angulate; postscutellar transverse impression shallow, but rather distinct. Hind wings fully developed. Surface of elytra irregularly punctured and pubescent; pubescence formed by shorter decumbent and numerous longer semierect to erect setae; except ordinary setae with narrow, transverse band of whitish, decumbent setae in postscutellar impression and rather vague indication of another, much wider whitish band in apical third of elytra; the anterior band somewhat extended along suture anteriad and becoming less distinct laterad; basal third of elytral surface, before transverse band, smooth and glossy, with only few punctures, scattered mainly on humeri; posterior two thirds much more densely, evenly punctured.

Male front legs modified (Fig. 57); profemora with conspicuously projecting, lobe-like protrusion, rounded apically; protibia impressed and with distinctly protruding longitudinal edge in distal half.

Lobe of male sternite VII (Fig. 58) weakly projecting, its posterior margin arcuately rounded, slightly incised apically. Male tergite VII with posterior margin somewhat angulately rounded, bluntly pointed apically. Male sternite VIII (Fig. 59) with a pair of posteriad projecting prongs; each prong rather stout proximally, narrowed toward pointed, somewhat curved apex; dorsal side dilated distally into dorso-ventrally flattened lobe. Male tergite VIII (Fig. 60), composed of two paired plates, narrowly connected medially.

Female sternite VII (Fig. 113) with posterior margin slightly impressed subapically. Female tergite VII (Fig. 114) nearly regularly rounded apically. Female sternite VIII (Fig. 115) and tergite VIII (Fig. 116) sparsely setose along posterior margin.

Aedeagus as in Figs. 61, 62; distal portion of tegmen moderately impressed dorsally, with lateral outlines fluently narrowing toward somewhat enlarged rounded apex; apex of median lobe terminating in finely membranous, pointed process. Ovipositor (Fig. 117) with coxites slim, somewhat narrowed toward apex.

Sexual dimorphism: Females with simple front legs.

Distribution: So far known from south Burma and Laos.

Differential diagnosis: Males of *F. censor* differ from all other members of the *F. censor* group by the prominent, flattened, apically rounded profemoral process and by the comparatively less projecting, arcuately rounded lobe of sternite VII.

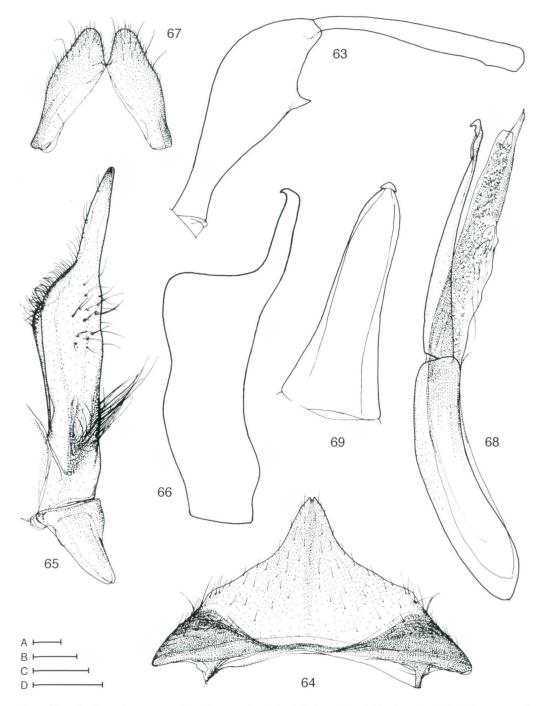
Formicomus grabowskyanus sp.n.

Formicomus feai var. grabowskyi PIC, 1913a: 156.

Holotype d: "S. O. Borneo Grabowsky. [printed] \ 19386 [handwritten] \ TYPE [red label, printed] \ Feai v. Grabowskyi Pic det. [handwritten] \ Feai v Grabowskyi Pic [handwritten]" (NHMW).

Additional material: 1 d, "Malaysia-Sabah, Kinabatangan river near village Kg. Koyah, 4-5.6.1998, P. Hlaváč legit." (CKD).

Diagnosis: Body length 3.9 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Coloration dark brown to piceous; legs, antennae and palpi brown with rufous tinge. Pronotum somewhat wider, 1.5 times as long as wide, with antero-lateral sides more convex in dorsal view. Dorsal surface of pronotum finely



Figs. 63 - 69: *Formicomus grabowskyanus* (male): (63) front leg, (64) sternite VII, (65) prong of sternite VIII, dorsal aspect, (66) same, lateral aspect, (67) tergite VIII, (68) aedeagus, lateral aspect, (69) distal portion of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Figs. 63, 67; B - Fig. 64; C - Fig. 68, 69; D - Fig. 65, 66.

corrugated only medially. Male front legs modified as in Figure 63; profemora with short, sharply pointed, dent-like process; protibia slightly impressed, with inconspicuous protuberance in distal half. Lobe of male sternite VII (Fig. 64) tapering, slightly incised apically. Prongs of male sternite VIII (Fig. 65) flattened, conspicuously lobe-like dilated dorsad in lateral view (Fig. 66); distal third of prongs narrow, finger-like, with claw-shaped apex. Male tergite VIII as in Figure 67. Aedeagus Figs. 68, 69; lateral margins of tegmen somewhat upturned subapically; apex of tegmen with a pair of small, hook-like lobes; median lobe of aedeagus with short, straight process apically.

Female unknown.

Distribution: So far known only from Borneo.

Differential diagnosis: Formicomus grabowskyanus resembles F. fasciatus by the shape of the male front legs and prongs of male sternite VIII. For their separation see the differential diagnosis of F. fasciatus.

Remarks: PIC (1913a) described *F. grabowskyi* as a colour variation of *F. feai*, which is herein treated as a junior synonym of *F. censor*. According to ICZN § 45 (g) (1) the name *grabowskyi* must be taken as infrasubspecific. Based on the examination of the male sex characters, *F. grabowskyanus* differs considerably from *F. censor*, and must thus be regarded as a distinct species, which is here newly described.

Formicomus fasciatus PIC, 1913

Formicomus fasciatus PIC, 1913a: 155.

Type material: Holotype d [both hind legs missing]: "MUSEUM PRAG, HINTER-INDIEN [sic!] Tenasserim ? [printed] \ Coll. Helfer. [printed] \ Muséum Paris coll. M. Pic [printed] \ TYPE [red label, printed] \ Type [yellowish label, handwritten] \ d \ [printed] \ F. fasciatus Pic type [handwritten]" (MNHN).

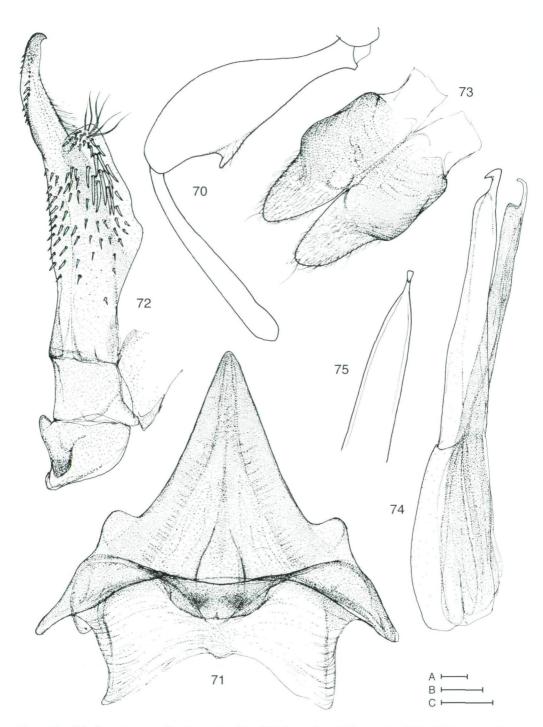
Additional material: 1 q, same locality data as holotype, bearing identification label "censor" by Krekich (NMPC); 1 q: "Ind. or. \ coll. Heberdey" (NHMW).

Diagnosis: Body length 3.9 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Rufous; protibia, distal antennomeres and abdominal sterna somewhat darkened; elytra largely brown, with rather vague, rufous, transverse spot in postscutellar impression, before transverse band of setae, which may vary in size and prominence. Surface of head distinctly punctured, largely unwrinkled, fine corrugation distinct only anteriorly, on frons and along medial margins of eyes. Pronotum with very slight indication of medio-longitudinal impression dorsally, before constricted portion.

Male front legs modified (Fig. 70); profemora with rather distinct, obtusely pointed process; protibia with slight longitudinal edge and impression distally. Lobe of male sternite VII (Fig. 71) conspicuously projecting, triangular, with rounded apex, with a pair of distad converging medio-longitudinal ribs ventro-basally. Prongs of male sternite VIII (Fig. 72) narrowed finger-like distally, with claw-shaped apex; mid-dorsal side widened mediad into flattened lobe and its dorsal surface covered by numerous thick spines of different size. Male tergite VIII (Fig. 73). Aedeagus as in Figures 74, 75; apex of tegmen narrowed and hook-like curved dorsad in lateral view; apex of median lobe terminating in slim, somewhat curved, membranous process.

Distribution: So far known only from south Burma (Tenasserim).

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Figs. 70 - 75: *Formicomus fasciatus* (male): (70) front leg, (71) sternite VII, (72) prong of sternite VIII, dorsal aspect, (73) tergite VIII, (74) aedeagus, lateral aspect, (75) apex of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Figs. 70, 73; B - Fig. 71; C - Figs. 72, 74, 75.

Differential diagnosis: Formicomus fasciatus resembles F. grabowskyanus by the similarly shaped front legs in male and by the narrow, finger-like distal portion of prongs of male sternite VIII, with claw-shaped apex. It differs from the latter species among other characters by the conspicuously projecting lobe of sternite VII with obtuse, not incised apex.

Formicomus elongatissimus PIC, 1913

Formicomus elongatissimus PIC, 1913b: 10. Formicomus (Orthauchen) tenuis KREKICH-STRASSOLDO, 1926: 6, syn.n.

Type material:

Formicomus elongatissimus: **Holotype** d [head and prothorax with front legs missing]: "Pegu [printed] \sp pres Wroughtoni [handwritten] \type [yellowish label, handwritten] \TYPE [red label, printed] \Museum Paris Coll. M. Pic [printed] \elongatissimus Pic [handwritten]" (MNHN).

Formicomus tenuis: Lectotype of [herewith designated, abdomen dissected, mounted in micro-slide by Krekich]: "Ind or. [handwritten] \547 A [number of slide] \TYPE [red label, printed] \coll. Heberdey [printed] \ F. tenuis det. Motsch. [handwritten] \ F. tenuis Kr. det. v. Krekich [species name handwritten]" (NHMW). Paralectotype: 1 of [abdomen dissected, mounted in slide] "MUSEUM PRAG, HINTER-JNDI-EN [sic!] Tenasserim ? [printed] \Coll. Helfer [printed] \TYPE [red label, printed] \727A [number of slide] \coll. Heberdey [printed] \TYPE [red label, printed] \727A [number of slide] \coll. Heberdey [printed] \ TYPE [red label, printed] \727A [number of slide] \coll. Heberdey [printed] \ TYPE [red label, printed] \727A [number of slide] \coll. Heberdey [printed] \ F. tenuis det. v. Krekich [species name handwritten]" (NHMW).

Additional material: 1 d, "Museum Prag, Hinter-Jndien [sic!] Tenasserim ? \ Coll. Helfer", [bearing an identification label "censor" by Krekich] (NMPC).

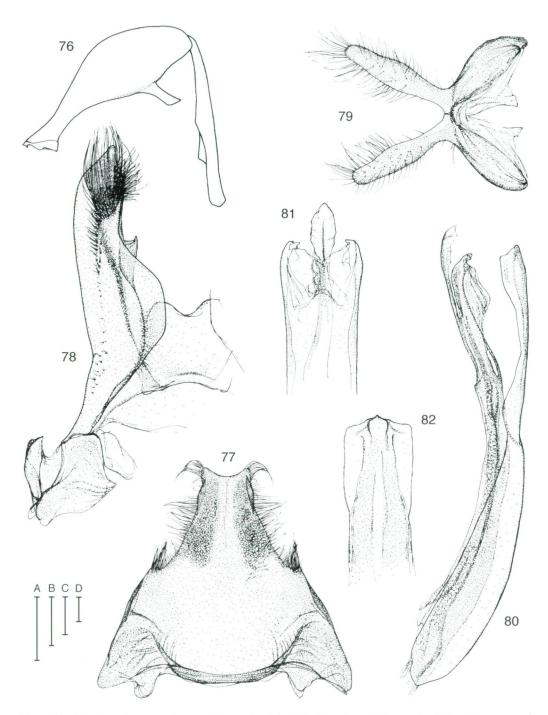
Diagnosis: Body length 3.8 - 4.0 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Head somewhat narrower, 1.3 times as long as wide. Male front legs modified (Fig. 76); profemora with long slightly curved process, somewhat obliquely truncate apically; protibia moderately impressed distally, with a pair of longitudinal, protruding edges. Lobe of male sternite VII (Fig. 77) rather wide distally, truncate and moderately emarginate apically, lateral margins of distal, narrower portion and adjacent strips of ventral surface long setose. Prongs of male sternite VIII (Fig. 78) strong distally, narrowed toward bluntly pointed apex; mid-dorsal side of prongs widened mediad into flattened lobe; each prong with a tuft of long setae subapically. Male tergite VIII (Fig. 79) composed of paired, narrow, tongue-like plates. Aedeagus as in Figures 80 - 82; distal portion of tegmen rather wide, nearly parallel-sided, truncate apically, its lateral margins somewhat downturned; apex of median lobe finely membranous, of unclear structure, with spoon-like process, projecting from its ventral side.

Female unknown.

Distribution: So far known only from southern Burma.

Differential diagnosis: The following characters of *F. elongatissimus* are unique within the *F. censor* group and may serve as diagnostic characters for the males: profemoral process narrow, conspicuously long, obliquely truncate apically; lobe of sternite VII rather wide, truncate apically, with lateral sides conspicuously setose; paired plates of tergite VIII narrow, tongue-like; apex of tegmen of aedeagus truncate apically.

Remarks: The examined type specimen of *F. elongatissimus* is seriously damaged, lacking the fore-body, including both front legs. PIC (1913b) described the front legs as follows: "cuisses antérieures munies d, une épine mince, tronquée au sommet, protibias sinués, á courte dent interne". This description and the remaining sex characters of the



Figs. 76 - 82: *Formicomus elongatissimus* (male): (76) front leg, (77) sternite VII, (78) prong of sternite VIII, dorsal aspect, (79) tergite VIII, (80) aedeagus, lateral aspect, (81) apex of median lobe of aedeagus, dorsal aspect, (81) apex of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Fig. 76, B - Figs. 77, 79; C - Figs. 80 - 82; D - Fig. 78.

examined type specimen fully agree with those of additionally examined male specimens and the type material of *F. tenuis*. Consequently, *F. tenuis* must be regarded as a junior synonym of *F. elongatissimus*.

Formicomus pilumnus KREKICH-STRASSOLDO, 1931

Formicomus (Orthauchen) pilumnus KREKICH-STRASSOLDO, 1931: 5-6, fig. 6a, b.

Type material examined: Syntype: 1 d [abdomen dissected, mounted in micro-slide]: "Kaptai, Chittagong Hill Tracts, Bengal. Dr. J. Atkinson I·XI·1926. [printed] \713B [number of slide] \TYPE [red label, printed] \ coll. Heberdey [printed] \ F. pilumnus Kr. det. v. Krekich [species name handwritten] \ pilumnus Krek. [handwritten]" (NHMW).

Diagnosis: Body length 3.8 - 4.0 mm. Externally very similar to *F. censor*, but differs by the following characters. Coloration rufous to light brown; basal antennomeres, palpi and basal third of elytra in front of transverse band somewhat lighter, pale yellow-brown. Head somewhat more elongate posteriorly. Dorsal surface of head distinctly punctured, rather finely corrugated anteriorly, on frons and along medial margins of eyes; occipital area nearly unwrinkled, rather glossy. Pronotum more robust, with antero-lateral outlines more convex in dorsal view. Dorsal surface of pronotum more finely and densely punctured than head, nearly unwrinkled, at most with several transverse wrinkles at impressed portion.

Male front legs modified (Fig. 83); profemora with small, slightly projecting protuberance; protibia with inconspicuous longitudinal edge distally. Lobe of male sternite VII (Fig. 84) conspicuously projecting, triangular, narrowed distally and with moderately incised apex. Prongs of male sternite VIII (Fig. 85) rather short, narrow and distinctly curved mediad apically, with small, subapical dent, several thick pointed setae and a number of finer setae medio-distally. Male tergite VIII (Fig. 86). Aedeagus as in Fig. 87. Female not examined.

Distribution: Known only from the type locality in south-eastern Bangladesh.

Differential diagnosis: *F. pilumnus* resembles *F. castigator* by the inconspicuous protuberance of male profemora. For their separation see the differential diagnosis of the latter species.

Remarks: According to the original description, the remaining syntypes of *F. pilumnus* are deposited in Forest Research Institut in Dehra Dun (India). No attempt was made by the present author to examine them.

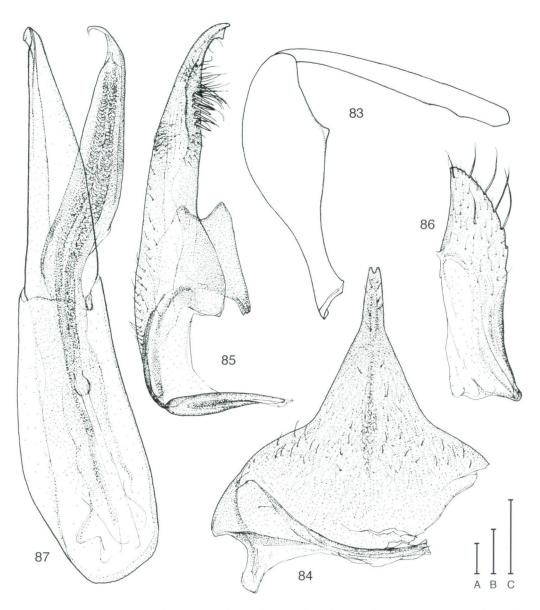
KREKICH-STRASSOLDO (1925) divided the genus *Formicomus* into the two subgenera, *Formicomus* s.str. and *Orthauchen* KREKICH-STRASSOLDO, 1925. They differ from each other by the form of connection of head with neck. Based on the study of rather extensive material of *Formicomus*, this feature is regarded as variable within the genus and the placement of *F. pilumnus* within *Orthauchen* is therefore ignored.

Formicomus castigator LA FÉRTE-SÉNECTÈRE, 1848

Formicomus castigator LA FÉRTE-SÉNECTÈRE, 1848: 87.

Material examined: 1 d, "MUSEUM PRAG HINTER-JNDIEN [sic!] Tenasserim? [printed] \q [printed] \coll. Helfer [printed] \castigator ? Pic det [handwritten] \castigator Laf. ind. [handwritten]" (NHMW);

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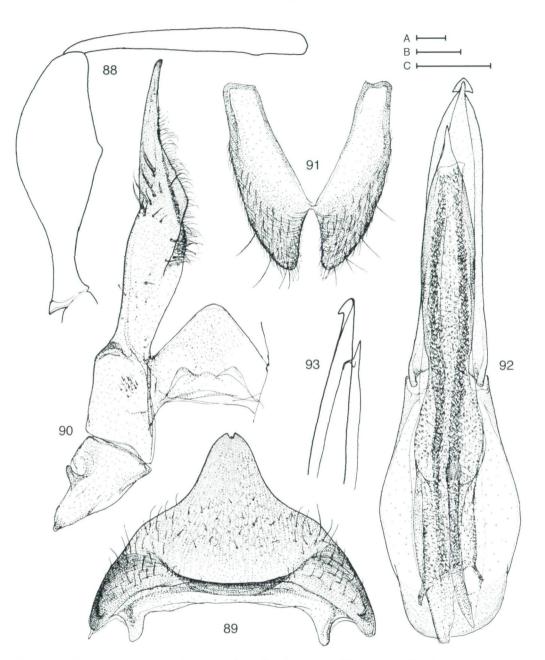
Figs. 83 - 87: *Formicomus pilumnus* (male): (83) front leg, (84) sternite VII, (85) prong of sternite VIII, dorsal aspect, (86) tergite VIII, half, (87) aedeagus, dorso-lateral aspect. Scale (0.1 mm): A - Fig. 83; B - Figs. 84, 86; C - Figs. 85, 87.

1 φ, same locality data [bearing an identification label "censor" by Krekich] (NMPC); 1 φ, "Burma, Mergui, R. N. Parker. [legit.], I. 1927", [bearing identification label "castigator" by Heberdey] (NHMW); 14 dd, 5 φφ, "Thailand, Chumphon prov., Pha To env. 9°48' 98°47', 1.-12.iii.996, P. Průdek leg." (CKD).

Diagnosis. Body length 3.6 - 4.1 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Coloration piceous black; basal antennomeres, palpi, narrowed portion of femora, tarsi and abdominal segments with rufous-brown

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Figs. 88 - 93: *Formicomus castigator* (male): (88) front leg, (89) sternite VII, (90) prong of sternite VIII, dorsal aspect, (91) tergite VIII, (92) aedeagus, ventral aspect, (93) apex of aedeagus, lateral aspect. Scale (0.1 mm): A - Fig. 88; B - Figs. 89, 91; C - Figs. 90, 92, 93.

tinge. Pronotum somewhat wider, at most 1.5 times as long as wide, with antero-lateral outlines more convex in dorsal view. Dorsal surface of pronotum distinctly punctured, nearly unwrinkled, with only few transverse wrinkles in costricted portion.

Male front legs modified (Fig. 88); profemora with inconspicuous, slightly projecting protuberance; protibia nearly simple. Lobe of male sternite VII (Fig. 89) distinctly projecting; lateral sides of its distal portion arcuately narrowing toward moderately incised apex. Prongs of male sternite VIII (Fig. 90) slim, narrowed distally, bluntly pointed apically; mid-dorsal side of prongs moderately widened mediad into flattened lobe; medial margins of prongs distally densely setose. Male tergite VIII (Fig. 91). Aedeagus as in Figs. 92, 93; lateral sides of distal portion of tegmen mostly parallel-sided, converging apically; apex of tegmen with a pair of minute, hook-like lobes; apex of median lobe of aedeagus straight, acute. Female sternite VII (Fig. 118) and tergite VII (Fig. 119) both somewhat tapering apically.

Distribution. So far known only from south Burma and south-west Thailand. The record from Chiang Mai province in north Thailand by UHMANN (1994) is based on a misidentified specimen of *F. celer*.

Differential diagnosis: The male of *F. castigator* resembles *F. pilumnus* by the inconspicuous profemoral protuberance. It differs from the latter species by the darker, piceous coloration, by the less projecting, wide lobe of sternite VII as well as by many details in the shape of prongs of sternite VIII (cf. Figs. 87, 90).

Remarks: LA FÉRTE-SÉNECTÈRE (1848) described *F. castigator* after a single specimen from Helfer's collection (NMPC) as evident from his following statement: "Description faite sur un seul individu, recueilli dans l'Inde par Helfer, et confondu au musée de Prague". Unfortunately, no specimen corresponding with typical type specimens of La Ferté (labels, way of mounting), was found in MNHN, NMPC and NHMW. The above description is based on two specimens of *F. castigator* being very probably of the same origin as the lost holotype (see introduction) and on recently collected material. They agree with the original description of *F. castigator* in all characters, mainly in the piceous black coloration and in the comparatively glossy, unwrinkled pronotum.

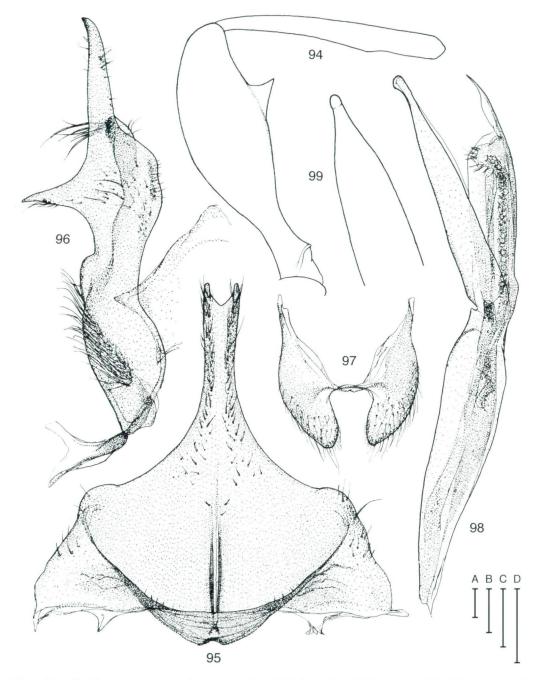
Formicomus songhoanus sp.n.

Holotype d: "TONKIN SONG HOA 4.1906 [printed] \ elongatissimus var (ex Fouquet ?) [handwritten, partly illegible] \ Muséum Paris Coll. M. Pic [printed]" (MNHN).

Diagnosis: Body length 4.2 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Coloration brown; elytra somewhat darker, with slight greenish reflection; antennae rufous proximally. Head somewhat more elongate, including neck nearly 1.4 times as long as wide. Antero-lateral outlines of pronotum somewhat more convex. Surface of pronotum largely smooth and glossy, fine corrugation distinct only in narrow strip, medially.

Male front legs modified (Fig. 94); profemora with rather distinct, sharply pointed, dentlike process; protibia slightly impressed distally, with inconspicuous, moderately protruding, longitudinal edge. Lobe of male sternite VII (Fig. 95) conspicuously projecting, narrow, parallel-sided distally, deeply incised apically; ventral side of lobe with a pair of parallel, medio-longitudinal ribs. Prongs of male sternite VIII (Fig. 96) somewhat thickened behind mid-length, narrow, slightly curved, pointed apically and with strong,

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Figs. 94 - 99: *Formicomus songhoanus* (male): (94) front leg, (95) sternite VII, (96) prong of sternite VIII, dorsal aspect, (97) tergite VIII, (98) aedeagus, lateral aspect, (99) apex of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Figs. 94, 97; B - Fig. 95; C - Figs. 98, 99; D - Fig. 96.

thorn-like, ventro-laterad pointing process laterally. Male tergite VIII (Fig. 97). Aedeagus as in Figure 98, distal portion of tegmen not impressed dorsally; apex of median lobe terminating in long pointed membranous process.

Female unknown.

Distribution: Known only from the type locality in Vietnam.

Differential diagnosis: *Formicomus songhoanus* differs from all other members of the *F. censor* group by the conspicuously long lobe of male sternite VII, which is parallel-sided distally, and deeply, rather broadly incised apically. Similarly, the shape of the prongs of sternite VIII (Fig. 96) is unique within the *F. censor* group.

Etymology: Named after the type locality, Song-Hoa in north Vietnam.

Formicomus discolor sp.n.

Holotype 5: "LAOS centr., 70 km NE Vientiane, BAN PHABAT env. N 18°16.1, E 103°10.9, 150 m, 27.IV. - 1.V.1997, E. Jendek & O. Šauša leg" (NMPC). **Paratypes:** 13 dd, 3 qq, same data as holotype; 3 dd, 1 q, same data as holotype, except: "M. Štrba & R. Hergovits leg." (CKD).

Diagnosis: Body length 3.5 - 4.0 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Coloration of body variable, ranging from piceous black to light brown with rufous tinge; transient, bicoloured forms (e.g. piceous black with light brown basal third of elytra) occur within the type series; legs, antennae and palpi constantly light brown with rufous tinge. Lateral outlines of tempora moderately convex. Dorsal surface of head regularly corrugated. Eyes somewhat smaller. Dorsal subbasal gibbosity of pronotum indistinct, flattened. Dorsal surface of pronotum finely corrugate, including narrow, transverse strip before base.

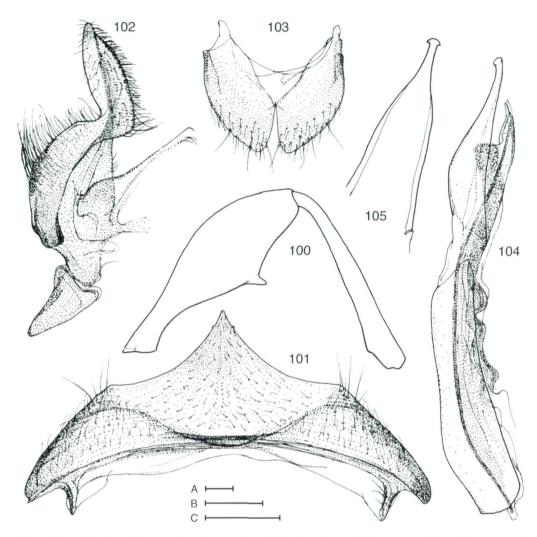
Male front legs modified (Fig. 100); profemora with short, pointed spine, protibia with moderately protruding, longitudinal edge distally. Male metasternum with a pair of short, setose ribs in front of hind margin, their position identical with that of densely punctured patches in *F. praetor* (Fig. 3). Lobe of male sternite VII (Fig. 101) moderately projecting, acute apically; lateral outlines of lobe with a pair of minute protuberances subapically. Prongs of male sternite VIII (Fig. 102) comparatively short, distinctly curved laterad, flattened, obtuse apically. Male tergite VIII (Fig. 103). Female sternite VII (Fig. 120) with posterior margin regularly arcuately rounded. Female tergite VII (Fig. 121) broadly rounded apically. Aedeagus as in Figs. 104, 105; tegmen narrowed toward somewhat enlarged blunt apex.

Distribution: So far known only from the type locality in Laos.

Differential diagnosis: Formicomus discolor differs from all other members of the *F*. *censor* group by absence of distinct subbasal gibbosity of pronotum, by the presence of short ribs on the male metasternum, by the acute, not incised apex of male sternite VII as well as by the unique shape of the prongs of male sternite VIII.

Etymology: From Latin *discolor* (of different colours), named in reference to the variable coloration.

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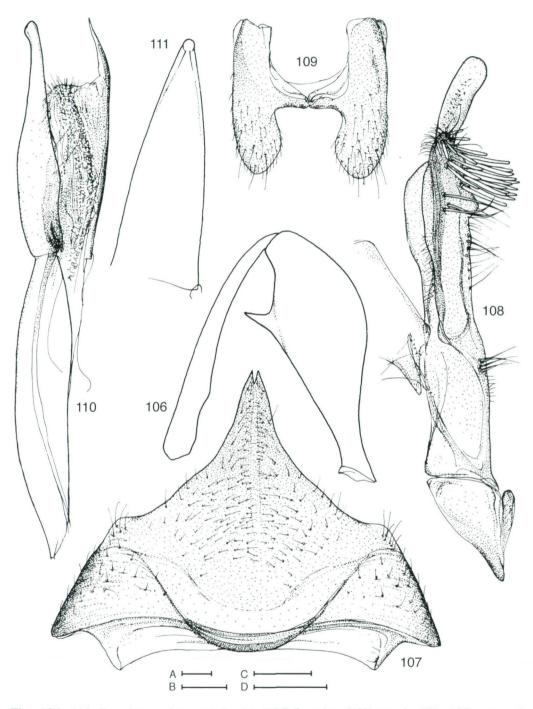


Figs. 100 - 105: *Formicomus discolor* (male): (100) front leg, (101) sternite VII, (102) prong of sternite VIII, dorsal aspect, (103) tergite VIII, (104) aedeagus, lateral aspect, (105) apex of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Figs. 100, 103; B - Fig. 101, 104, 105; C - Fig. 102.

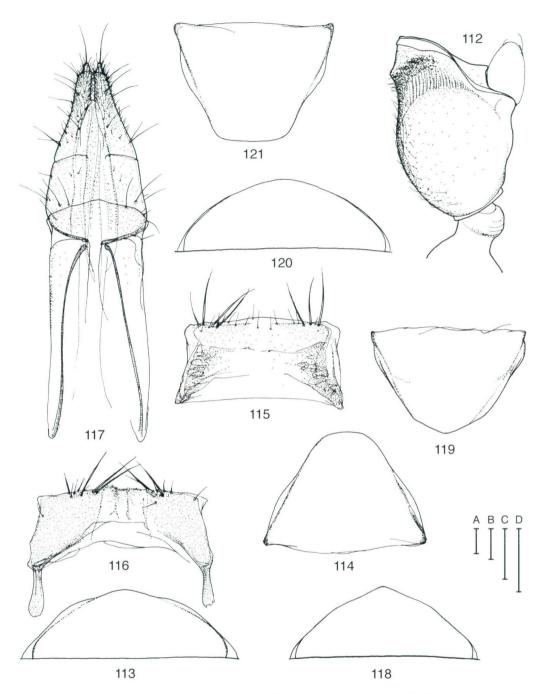
Formicomus laosensis sp.n.

Holotype d: "LAOS centr., 70 km NE Vientiane, BAN PHABAT env., N18°16.1, E103°10.9, 150 m, 27.IV. - 1.V.1997, M. Štrba & R. Hergovits leg." (NMPC).

Diagnosis: Body length 4.3 mm. In general appearance very similar to *F. censor*, but differs by the following characters. Coloration rufous-brown; tibia darkened proximally; elytra largely dark brown to piceous, their basal third, before transverse band of setae, rufous-brown, humeri darkened. Dorsal surface of pronotum, except small area between



Figs. 106 - 111: *Formicomus laosensis* (male): (106) front leg, (107) sternite VII, (108) prong of sternite VIII, dorsal aspect, (109) tergite VIII, (110) aedeagus, lateral aspect, (111) distal portion of tegmen of aedeagus, dorsal aspect. Scale (0.1 mm): A - Fig. 106, 109; B - Fig. 107; C - Fig. 110, 111; D - Fig. 108.



Figs. 112 - 121: *Formicomus censor*: (112) prothorax, lateral aspect, (113) female sternite VII, (114) female tergite VII, (115) female sternite VIII, (116) female tergite VIII; (117) ovipositor. (118, 119) *F. castigator*: (118) female sternite VII, (119) female tergite VIII. (120, 121) *F. discolor*: (120) female sternite VII, (121) female tergite VII. Scale (0.1 mm): A - Fig. 112; B - Figs. 113, 114, 118 - 121; C - Figs. 115, 116; D - Fig. 117.

subbasal gibbosity and base, rather densely, finely punctured and very finely corrugated. Male front legs modified (Fig. 106); profemora with rather distinct, pointed spine; protibia moderately enlarged subapically. Lobe of male sternite VII (Fig. 107) conspicuously projecting, narrowed toward distinctly incised apex. Distal portion of prongs of male sternite VIII (Fig. 108) flattened, rounded apically, with cluster of long, stiff, dorso-laterad pointing setae. Male tergite VIII (Fig. 109). Aedeagus as in Figs. 110, 111; distal portion of tegmen not impressed dorsally; apex of median lobe terminating in long, pointed, membranous process.

Female unknown.

Distribution: So far known only from the type locality in central Laos.

Differential diagnosis: *Formicomus laosensis* resembles *F. songhoanus* by the form of the profemoral process and by the similar form of aedeagus. It differs from the latter species by the form of lobe of sternite VII, by the absence of medio-longitudinal ribs on its ventral side and by clearly different prongs of sternite VIII (cf. Figs. 96, 108).

Etymology: Named after the country of origin.

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