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REVISION OF THE CLEPTES (HOLCOCLEPTES) SPECIES OF THE WORLD (HYMENOPTERA, CHRYSIDIDAE)

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One species, *Cleptes ignidorsum* sp. n. ♂ (from Russia) and the previously unknown males of *Cleptes radoszkowskii* RADOSZKOWSKI and *C. sjoestedti* HAMMER are described. The following types are designated: neotype for *C. sjoestedti* HAMMER; lectotype ♀, paralectotype ♀, and also additional syntypes (2 ♂♂) as paralectotypes ♂ in *C. radoszkowskii* RADOSZKOWSKI. The original specimens designated as ♂ paralectotypes of *Cleptes radoszkowskii* RADOSZKOWSKI belong to *C. femoralis* MOCSÁRY. *Cleptes pinicola* LIN is a synomyn of *C. sjoestedti* HAMMER. *Cleptes flammifer* SEMENOW is a subspecies of *C. radoszkowskii*. The subgenera *Holcocleptes*, *Leiocleptes*, *Chrysocleptes* and *Oxycleptes* are reinstated as a valid subgenera. A key for the 14 taxa of *Cleptes (Holcocleptes)* of the world is presented. The lectotype *C. aerosus* FÖRSTER ♂ is corrected to holotype. New taxonomic, distribution data and variability are given for *C. aerosus* FÖRSTER, *C. fudzi* TSUNEKI, *C. moczari* LINSENMAIER, *C. seoulensis* TSUNEKI and *C. sjoestedti* HAMMER.

Key words: taxonomy, distributions of subgenus *Holcocleptes*, Hymenoptera, Chysididae, Cleptinae

INTRODUCTION

The *Cleptes* species occurring mainly in Europe and North America were divided into seven subgenera by MÓCZÁR (1962). KIMSEY (1981) described a new subgenus *Neocleptes* from Argentina. BOHART and KIMSEY (1982) extended these subgenera to further American species.

After re-examination of *Cleptes* on a world basis, KIMSEY and BOHART (1991) synonymized the previous subgenera and divided *Cleptes* into species groups. During a revision of the *nitidulus* group (MÓCZÁR 1997) it appeared that some species did not correspond to the characteristics of either the *nitidulus* or the *satoi* species groups. The variety of most *Cleptes* species, especially the *orientalis* group, necessitated a study of all species of KIMSEY's species groups. I believe that only a revised and less divided subgeneric arrangement makes possible a better overview of the whole *Cleptes* species of the world. This new arrangement should be based on the external anatomical characters and only secondly on the colour of the available type material. A study of a dozen holotypes from Europe, East Asia, Japan and from the Oriental Region made it possible to reinstate from synonymic status the subgenera *Holcocleptes, Leiocleptes, Chrysocleptes* and *Oxycleptes*.

The detailed data of the type materials and the corrections of the earlier literature are given. Only those references are included in this paper, which contain descriptions of the type material or new observations, and new synonyms owing to the detailed work of KIMSEY and BOHART (1991).

Acronyms for museums, universities and institutions are as follows: CNC = Agriculture and Agri-Food Canada, Research Branch (former Canadian National Collection), Ottawa, Canada; HNHM – Department of Zoology, Hungarian Natural History Museum, Budapest, Hungary; ISK – Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Krakow, Poland; CL – Collection of Dr. W. LINSENMAIER, Luzern, Switzerland; NMW – Naturhistorisches Museum, Zoologische Abteilung, Wien, Austria; NRS – Naturhistoriska Riksmuseet, Sekcionen för entomologi, Stockholm, Sweden; OMNH – Osaka Museum of Natural History, Osaka, Japan; TARI – Taiwan Agricultural Research Institute, Insect Collection, Wufeng, Taichung, Republic of China; USNM – U.S. National Museum of Natural History, Washington D.C., USA; ZIP – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia; ZMB – Museum für Naturkunde der Humbolt Universität (formerly Zoologisches Museum), Berlin, Germany.

Symbols: F-I (–II–III) = flagellomere I (and II, III); MS = malar-space (MS measured across the narrowest interval between the ventral eye margin and the ventral edge of malar space, within the two mandibular insertion); MOD = middle ocellus diameter; POL = postocellar line: OOL = ocellus–ocular line, the distance between oculus and the hind ocellus; Ped = pedicellus (measured in its whole length also with base, bending resembling a knee); PD = puncture diameter; T–I the first segment etc.

Subgenus *Holcocleptes* MÓCZÁR

Cleptes (Holcocleptes) MÓCZÁR, 1962: 118. Type-species: *Cleptes aerosus* FÖRSTER, 1853. Monobasic and orig. desig.

Pronotum with a transverse row of pits or foveae in front and before posterior margin and with a longitudinal sulcus along mid-line between two pit rows. Rarely this latter developed moderately or not for the whole length. Body usually with dense, partly with coarse punctures, terga sometimes partly finer punctured. Terga IV and in most cases also T–III double punctured. At most T–I with a low, rather sharp, hardly protruding and yellowish brown-coloured torus between dorsal and ventral sides. Lateral margin of all remaining abdominal segments between terga and sterna always rounded. Head, thorax and abdomen partly with different metallic colour or sometimes nearly concolorous, exceptionally whole thorax, including propodeum also with same colour; abdominal segments never greenish-red, flame red or coppery. Male genitalia: *C. aerosus* FÖRSTER (MÓCZÁR 1951: 271, Figs 15, 16).

The 14 taxa of the subgenus *Holcocleptes* occur in warmer parts of the Palaearctic and in the Oriental Regions. The type material of one of the species was not accessible.

CHECKLIST OF SPECIES

aerosus group

aerosus FÖRSTER, 1853 – Southern parts of Central and South Europe, Oran, Georgia
aerosus franciscae LINSENMAIER, 1987 – Morocco
collaris LINSENMAIER, 1959 – Turkey
ignidorsum **sp. n.** – Russia
libanoticus LINSENMAIER, 1959 – Lebanon
mandsuricus MÓCZÁR, 1968 – China
moczari LINSENMAIER, 1968 – Greece
radoszkowskii RADOSZKOWSKI, 1889 – Russia
radoszkowskii flammifer SEMENOW, 1891 **stat. nov.**

juengeri group

juengeri LINSENMAIER, 1994 – Spain

fudzi group

dipriovola TSUNEKI, 1982 – Thailand
fudzi TSUNEKI, 1952 – Japan
seoulensis TSUNEKI, 1959 – Korea
sjoestedti HAMMER, 1950 (= *pinicola* LIN, 1959) – China, Taiwan, Korea

KEY TO SPECIES

1 Postscutellum oblong (Fig. 2), distinctly wider than long or quadrangular. Posterior row of pits on pronotum usually moderately developed. Body with different lighter, often with bright metallic colour 2

– Lateral side of postscutellum strongly converging backwards, isosceles-, or equilateral-triangle formed with one unusually large and deep pit in front (Figs 7, 11). Posterior row of pits on pronotum well-developed. Body nearly dark, with green, blue, violet-purple or bronze-mixed coloured metallic highlights, reflections or tints (*fudzi* group) 11

2 T–I with very fine, T–II with denser, T–III with mostly closely punctures mainly anteriorly. Head, thorax with distinctly deeper, partly with rugulose or double punctures. Propodeal spine with strong thorn-like basis. Abdomen largely black with malachite green or rarely dark bluish reflection and with some dark brownish spots (*juengeri* group). Head, thorax including propo-

deum nearly entirely, fore and middle femora above flame red, partly with coppery tints. Hind femora black. Pronotum with golden reflection. Tegulae dark bluish. Postscutellum not reaching the scutellum, without a pit in front medially. 6.5 mm *juengeri* LINSENMAIER

– Body, particularly the abdomen dense, usually rather deep coarsely punctate, T–III–IV often with double punctures. Colour never malachite green, propodeum at most exceptionally reddish in the middle, terga usually yellowish or brownish red in front or largely black, sometimes partly metallic posteriorly. Head, thorax with strikingly metallic reddish, greenish or violet highlights. Postscutellum not reaching the scutellum, there are usually a deep, minute fovea row between those segments (*aerosus* group) 3

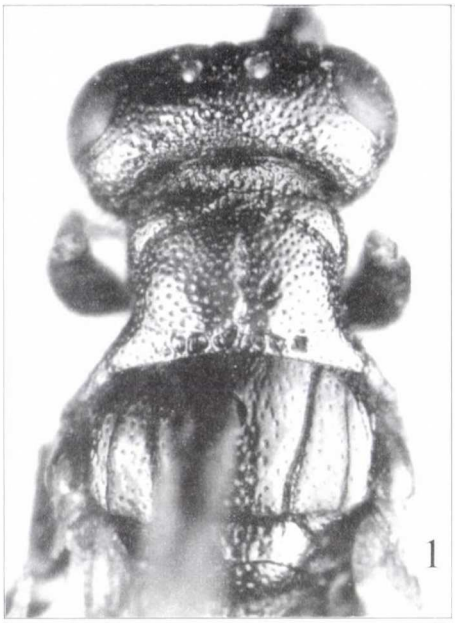
3 Abdomen nearly entirely black 4

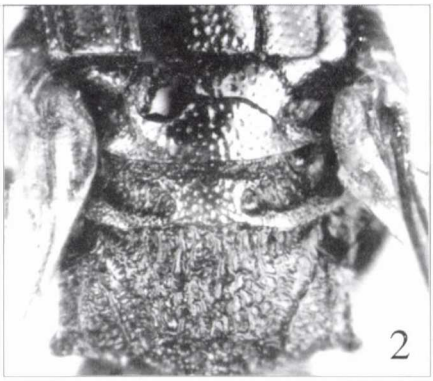
– T I–II entirely, T–III largely or T–III–IV laterally yellowish red coloured, only last segments black 5

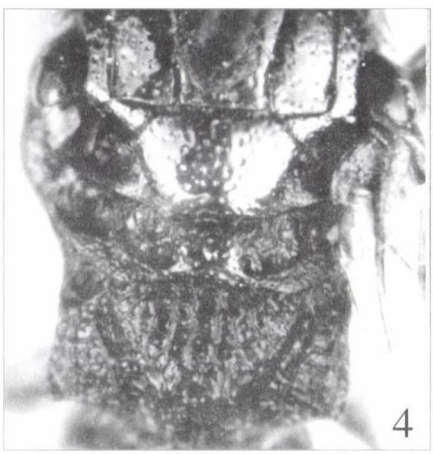
4 Two pits close to hind ocelli imperfectly connected with a swallow line incompletely connected with each other. Pronotum longitudinally without a distinct sulcus, only a shallow depression developed with indistinct punctures in the middle. Abdomen shining black, T–V and lateral sides of T–IV with pale blue tints; T–I and lateral part of T–II with yellowish brown spots. Bluish green, propodeum and femora metallic blue with violet reflection. Tibiae brown, except the yellowish brown fore tibia. Head closely, thorax finely punctured, pronotum with somewhat with coarser punctures. Abdomen with more distinct, T–II–III with less scattered T–III–IV with partly double punctures. T–I very fine, scattered punctures only on disc medially. 6.5 mm *libanoticus* LINSENMAIER ♂

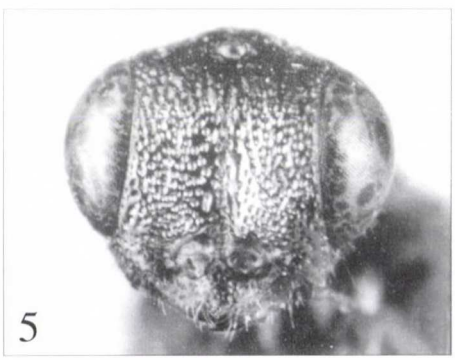
– Two pits close to hind ocelli connected with a deep, very narrow sulcus with each other. Longitudinal sulcus of pronotum distinctly developed only in posterior half medially. Abdomen entirely black, only T–I basally, laterally and along posterior margin somewhat brownish red. Pronotum, mesonotum and propodeum medially flame red, rest of propodeum greenish blue and violet basally in the middle. Mesopleuron golden green. Femora and each tibiae green or greenish blue outside. Head black, vertex pale reddish medially, and coppery red laterally. 5.5 mm.
aerosus franciscae LINSENMAIER ♀

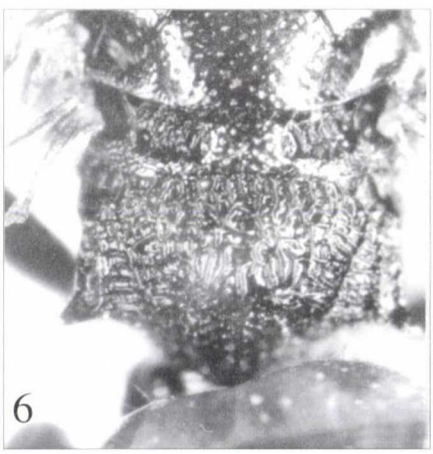
Figs 1–6. 1–3: *Cleptes ignidorsum* sp. n. male: 1= head, pronotum and mesonotum; 2= scutellum, postscutellum and propodeum; 3= head, front view. 4–6= *C. radoszkowskii*, 4= thorax, male, 5= head front view, 6 = scutellum-propodeum, female











5 Vertex rarely partly, pronotum and mesonotum largely, often also scutellum flame red or greenish golden. Upper margin on the longer and posterior part of hind femora usually with a lighter or darker brownish line 6

– Head and thorax largely violet, partly with blue reflections, never flame red 9

6 Hind tibiae outside with metallic bluish green reflection. Lateral spine of propodeum pointed with thornlike or smaller base, margins of disc more or less divergent backwards. Postscutellum oblong partly with parallel lateral margins and with normal pit medially. T–I usually with dense punctures. Pronotum evenly slightly curved in lateral view. 7

– Hind tibiae brownish without metallic reflection. Lateral angles of propodeum right angled, hardly protruding without (Fig. 4) or exceptionally (♀) with a pointed spine (Fig. 6), margins of disc parallel. Lateral margins of postscutellum convergent basally (Fig. 6) and with larger pits in front 8

7 Lateral spine of propodeum larger, with thornlike basis and more pointed apex, lateral margin of disc more (♀) or less (♂) divergent backwards. The pits-row of pronotum posteriorly and the longitudinal mid-line differently developed, always with smaller pits or often narrow and shallow. Postscutellum green (♂), or partly with pale golden tints (♀). Tegula brownish translucent entirely with violet reflection (♂) and/or rarely with greenish tints (♀). Nervulus distincty antefurcal. Propodeum blackish violet (♂). Body often with golden (♀), greenish (♂) reflection or extended green. Face, head closely (♀) or coarsely punctured, largely or medially black, then partly green (♀). 6–7 mm. *aerosus* FÖRSTER

– Lateral spine of propodeum shorter, stumpy and with smaller base, with rounded apex (Fig. 2), lateral margins of disc parallel. About six remarkably large pits on pronotum medially well-outlined; longitudinal sulcus deep (Fig. 1). Postscutellum golden. Tegula with green reflection in front and brownish translucent backwards. Nervulus interstitial. Propodeum greenish blue **ignidorsum** sp. n. ♂

8 ♀ – Vertex with a black spot among and partly below ocelli. Propodeal angles pointed (Fig. 6). Posterior margin of pronotum black medially, with distinct pits-row. Postscutellum golden with a normal pit in front medially. Between the hind ocelli there is a small pit and on both sides a hardly perceptible shallow sulcus towards ocelli. Mesonotum with deep, T–I–II with close or very dense punctures, with 0–1 PD apart. 6.5 mm.

♂ – Vertex flame red, without black spot. Propodeal angles right angled (Fig. 4). Posterior margin of pronotum medially green, depressed and smooth, the pits row hardly distinct above it, lateral lobe convex, not depressed. Pronotum with coarser punctures. Postscutellum green with an unusually large pit medially. Between hind ocelli there is only a pit. T–I with fine and scattered, T–II with very dense punctures. 5.6 mm

radoszkowskii RADOSZKOWSKI

– Frons, vertex, pronotum, mesonotum and scutellum bright reddish or purplish gold. Propodeal angles posteriorly directed outwards, protruding apex hardly pointed. Pronotum not black medially with pits-row posteriorly; disc convex, longitudinal sulcus strongly impressed medially. Postscutellum greenish gold without a pit in front medially. Posterior ocelli connected by a deep transversal sulcus. F-I nearly twice as long as wide. Mesonotum, scutellum finely punctured. 6 mm. (According to SEMENOW)

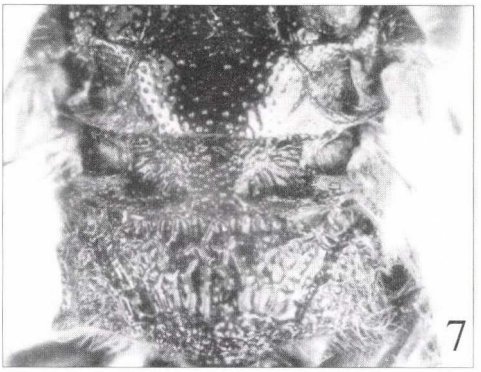
radoszkowskii flammifer SEMENOW ♀

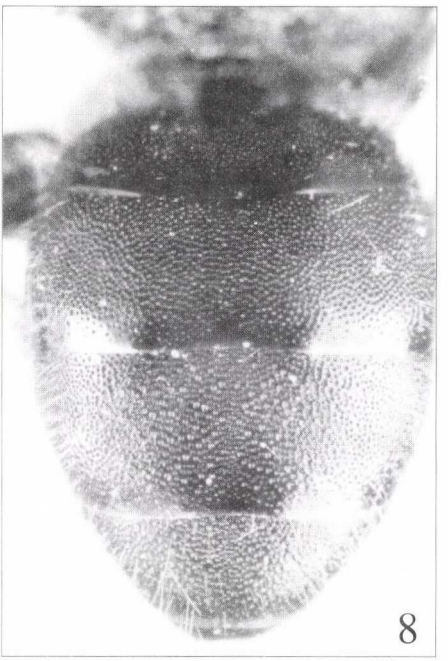
9 Terga without metallic reflection or tints. Head and thorax largely violet partly with blue reflection. Disc of T–I with dense and deep punctures 0–3 PD apart, ♀ ♂. Frontal sulcus perceptible at most immediately below fore ocellus. Head and thorax nearly entirely violet, with greenish blue reflection or partly green. Postscutellar disc remarkably wider than long, with a deep pit medially in front and anterior margin becoming gradually deeper in a minute and long row of foveae, posterior margin straight, without foveae. Pronotal mid-line developed nearly on its whole length. T–II, T–III closely punctured, 0–2 PD apart and without (♀) or with some larger punctures (♂). ♀ 5.2–6, ♂ 4.6–5.8 mm *moczari* LINSENMAIER

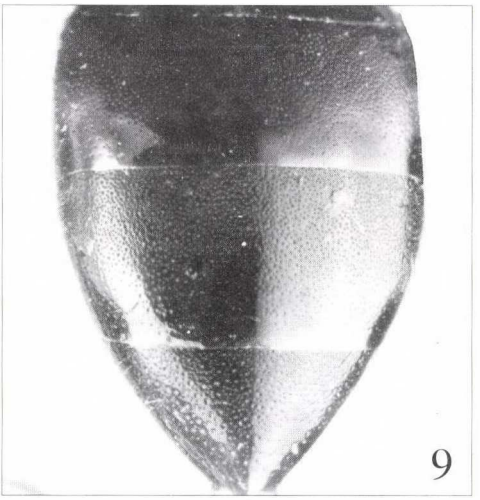
– Last terga with violet or bluish green metallic reflection. Disc of T–I shining, at most denser punctured on posterior third. Head and thorax greenish blue with violet or green reflection. 10

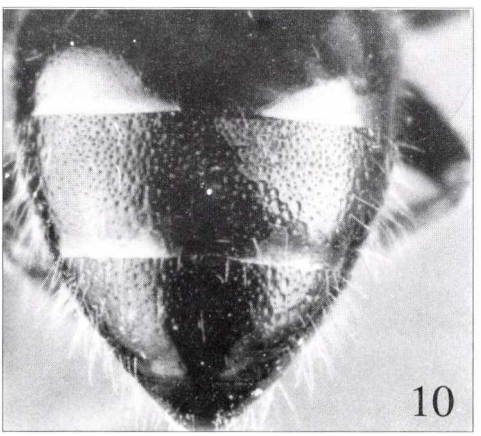
10 Pronotal mid-line narrow on its whole length (Fig. 12). Lateral angles of propodeum with thornlike bases and directed obliquely (Fig. 13). Anterior margin of postscutellum with a large, deep pit medially. Pronotal punctures scattered posteriorly and denser in front (Fig. 12). Face with dense, partly close punctures. Tibiae bluish with violet reflection, tarsi brown. T–I and T–II except the triangular black spot medially, as well as lateral spots on T–III yellowish brown coloured. T–III–IV black with violet highlights, lateral margin and T–V dark blue. Head and thorax bluish green with violet reflection. Scape and pedicel partly metallic green. Propodeal disc black medially. 7.5 mm *mandsuricus* MÓCZÁR ♂

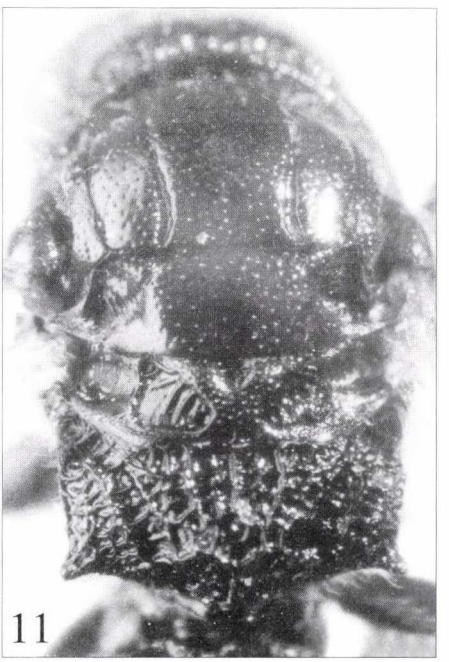
Figs 7–11. 7–8: *Cleptes dipriovola*: 7= scutellum-propodeum, 8= abdomen, male. 9–10. Abdomen: 9 = *C. seoulensis*, 10= *C. fudzi*, 11= *C. sjoestedti* thorax











– Pronotum with a sharp narrow longitudinal sulcus anteriorly, which become indistinct posteriorly; posterior margin with a sharply outlined pits-row. Propodeal teeth laterally slightly lengthened, directed greatly outward and not pointed apically. Punctures of pronotum rather strong, deep and partly wrinkled; mesonotum less strongly, scutellum slightly scattered, face coarse and closely punctured. Tergites I–III yellowish red, similarly to tibiae. T–IV-V black, bluish green tints laterally. Head and thorax green, propodeum, tegulae, femora mostly bluish-green. Disc of T–I and T–II–IV evenly closely punctured, without double punctures. 5.5 mm *collaris* LINSENMAIER ♂

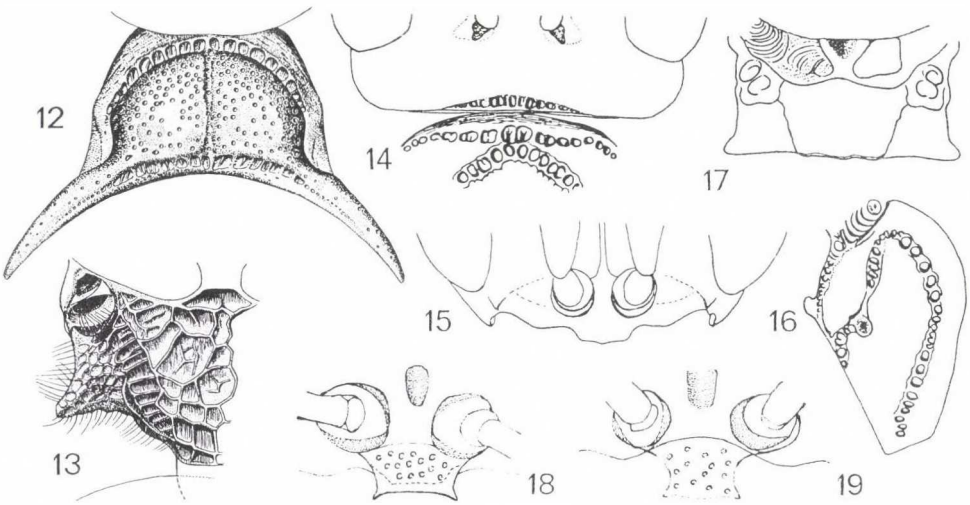
11 Supraoccipital furrow very strong and distinctly foveolate (Fig. 14). Transverse furrows of pronotum unusually strong and coarsely foveolate. Longitudinal sulcus unusually deep on pronotum medially. Lower margin of clypeus broad, with tridentate apex (Fig. 15). Frontal sulcus very deep basally, running from fore ocellus and gradually becoming shallow toward clypeus. Epicnemo-precoxal and epimeral furrows on mesopleuron (Fig. 16) connected with each other in front, very deep and strongly crenate excepting posterior portion of epimeral furrow. Mesonotum black with bronze reflection and with purple tints. Head, scape, pedicel, pronotum, coxa partly, femora and tibiae largely mainly on outside, greenish blue with violet tints. Propodeal disc and abdomen largely purple. T–IV bluish-green and with violet tints. Posterolateral angles of propodeum pointed. 10.2 mm
seoulensis TSUNEKI ♀

– Supraoccipital furrow absent or hardly discernible. Transverse furrows and midline on pronotum normally developed or shorter. Lower margin of clypeus narrower than before, straight, without tridentate apex 12

12 Body nearly entirely brilliant greenish blue, tegulae, terga with remarkably vivid violet reflection, head, pronotum and postscutellum only partly with violet tints. Scape, propodeum, mesopleuron, T–I in front together with T–I–II laterally and partly femora and tibiae more greenish. Apical margin of terga black. Postscutellum with an unusually large pit medially in front and with two smaller pits apically (Fig. 7). Frontal sulcus started in a distinct pit not near fore ocellus. Lateral margins of propodeum nearly parallel. Terga deeply and gradually densely, T–II closely, T–III–IV coarsely (Fig. 8) and partly double punctured. 6.5 mm *dipriovola* TSUNEKI ♂

– Body largely black, abdomen dark brown, partly with green, bluish or violet reflection T–III–IV densely, partly double (Fig. 10), not coarsely punctured 13

Figs 12–19. 12–13: *Cleptes mandsuricus*: 12= pronotum, 13= Propodeum. 14–16. *C. seoulensis*: 14= posterior part of head with anterior margin of pronotum, dorsal view; 15= lower face, front view, 16= Mesopleuron, lateral view. 17= *C. fudzi* postscutellum and propodeum, dorsal view. 18–19. Clypeus, frontal view of *C. fudzi* and *C. sjoestedti* (Figs 14–17 according to TSUNEKI)



13 T–I nearly impunctate, with only very fine and sparse punctures ♀ ♂, T–II–IV with very dense, partly double punctures (Fig. 10). Abdomen dark brownish black; T–I chestnut brown in front and together with T–I–IV on posterior margin, or with pale or moderate bluish green and violet (♀), or extended bluish reflection (♂). Head, pronotum, whole mesonotum nearly entirely black, sometimes with bronze tints (♀ ♂), vertex rarely with violet tints. Scutellum, postscutellum and propodeum bluish green, green or blue with more or less violet reflection (♂). Propodeum with lateral margin parallel, lateral teeth stumpy ♀ ♂ (Fig. 17). Lower margin of clypeus with a distinct acute tooth pointed and directed obliquely at the corners (Fig. 18). ♀ 9 mm, ♂ 6.7–7.5 mm *fudzi* TSUNEKI

– T–I with distinct and sparse punctures 1–3 PD apart. Terga largely with distinct violet reflection (♀), or traces of violet tints (♂). Mesonotum only medially blackish green (neotype) or black, lateral lobes with violet tints (♀ from Korea), vertex and pronotum bluish, partly with violet tints. Scutellum, postscutellum dark blue with violet tints (♂). Propodeum with lateral margin concave before angles, lateral teeth slender (Fig. 11) produced obliquely. Lower margin of clypeus hardly bulging into a minute tooth directed laterally (Fig. 19). ♀ 9, ♂ 5.5 mm *sjoestedti* HAMMER

Cleptes aerosus FÖRSTER

Cleptes aerosus FÖRSTER, 1853: 329 ♂. Holotype ♂; Hungary: Budapest (HNHM).
Cleptes Abeillei BUYSSON, 1887: 6, 3 ♀, France: Vernet (Allier), BUYSSON 1888: 2, 3 ♂.
Cleptes Abeillei var. *soror* MOCSÁRY, 1892: 213, 1 B. Holotype ♀ ; Greece: Mt. Parnassus (HNHM).
Cleptes aerosus: MÓCZÁR 1962: 112 (lectotype desig. erroneously).
Cleptes abeillei: KIMSEY, 1986: 106, desig. lectotype: Allier (Paris).
Cleptes soror (*abeillei* var.) 1893 (correctly 1892): KIMSEY and BOHART 1991: 58 ♀ (as synonym).
Cleptes aerosus: KIMSEY and BOHART 1991: 58 (lectotype ♂).

Material examined: 7 ♀, 9 ♂. Hungary: "Budapest leg. Kovács Gy.", "Hung." (it is in the original diagnosis), "Cleptes aerosus Först. det. MOCSÁRY", "Holotype Cleptes aerosus Först. ♂ det. MÓCZÁR", (Budapest Hym. Typ. No. 3852), 1 ♂ (HNHM). Budapest (Szépligeti), 1 ♀, Remetehegy (Bajári); 1 ♂, Paks (Horváth E.). – Croatia: Novi (Horváth G.), 2 ♂. – Bosnia-Hercegovina (Dr. Hensch), 1 ♂. – Greece: "Graecia Krüp. 92" with MOCSÁRY's handwriting, "Abeillei Buyss. typ. v. soror Mocs. det. Mocsáry", "Holotypus *C. Abeillei var. soror Mocsáry*" (Budapest Hym. Typ. No. 3853), 1 ♀ (HNHM). – Georgia: Nucha prov. ♀ (2.VI.1904) (as "radoszkowskii Rad." det. A. SEMENOV-TIEN-SHANSKY), really 1 ♂ (HNHM). – Armenia: lac. Gokca, Savang Exp. Savang 1903, "det. M. Nikolskaya" (ZIP). – Bohemia: Veletoy-kolin. – Switzerland: P.IS (Peney), 1 ♀; Helvetia P. 1 ♀; P. Moul, 1 ♂. – France: Le Vernet, Cleptes Abeillei R. du BUYSSON 1887 1 ♀, 1 ♂ (all HNHM). The dates of collection were mainly July and in two cases May and June.

Addition to the original diagnosis. Nervulus antefurcal. The following table compares the proportions. The numbers were obtained by dividing the length of the studied morphological part by its width.

	MS:MOD	Ped	F-I	F-II	F-III
aerosus ♂ (holotype)	1.8 long	1.9	2.9	1.6	1.4
♂ spec. from Nucha	1.7	1.8	3.0	1.8	1.6
♀ spec. from Armenia	2.0	2.0	2.4	1.4	1.1
soror ♀ (holotype)	2.2	2.0	2.5	1.4	1.1

The variability of this species is rather large both in sculpture and in colour. For example the posterior row of pits of the pronotum is feebly developed in the holotype or in one male from Novi (coll. 12. VII. 1899), but it is well-distinguishable in other males, among them a male also from Novi (collected 1896). Longitudinal mid-line of pronotum shallow and developed only on anterior half of disc (holotype ♂), usually longer or when sometimes developed posteriorly, then indistinct in front (♀ ♂). The size of the lateral angles of propodeum is different on the right and on the left side in the very same specimen (Budapest: Remetehegy, coll. 1954). The oval and round or narrow pit on vertex between hind ocelli does not restricted to males or to females. T–I usually with fine and dense punctures 1–3 PD apart (*soror* holotype) or denser, nearly closely punctured 0–1 PD apart (Budapest ♂ holotype, France). Lower face largely black (♀), or green with few violet tints in holotype (♂) and large violet or black, also me-

dially in other males: scutellum rarely with copper tints (♀), or largely golden green ♀ ♂ with red tints (♂), etc.

Distribution. Hungary (FÖRSTER 1853). Southern parts of Central and Southern Europe, Oran (Algeria) and Georgia.

Cleptes aerosus franciscae LINSENMAIER

Cleptes aerosus franciscae LINSENMAIER, 1987: 133, 1 ♀. Holotype ♀; Morocco: Mogador (CL).
Cleptes aerosus franciscae: KIMSEY and BOHART 1991: 58 ♀.

Material examined: 1 ♀ Morocco: "Maroc 30.IV.65 Mogador Taffet leg. Linsenmaier", " ♀ Type Cleptes Ltr. aerosus franciscae Lins. Linsermaier det 1965", "Holotypus C. aerosus franciscae Lins. des. Móczár 998" (CL).

Distribution. Morocco (LINSENMAIER 1987).

Cleptes collaris LINSENMAIER

Cleptes collaris LINSENMAIER, 1959: 91, 1 ♂ Fig. 710. Holotype ♂; Turkey: Ciftehan (CL).
Cleptes collaris: KIMSEY and BOHART 1991: 59 ♂ (*aerosus* group).

Material examined: 1 ♂. Turkey: "Ciftehan (Taurus) 10.6.58 Seidenstücker", "♂ Type Cl. collaris Lins. 58 Linsenmaier det.", "Holotypus C. collaris Lins. des. Móczár 998" (CL).

Distribution. Turkey (Taurus) (LINSENMAIER 1959).

Cleptes dipriovola TSUNEKI

Cleptes dipriovola TSUNEKI, 1982: 1, 1 ♂. Holotype ♂; Thailand: Chiang Mai (OMNH).

Material examined: "Thailand Chiang Mai", "Chang" in original description, "Diprion 1980" (both labels with further Japanese writing), "Cleptes dipriovola Tsuneki A Holotype" orange label (OMNH).

The holotype corresponds to the original description, except the abdomen is differently punctured (Fig. 8), given in detail in the key (not "gaster above finely closely punctured").

Additions to the original diagnosis. Anterior vein of discoidal cell pale, nervulus distinctly antefurcal. Lower margin of clypeus convex with nearly rectangular corners. MS 1.6 MOD long. Ped 1.3 times as long as wide, F-I 2.4 ×, T–II 1.6 times as long as wide.

Distribution. Thailand (TSUNEKI 1982).

Cleptes fudzi TSUNEKI

Cleptes fudzi TSUNEKI, 1959: 14, 1 ♀, 3 ♂ Figs 7, 13–17. Holotype ♀; Japan: Youga-cho (OMNH)
Cleptes fudzi: KIMSEY and BOHART 1991: 60 ♀ (Tsukuba).

Material examined: 3 ♀, 1 ♂. Japan: "Youga-cho, V.24.1933. Col. A. Y.","Cleptes fudzi TSUNEKI Holotype" 17 IV 1964, 1 ♀ (red label) (OMNH): Oshibahara VIII 1963, 1 ♀ (CNC), and 28 IV 1964 ex *Neodiprion sertifer* (GEOFFROY) 2 ♂ (CNC and HNHM).

Additions to the original description. ♀ = MS 2.3 MOD long. Ped 2.0 times as long as wide, F-I 2.2×(not 2.8× as in TSUNEKI), F–II 1.2× and T–III 1.3 times as long as wide. Anterior vein of discoidal cell only partly developed, nervulus antefurcal (♀ ♂). ♂ (collected ex the same sawfly) = MS 1.3 MOD long. Ped 1.4 times as long as wide, F-I 2.2×, F–II 1.7×, F–III 1.4 times as long as wide. Head coarsely, pronotum, mesonotum densely 1–2, partly 0.5–2 PD apart. The deep pit of postscutellum in front lengthened and pointed, similar to that in female. T–II–III densely 1–1.5 PD at base and 1–2 PD apart posteriorly; T–IV with partly scattered punctures 3–4 PD apart (Fig. 10). Double punctures in male of T–III–IV distinctly stronger than in female.

Sculpture and colour are also different. Mid-line of pronotum is feebly developed posteriorly in holotype, hardly distinct anteriorly in one female or normally developed along the disc in one female and male, which were collected in the same locality. Scutellum, propodeal disc laterally green, central area of propodeum dark green and postscutellum violet in holotype; scutellum, propodeum bluish violet with dark blue central area, and postscutellum dark violet in the other females, all collected in the same locality. The same difference can be seen in the colour of the male terga as given in the key.

Distribution – Japan (TSUNEKI 1959).

Cleptes ignidorsum sp. n. ♂
(Figs 1–5)

Holotype A: Gruzia: Prov. Tiflisens. "Lagodechi", "30.V.07", "Mus. Caucas 60–07", "Holotypus ♂, Cleptes ignidorsum sp. n., det. MÓCZÁR 997", 1 ♂ (Budapest Hym. Typ. No. 3858) (HNHM).

Length 7.0 mm. Vertex, pronotum (except for green collar, lateral side and pits row of posterior margin), as well as mesonotum and scutellum flame red. Lower face, clypeus, mandible base, scape, lateral side of mesonotum, coxae and outerside of hind femora and tibiae green, with golden tints. Outer side of fore femora greenish blue, of middle ones with metallic highlights. Fore and middle tibiae yellowish brown, with less greenish tints; tarsi yellowish brown. Pedicel, except for few greenish tint and flagellomeres, trochanters and hind femora inside brown. Abdominal segments I–II nearly entirely, T–III laterally with larger, and T–IV with a smaller, lateral yellowish red colours; T–II posteromedially, T–III largely triangularly black, T–IV nearly entirely, T–V entirely black. Wings hyaline, only radial cell hardly infuscated. Body covered with erect brownish hairs.

Head 1.2 times as broad as long (measured including clypeus), with close punctures; with very deep and large pits outside of the ocelli, similarly to *aerosus*. Vertex hardly raised between the pits of hind ocelli; instead of a sulcus is a small pit medially. Ocellar triangle acute, 1.5 times as far from eye margin as from one another; POL:OOL = 15:10. Frontal sulcus distinct, reaching to the pits of fore ocellus (Fig. 3). Lower face concave. The lateral margins of clypeus convergent downwards but nearly divergent just before the slightly arcuate apical margin; lateral angles nearly in an acute triangle; surface with large and deep punctures. MS 1.4 MOD long. Pedicel 2.0 times as long as wide; F-I 3.2 × apical width, F–II 1.9 ×, F–III 2.0×apical width; lower side of F–III hardly, of F–IV-XIII flattened and lighter brown. Pronotal punctures 0 to 1 PD apart in front medially and 1–2 PD apart posteriorly beside the middle (Fig. 1).

Mesonotum and scutellum with scattered punctures, punctures 0.5 to 2.5 PD apart or more medially. Postscutellum oblong, anterior margin with a small pit medially; and with a minute irregular row of deep pits between scutellum and postscutellum (Fig.2). T–I–II–III closely punctured, T–IV with double punctures, T–V smooth, polished.

♀. – Unknown

This species is closely related to *C. aerosus* FÖRSTER but differs from it as given in the key (couplet 6 and –) near to *C. radoszkowskii* RADOSZKOWSKI as follows: hind tibiae not yellowish brown on both sides; and T–I and T–II not with similarly close punctures, etc.

Cleptes juengeri LINSENMAIER

Cleptes juengeri LINSENMAIER, 1994: 514, 7 ♀ Figs 1–2. Holotype ♀; Spain: Soria (CL).

Material examined: Paratype, 1 ♀. Spain: "Spanien Soria 19.6.94 Linsenmaier", "♀ Paratype Cleptes Latr. juengeri Linsenmaier det. 1994" (Budapest Hym. Typ. No. 3856) (HNHM).

Addition to the original description: MS 2.4 MOD long. Ped 2.3 times as long as wide, F-I 2.4 ×, F.II 1.6 × and F–III 1.4 times as long as wide.

Distribution – Spain (LINSENMAIER 1994).

Cleptes libanoticus LINSENMAIER

Cleptes libanoticus LINSENMAIER, 1959, 9 ♂ Fig. 711. Holotype, ♂; Libanon: Mt. Barouk (CL).
Cleptes libanoticus: KIMSEY and BOHART 1991: 61 (*aerosus* group).

Material examined: 1 ♂. Lebanon: "Lebanon mt. Barouk 22.V.1953 Mavromoustakis", "Type Cleptes libanoticus Lins. det. Linsenmaier 59", "Holotypus C. libanoticus Lins. des. Móczár 998" (CL).

Distribution – Lebanon (LINSENMAIER 1959).

Cleptes mandsuricus MÓCZÁR

Cleptes mandsuricus MÓCZÁR, 1968: 171, 1 ♂ Figs 5–7: Holotype ♂; China: Manchuria, Erzendjanzsy (ZMU).
Cleptes mandsuricus: KIMSEY and BOHART 1991: 61 ♂ (*aerosus* group).

Material examined: Holotype, 1 ♂. China: "Mandschurei Erzendjanzsy 5.VI.37", "Holotypus Cleptes mandsuricus ♂ Móczár det. Móczár L. 1967" (ZMB).

Additions to the original description. MS 1.4 MOD long. Ped 1.6 times as long as wide, F-I 2.2 ×, and F–II 1.8 × as long as wide. Lateral margins of postscutellum convergent posteriorly; disc with a pit in front medially; posterior margin broadly and arcuately foveate (Fig. 13) with a hardly perceptible septum lying deep medially. Anterior vein of discoidal cell hardly distinct basally. Nervulus remarkably antefurcal.

Distribution – China (Manchuria) (MÓCZÁR 1968).

Cleptes moczari LINSENMAIER

Cleptes moczari LINSENMAIER, 1968: 4 ♀ ♂. Holotype ♀; Greece: Alt-Korinth (CL).
Cleptes moczari: KIMSEY and BOHART 1991: 61 ♀ (*semiauratus* group).

Material examined: 3 ♀, 8 ♂. Greece: "Altkorinth Graecia 31.5.1963 leg. K. Kusdas", "Paratype ♀ Cleptes Ltr. moczari Linsm. Linsenmaier det. 1965", 1 ♀,1 ♂ (Budapest Hym. Typ. No. 3854–3855) and Alt-Korinth Pelop. VI.1963, V.1964 (M. Schwarz and J. Schmidt), 2 ♀, 7 ♂ (HNHM).

The specimens correspond to the original description except the colour largely violet with few (♀) or more (♂) greenish and bluish reflections (not "ziemlich gleichmässig blaugrüne bis grünblaue Färbung von Kopf und Thorax... nur Meta-Thorax hinter dem Metanotum mehr violetblau bis dunkelviolet"). The average length of the above specimens is 5.4 mm ♀ ♂, one male is only 4.2 mm.

Additions to the original description. ♀ = MS 2.6 MOD long. Ped 2.4 times as long as wide, F-I 2.7 ×, F–II 1.5 ×, F–III 1.0 times as long as wide. Nervulus interstitial or rarely hardly antefurcal (♂). Head closely, pronotum deeply punctured, punctures 0–1 PD apart, on scutellum scattered, 1 to 3 PD apart ♀ ♂. The row of minute fovea usually shorter in front of postscutellum than in the smallest male. ♂ = MS 1.8 MOD long. Ped 2.4 times as long as wide, F-I 2.5 ×, F–II 1.7 ×, F–III 1.4 times as long as wide.

Distribution – Greece (LINSENMAIER 1968).

Cleptes radoszkowskii RADOSZKOWSKI

Cleptes radoszkowskii MOCSÁRY (Inédite) RADOSZKOWSKI, 1889: 23: 7 ♀ ♂ Figs 5a-c,i,k. Lectotype ♀ (desig. herein); Russia: Caucasus (ISK).

Cleptes radoszkowskyi MOCSÁRY, 1889: 44 ♀ ♂ (description in 1888); BUYSSON 1891: 83 ♀ (sec. sp. typ. Caucase); BUYSSON 1900: 125 (Oran).

Cleptes radoszkowskii: SEMENOV T. S. 1920: 313.

Cleptes radoszkowskii: KIMSEY and BOHART 1991: 63 (syntype ♂♀, "Caucasus", Krakow, *semiauratus* group)

Material examined: 2 ♀, 5 ♂. Russia: "Caucas Nlocos", "Lectotypus C. ♀ radoszkowskii Rad. des. Móczár 997" (left antenna, left middle and hind legs and right fore legs missing), 1 ♀ lectotype (ISK); "Caucas(us) MLOK", a round golden paper, "Radoszkowsk Moc", with author's handscript, "Paralectotypus Clep. ♀ radoszkowskii Rad. des. Móczár 1997" (both antennae, left fore leg and right wing partly wanting) 1 ♀ (ISK); "a-Cauc"(asus) (abdominal segments III–VI wanting, more correctly last segments with the sternite and some portions of male genitalia lies on label in glue), further labels: "Paralectotypus Cl. radoszkowskii Rad. des. Móczár 1996" and "Cleptes femoralis Mocs. ♂ det. L. Móczár 1996", 1 ♂ (ISK); "Caucasus", "Type", "Radoszkowsk ♂" RADOSZKOWSKI's original writing, "Paralectotypus Cl. radoszkowskii Rad. ♂ des. Móczár 1997", "Cleptes femoralis Mocs. ♂ det. Móczár 1995" 1 ♂ (ZMB); Gruzia: "Lagodechi", 1 ♂ (see in *ignidorsum* sp. n.); Nucha 1 ♂ (see in *C. aerosus* FÖRSTER); "Astradamovka Jun Mugan ASSR 17.Jun 1927 (Bogarnikov)", "Cleptes radoszkowskii Rad. nov. ♂ det. Móczár 1997", 1 ♂ (Hym. Type No. 3856, Budapest, HNHM).

The status of this species was very uncertain, because the original diagnosis was very short (♀ ♂). In RADOSZKOWSKI's diagnosis: "Mas. Assimilis Cl. nitidulae; squammulis piceis, tarsis posterioribus brunneis. Long. 6 mm. Armure... fig. 5k." For this reason it belongs to the subgenus *Leiocleptes* (pronotum without any pits-row and mid-line). The first examined syntype (♂) found in Berlin (with an intact abdomen), as well as the second syntype (♂) requested for some years ago from Krakow (in the latter the genitalia was separated and delineated by RADOSZKOWSKI), all belong to *Cleptes femoralis* MOCSÁRY. MOCSÁRY (1889) published a detailed description (♀ ♂), based on the material sent to him by RADOSZKOWSKI.

SEMENOV (1920) examined 1 ♂, published 2 specimens as "radoszkowskii Rad. 1888" ♀, ♂ from Lagodechi and Nucha. The specimen from Lagodechi proved to be *C. ignidorsum* sp. n. ♂ and from Nucha *C. aerosus* FÖRSTER ♂ (not ♀).

The male from Astradamovka seems to be the previously unknown, true male (subgenus *Holcocleptes*), described in the key and below, which agrees with the female in some respects. Finally, after returning the male, I received two female syntypes from Krakow. They are identical with the original diagnosis and with MOCSÁRY's description. Consequently, I designate the first described female as lectotype and the paralectotypes (♀, ♂) of this species.

Additions to the original diagnosis and the description of the previously unknown male. The comparison of the proportions of the specimens and of *radoszkowskii* with *femoralis* are as follows:

	MS:MOD	Ped	F-I	F-II	F-III
radoszkowskii lectotype	1.7	2.3	2.9	1.6	1.3
paralectotype ♀	1.7	–	–	–	–
Astradamovka ♂ new	1.3	1.7	3.0	1.7	1.7
femoralis MOCSÁRY ♂	0.8–1.0	1.8	2.5	1.9	1.8
Krakow, paralecto. ♂	0.8	1.8	2.5	1.9	1.9
Berlin, paralecto. ♂	0.8	1.8	2.5	1.9	1.9

♀, ♂ – Pronotum, mesonotum and scutellum flame red. Lower face green. Fore and middle tibiae and tarsi yellowish brown. Abdominal segments I–II yellowish brown entirely, III only basally, and with large spots laterally; T–III posteriorly and IV black without metallic colour, T–IV with narrow yellowish brown lateral streaks. Head 1.2 times as broad as long. Frons (Fig. 5), pronotum with rather deep and dense, partly coarse punctures, punctures about 0.5–1 PD apart. Mesonotum, scutellum with distinctly smaller and scattered punctures. Ocellar triangle in front rectangular 1.2 times (♀) or 1.5 times (♂) as far from eye margin as from each another. Lateral margins of clypeus parallel, angles nearly rectangular, apical margin straight; surface entirely (♀) (Fig. 5) or only apically (♂) punctured.

♀ = Vertex flame red behind ocelli, along inner eye margins and between the black spot and the green lower face. Along frontal sulcus golden. Pronotal collar blackish or dark green (in paralectotype ♀). Propodeum greenish blue. Mesopleuron bluish green or with golden tints. Fore and middle femora green, partly violet, hind femora black nearly entirely with greenish tints. Nervulus interstitial or antefurcal in a small degree. Radial cell slightly brownish stained. Body partly with white and brownish hairs.

♂ = Vertex entirely flame red. Scape, mandible base, clypeus bright green. Scutellum golden. Sides of pronotum, collar and femora bluish green. Propodeum, mesopleuron and coxae largely bluish with more or less violet reflections. Wings hardly infuscated. Nervulus strongly antefurcal. Body with white hairs. Mesonotum with punctures 1–2 PD, scutellum with 1–3 PD apart. Punctures of T–II 1–2 PD or more apart.

Distribution – Russia, Caucasus (RADOSZKOWSKI 1889), Astradamovka.

Cleptes radoszkowskii flammifer SEMENOW **stat. n.**

Cleptes flammifer SEMENOW, 1891: 180, 1 ♀. Holotype ? (? ZIP).
Cleptes flammifer: SEMENOV (sic) 1920: 314, 323
Cleptes flammifer: KIMSEY and BOHART 1991: 60. Holotype ♀. (as 1892: 498, *semiauratus* group) (ZIP).

Material examined: None.

Note. According to the diagnosis "sine ulla indicatione loci incolendi ... verisimiliter ... ex Europe meridionali". SEMENOV published later (1920: 314):

"Ceterum cum *C. radoszkowskii* Rad. congruens et fortasse ejus subspecies tantum". One specimen was found before the drawer label "flammifer Semenov" with the label "M. Nikolskaya det", but without species name in the collection of museum in St. Petersburg. This female from Armenia (Sevang) proved to be an *aerosus* FÖRSTER (see above). It was collected only in 1903. Being of the same opinion as SEMENOV (1920), I regard *C. flammifer* as a subspecies of *C. radoszkowskii* at most.

Distribution – ? Southern Europe (SEMENOW 1891).

Cleptes seoulensis TSUNEKI

Cleptes seoulensis TSUNEKI, 1959: 13, 1 ♀ Figs 8–12. Holotype ♀; Korea: Keijo (OMNH).
Cleptes seoulensis: KIMSEY and BOHART 1991: 64, 1 ♀. (Tsukuba, *orientalis* group).

Material examined: 1 ♀. Korea: "Keijo Kosidou Keijo-C 5–7–1934 S. Eguchi", "Cleptes seoulensis TSUNEKI Holotype" (red label),"N. Tosawa Collection, June, 1798", 1 ♀ (OMNH).

The description agrees with the holotype and differs only as follows. Ocelli in acute triangle (not in a nearly equilateral triangle, as in TSUNEKI). Additions to the diagnosis. Anterior vein of discoidal cell slightly indicated, nervulus interstitial, nearly antefurcal. Head, pronotum, mesonotum basally with close punctures, laterally, posteriorly and scutellum densely punctured, punctures 1–1.5 PD apart. T–I with fine, scattered punctures, 1–3 PD apart, T–II –III with deeper, dense and T–IV with distinctly double punctures (Fig. 9). MS 1.8 MOD long. Ped 1.9 times as long as wide, F-I 2.2 ×, T–II 1.4 ×, T–III 1.2 times as long as wide.

Distribution – Korea (TSUNEKI 1959).

Cleptes sjoestedti HAMMER

Cleptes Sjöstedti HAMMER, 1950 (February): 2, 2 ♀. Neotype ♀ (desig. herein); China: Kiangsu (NMW).
Cleptes sjostedti: KIMSEY and BOHART 1991: 64 ♀ (Stockholm, *orientalis* group).
Cleptes pinicola LIN, 1959: 205, 2 ♀. Holotype ♀; Taiwan: Lien-hwa-ch ich (Rengechi) (TARI). Syn. n.

Material examined: 7 ♀, 1 ♂. China: "Provins Kiangsu", "China Koltboff" (sic, in diagnoses by KOLTHOFF), "okt", "Type" (red label), "Coll. Hammer", "Cleptes sjöstedti ♀ Type Hammer", "Neotypus Cleptes sjoestedti Ham. det. Móczár 1995", 1 ♀ (NMW): n(ea)r Fcochow (C. R. KELLOG), 1 ♀ and Komaba 5.IV.1899, 1 ♂ (USNM). – Taiwan: "Rengechi 8 4 1924 Col. J. Sonan", "Cleptes ♀ pinicola LIN (Holotype) det. VII.1958" (red label), 1 ♀ and Tao-Ping-chi, Miao-Li Hsien IX.1963, reared from cocoon of *Nesodiprion japonica* Marl., K. S. LIN det. (M. T. Tang), 1 ♀ (TARI). – Korea: Suigen V-VI. 1928 ex saw-fly cocoons (T. R. GARDNER and C. P. CLAUSEN), 2 ♀ (USNM), 1 ♀ (HNHM).

HAMMER reported the depository of the type material "holotype in Stockholm and paratype in coll mea" (Wien). From the kind letter of FREDRIK RONQUIST (NRS): "I have not been able to find the type of *C. sjostedti* in the collection... This probably means that it not returned to the Museum in Stockholm by Dr HAMMER... However, this type appears to be lost." Consequently, I designate HAMMER's paratype located in Wien as neotype (Internat. Code of Zool. Nomenclature 1985 part 75).

The neotype of *sjoestedti* and the holotype of *pinicola* agree well with one another, and with the original diagnosis, differing only as follows. Length of the neotype 8.5 mm (not 10 mm as in HAMMER's diagnosis), length of *pinicola* 8 mm (not "about 5.5–8 mm" as in LIN's diagnosis. The "broad, pale brown transverse fascia below radial cell" according to LIN (l. c.: 207) indistinct on neotype from China, Korea and lacking in *pinicola*. Clypeus hardly bulging, nearly straight with a minute tooth on the corners (Fig. 19) (not "zweimal gebuchtet... winkelig abgerandet", as in HAMMER's diagnosis)

The following detailed characters are partly missing from the original diagnosis. Head largely greenish blue and violet purple around ocelli (neotype) or largely violet and black around ocelli (Korea) or bluish green with violet tints (*pinicola*). (Also in the following text, the name of the country always refers to *sjoestedti* specimens or to the neotype of *sjoestedti*.) Pronotum black with violet and greenish blue reflection laterally (neotype), or black, partly violet and bluish green tints (Korea). Mesonotum black (Korea, 3 spp.) and with few violet tints (neotype) or with bluish green tints (*pinicola*, and 1 sp. China). Scutellum dark greenish black. Abdominal terga largely violet and greenish blue laterally and in front (neotype and Korea) or violet only medially and greenish blue otherwhere (*pinicola*, 1 ♀ China). These small differences and the inconsistent colour aberrations listed above are not sufficient to consider *C. pinicola* as a distinct species. Consequently, I consider it a synonym of *C. sjoestedti* HAMMER.

Further additions in relation to proportions of malar space and flagellomeres of *sjoestedti* neotype – *sjoestedti* species from Korea – *pinicola* holotype (in this succession): MS 1.8–1.9–? MOD long. Ped 2.1–2.0–2.0 times as long as wide, F-I 2.4 -2.4 -2.2 ×, F–II 1.2–1.3–1.3 times as long as wide. Anterior vein of discoidal cell incomplete (neotype) or pale (Korea), nervulus antefurcal. T–II densely punctured on the anterior two-thirds. T–III–IV deeper, largely closely, more strongly punctured.

The previously unknown male agrees with the female in the colour of the head, thorax and in sculpture, but differs as follows: length 5.5 mm. Vertex and pronotum partly, mesonotum largely black, partly with violet tints. All flagellomeres dark brownish except dark bluish scape above. T–I–IV brown, only with traces of pale violet tints. T–V entirely, T–I–IV in some places lighter brownish chestnut coloured. Coxae with greenish blue, femora and tibiae with violet reflec-

tion. Ped 1.4 times as long as wide, F-I 2.7 ×, F–II–III 1.2 × and F–IV 1.4 times as long as wide. Terga III–IV with double and remarkably stronger punctures than in female.

Distribution – China (HAMMER 1950). Taiwan and Korea.

* * *

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