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A new species of *Cassida* LINNÉ, 1758 from Cyprus
(Coleoptera: Chrysomelidae: Cassidinae)

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ABSTRACT. *Cassida pfefferi* n. sp. is figured and described from Cyprus. A key to the *Cassida nobilis* group is given.

Key words: entomology, taxonomy, new species, key, Coleoptera, Chrysomelidae, Cassidinae, *Cassida*, Cyprus.

The genus *Cassida* LINNÉ, 1758 comprises hitherto 414 described species (BOROWIEC & ŚWIĘTOJAŃSKA 2002). They are distributed mainly in the tropical Africa and Asia. In the Palaearctic region no more than 100 species occur. GRUEV (1995) recorded five species of *Cassida* from Cyprus, including *Cassida vittata* VILLERS, 1789.

During my studies in the National Museum Prague, I found new species from Cyprus. After examination of specimen published by GRUEV (1995), I concluded that *Cassida vittata* VILLERS, 1789 should be removed from the list of Cyprian species because it actually represents *Cassida pfefferi* n. sp. The new species belongs to the *Cassida nobilis* group and its description is given below together with a key to the group.

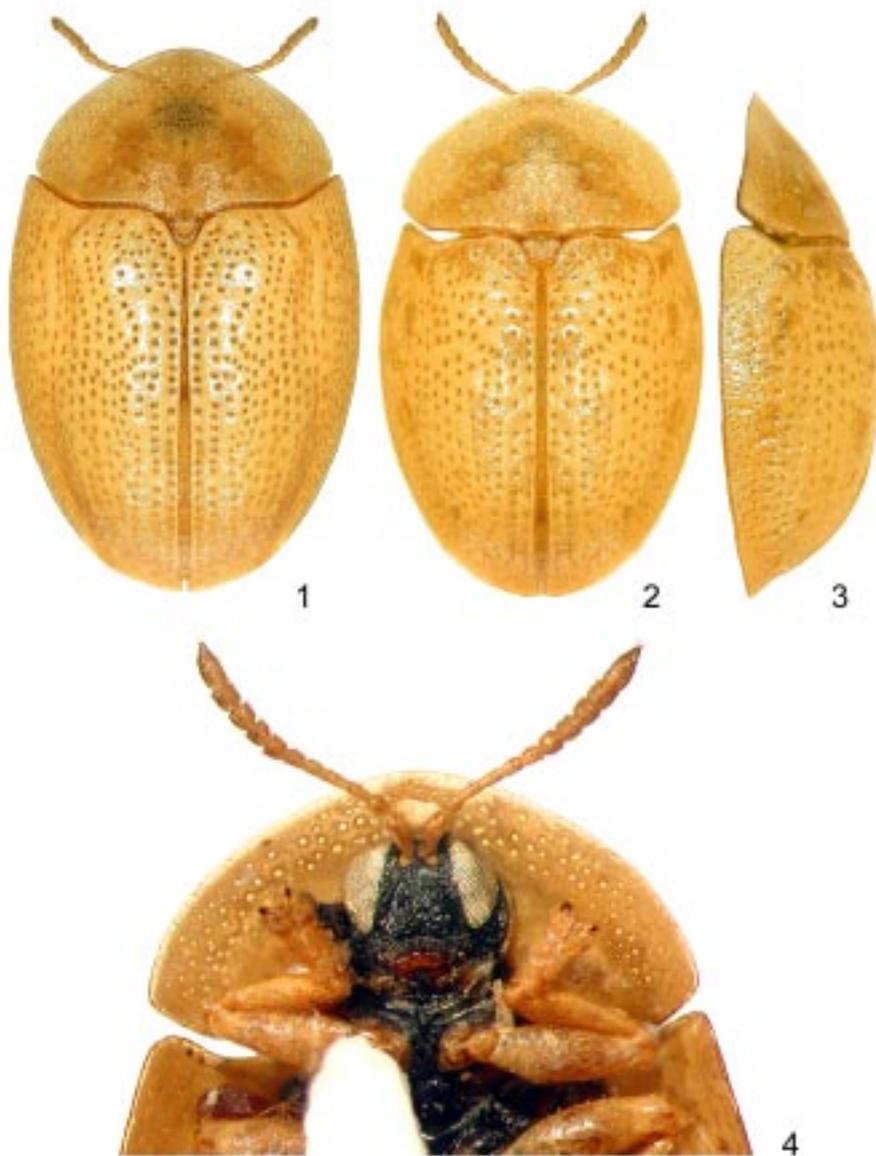
***Cassida pfefferi* n. sp.**

ETYMOLOGY

Dedicated to Antonín PFEFFER, excellent Czech specialist in *Scolytidae*.

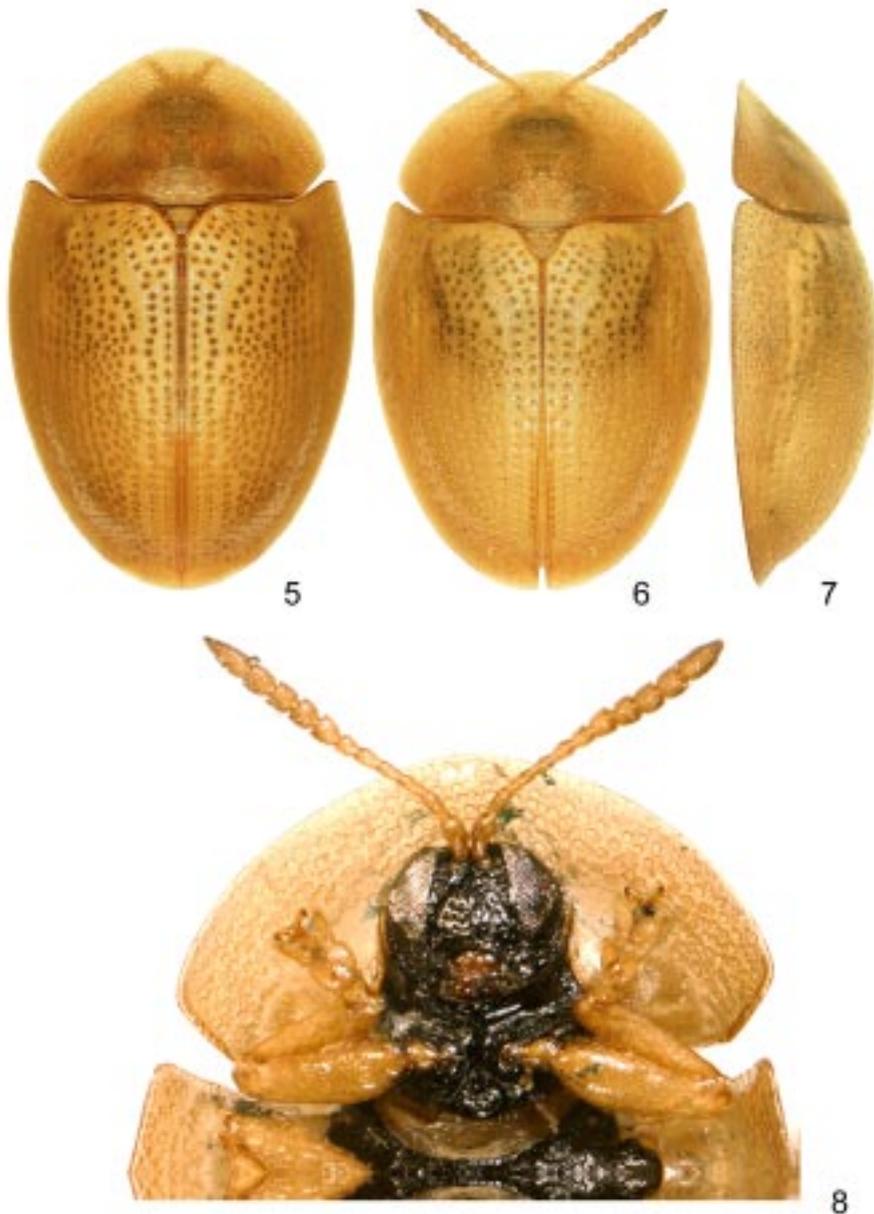
DIAGNOSIS

The *C. nobilis* group is characterized by yellow or brown dorsum, usually with two golden or silver longitudinal bands, elongate oval body, steeply decreasing explanate margin of elytra, base of elytra distinctly wider than pronotum,



1-4. *Cassida pfefferi*: 1 - female dorsal, 2 - male dorsal, 3 - male lateral, 4 - head, antennae, prosternum and fore legs

basal margin without black teeth and humeral angles protruding anterad. Elytral disc regularly convex, its puncturation at least partly irregular, without erected setae, impressions, costae or wrinkles. Legs at least partly yellow, tarsi with



5-8. *Cassida pfefferi* (form from Paphos): 5 - female dorsal, 6 - male dorsal, 7 - male lateral, 8 - head, antennae, prosternum and fore legs

divergent claws and without basal teeth. The group comprises hitherto six described species: *C. nobilis* LINNÉ 1758, *C. olympica* SEKERKA 2005, *C. ovalis* SPAETH 1914, *C. parvula* BOHEMAN 1854, *C. persicana* BOROWIEC 1999, and *C. vittata* VILLERS 1789.

Cassida pfefferi n. sp. differs from all species of the group in the punctuation of elytral disc almost completely irregular. *C. nobilis*, *C. olympica*, *C. persicana* and *C. parvula* differ in the structure of clypeus. They have deep clypeal grooves converging in the triangle which ends distinctly before antennal insertions, while in *C. pfefferi*, *C. vittata* and *C. ovalis* they are moderately deep and end close to antennal insertions. Dried specimens of *C. pfefferi* have no shiny longitudinal bands like *C. olympica*, but their femora are completely yellow, while *C. olympica* has femora with basal part black; *C. pfefferi* is larger than *C. olympica* and has almost obtuse hind angles of pronotum. *C. vittata* differs in sharp hind angles of pronotum, abdomen mostly black, only with narrow yellow margin and often black labrum, larger size and body almost parallelsided. *C. pfefferi* has abdomen black only in the middle part of segments 1-4, segment 5 is completely yellow (only two examined specimens have also middle part of segment 5 black, but they differ in more characters; see their differences at the end of description); labrum is always at least partly rusty, never completely black; hind angles of pronotum moderately angulate. *C. ovalis* differs in clypeus and thorax yellow. Sometimes it has clypeus infusate black, but it is well characterized by more perpendicular explanate margin of elytra than in *C. pfefferi*. All colour photos of *Cassida nobilis* group, distribution, synonymic notes and bionomics are available in BOROWIEC and ŚWIĘTOJAŃSKA (2002).

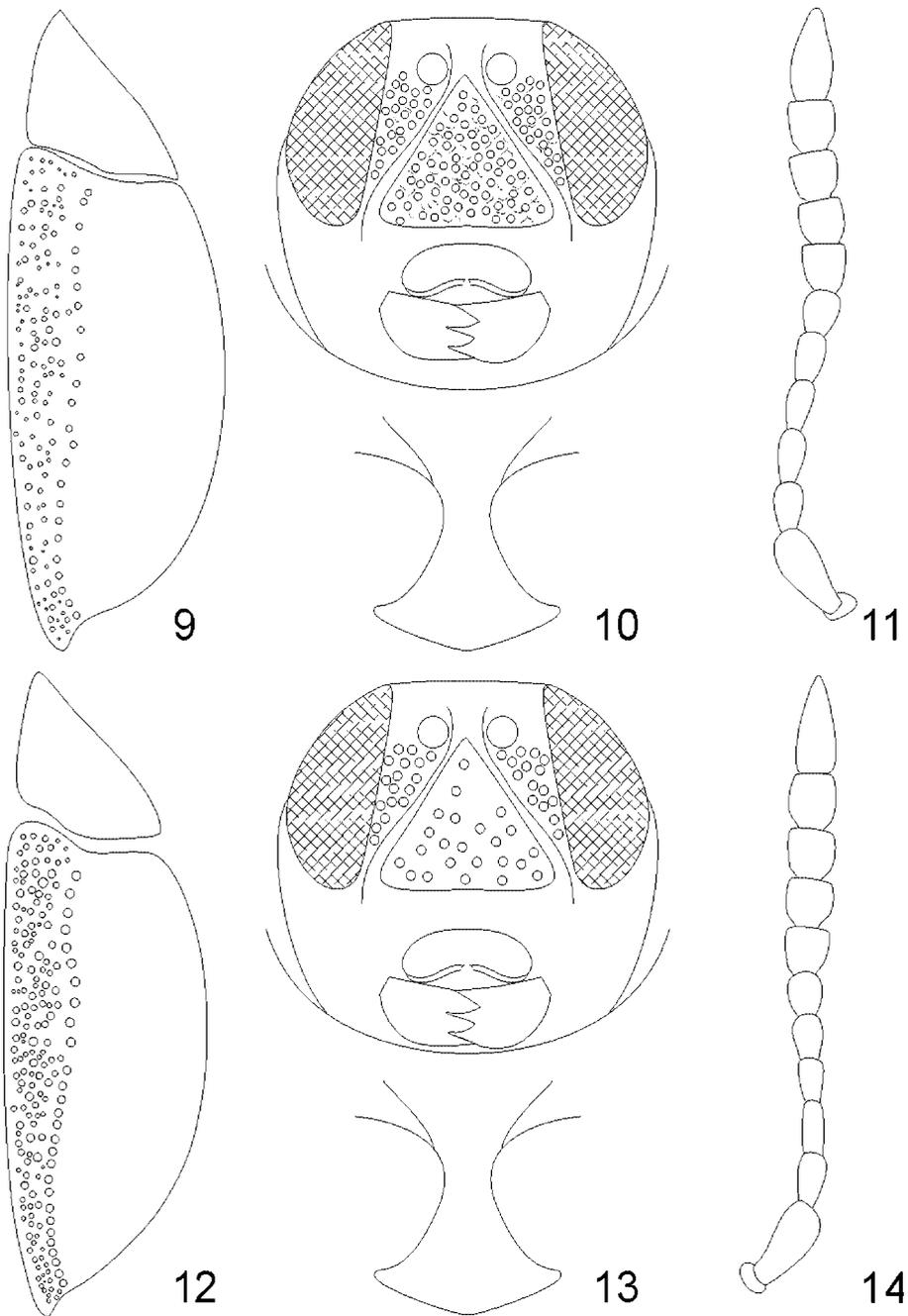
DESCRIPTION

Length: 4.32-5.25 mm (mean 4.81 mm), width: 2.95-3.45 mm (mean 3.23 mm), length of pronotum: 1.21-1.54 mm (mean 1.35 mm), width of pronotum: 2.45-2.89 mm (mean 2.68 mm), length/width ratio: 1.38-1.57 (mean 1.49), width/length of pronotum ratio: 1.86-2.11 (mean 1.99); measured for 28 specimens. Body elongate oval (figs 1, 2).

Pronotum and scutellum yellow. Elytral disc yellow, without two longitudinal bands. Explanate margin of elytra yellow. Clypeus black, labrum and mouth parts rusty. Thorax black with yellow epimera and episterna, abdomen black only in the middle part of segments 1-4. Segment 5 and pygidium completely yellow. Legs completely yellow including coxae. Antennal segments 1-6 completely yellow, segment 7 sometimes infusate darker, segments 8-11 deep yellow.

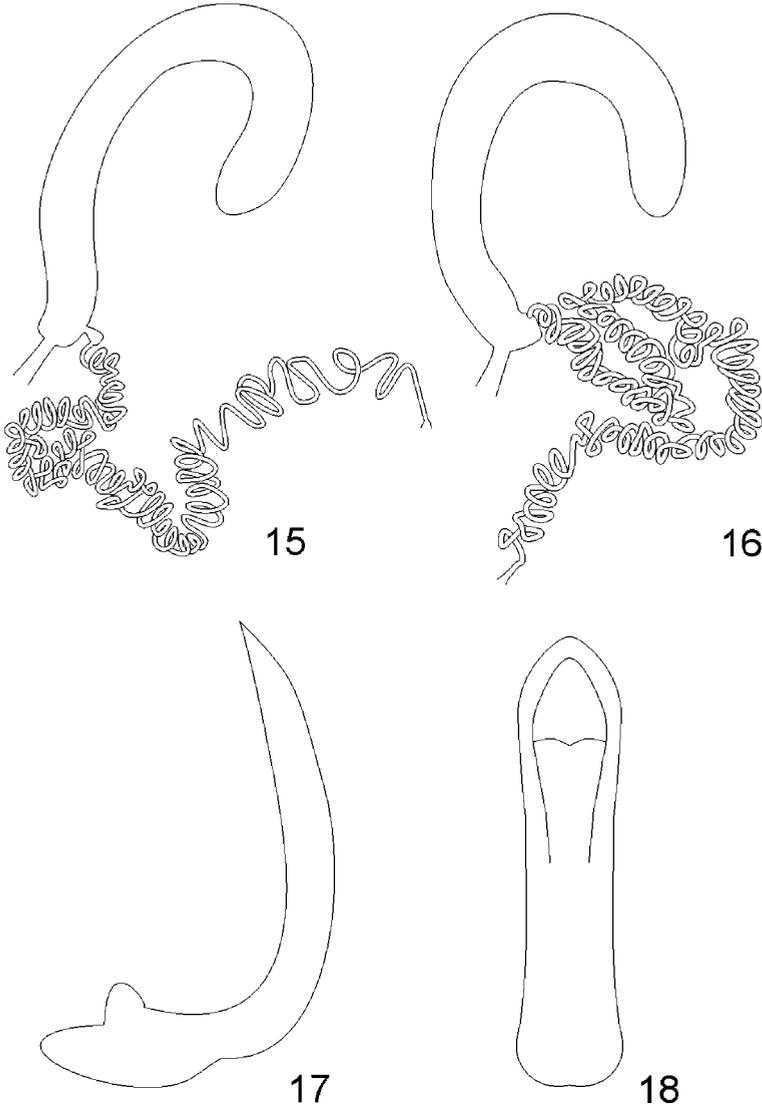
Pronotum subpentagonal, with maximum width at posterior angles. Disc regularly convex, indistinctly bordered from the marginalia, moderately punctate. Marginalia irregularly punctate, hind angles angulate.

Scutellum triangular, without impressions. Base of elytra only slightly wider than pronotum, humeral angles slightly protruding anterad, almost rounded. Punctuation of disc mostly irregular, dense, but punctures along suture tend to



9-14. *Cassida pfefferi*: 9, 12 - lateral, 10, 13 - head and prosternum, 11, 14 - antenna; 12-14 - form from Paphos

form more or less regular rows. Punctures distinct, deep. Intervals completely flat, 2nd interval hardly visible, especially in lateral part hidden with confused punctures, not or only slightly wider than others, without distinct shiny band. Whole surface of disc smooth and dull. Marginal row distinct, broken by several vacancies, its punctures are not as regularly rounded as punctures in lateral part of disc



15-18. *Cassida pfefferi*: 15, 16 - spermatheca, 17 - aedeagus lateral, 18 - aedeagus dorsal; 16 - form from Paphos

and puncturation is sparse (figs 3, 9). Explanate margin steeply decreasing, moderately broad with maximum width in 1/3 length. Whole surface of marginalia sparsely and irregularly punctate. Punctures fine, not as deep as in the disc.

Clypeus flat, as long as wide, with coarse punctures and little wrinkles on whole surface. Clypeal grooves distinct, moderately deep, converging in arch which ends close to antennal insertions (like in *C. ovalis* and *C. vittata*), while in other members of the group they ends distinctly before antennal insertions. Eyes large. Labrum shallowly emarginate. Prosternal process broad, moderately expanded apically (figs 4, 10), often with shallow impression between coxae, smooth.

Antennae stout, segment 9 as wide as long, segment 10 slightly longer than wide. Length ratio of antennal segments: 100:66:74:64:69:58:59:57:66:73:125. Segment 3 approximately 1.12 times longer than segment 2 and 1.16 times longer than segment 4 (fig. 11).

Claws simple, divergent (fig. 4).

Male genitalia: aedeagus moderately broad (figs 17, 18) without species characters, structure of ejaculatory apodeme very variable.

Female genitalia: vasculum "J" shaped sometimes darkened in the inner part. Ampula short, ductus long and forming a thin spiral. (fig. 15).

Specimens from Paphos differ from the rest of examined material, maybe they represent independent species. It is difficult solve their status based only on the two specimens, so they are treated only as variation of *C. pfefferi* until I have more material. Below I described characters which differ from typical specimens of *C. pfefferi*.

Length: 4.98-5.33 mm (mean 5.15 mm), width: 2.93-3.32 mm (mean 3.12 mm), length of pronotum: 1.52-1.54 mm (mean 1.53 mm), width of pronotum: 2.54-2.57 mm (mean 2.56 mm), length/width ratio: 1.60-1.70 (mean 1.65), width/length of pronotum ratio: 1.67 (measured for 2 specimens). Body elongate oval (figs 5, 6).

Thorax black, abdomen black in the middle part of all segments and black area is wider than in typical *C. pfefferi*. Coxae black, trochanters infuscate black, femora yellow, darkened at the base, remainder parts of leg yellow. Puncturation of explanate margin of elytra and marginal row denser. 2nd interval distinct, wider than others, surface of elytra smooth and shiny. Clypeus only with several punctures and without wrinkles (fig. 13). Elytra are less arched (fig. 12). Length ratio of antennal segments: 100:62:63:59:55:50:60:63:59:67:123. Segment 3 only slightly (1.02 times) longer than segment 2 and 1.07 times longer than segment 4 (fig. 14). It has also different structure of spermatheca, the ductus is almost 1/3 longer and vasculum "U" shaped (fig. 16). Aedeagus slightly narrower.

Biology unknown, according to the distribution and feeding habits of other members of the group it probably feeds on *Chenopodiaceae*.

DISTRIBUTION

Sea sides of Cyprus (fig. 19) and ?Lebanon.

Note. Record from Lebanon is based on one specimen labelled “Palestina: Beisour” (nowadays Baissour situated in S Lebanon, E of Sidon) and has partly illegible label. Maybe there is “4[00 ft] below sea L[evel].”. I do not know what author meant because locality is situated in the foothills (ca 360 m a.s.l.). If the record from Lebanon is correct, it seems that distribution could be similar to *Cassida pellegrini* MARSEUL, 1868 (Cyprus, Israel, Lebanon and Saudi Arabia).

TYPE MATERIAL

Holotype, male: “Salamis, CYP., V.1973, lgt. Pfeffer”, “ex coll. Pfeffer, Nat. Mus. Prague” (at the National Museum, Prague, Czech Republic); 26 paratypes: same data; 42 paratypes: “Salamis, V.1973”, “Cyprus, R. Veselý lgt.”; 1 paratype: “Cyprus Larnaka, Glaszner”, “*Cassida vittata* Vill., det. B. Gruev”; 1 paratype: “Cyprus Larnaka, Bordan”, “*Cassida vittata* Vill., Spaeth det.”; 4 paratypes: “CYPRUS: Famagousta. 2.vii.1945. G.A.Mavromoustakis. B.M.1946-16.”; 2 paratypes, male and female: “N. of Paphos, Coral Bay, 20/ii/2002, M.V.L. Barclay, BMNH {E} 2002-29”. 1 paratype: “Palestine. Beisou[n/r] [this part illegible] below sea L. 6.I.1920. P.J.Barraud.”, “*vittata* V. Spaeth det.”. Paratypes at the National Museum, Prague, Czech Republic, at the Department of Zoology, Faculty of Biological Sciences, University of South Bohemia, České Budějovice, Czech Republic, at the Department of Biodiversity and Evolutionary Taxonomy, Wrocław University, Wrocław, Poland, at the British Museum of Natural History, London, United Kingdom, and at the Hungarian Natural History Museum, Budapest, Hungary. All specimens provided with red label: “HOLOTYPUS [PARATYPUS] *Cassida pfefferi* n. sp. L. Sekerka det. 2005 [2006]”.



19. Distribution map of *C. pfefferi* on Cyprus

KEY TO THE *CASSIDA NOBILIS* GROUP

1. Clypeal grooves moderately deep converging in the triangle which ends close to antennal insertions. 2.
- . Clypeal grooves deep converging in the triangle which ends distinctly before antennal insertions. 6.
2. Puncturation of elytra mostly irregular, at most along suture tends to form more or less regular rows. Hind angles of pronotum slightly angulate. Species exclusively from Cyprus and ? Lebanon. 3.
- . Puncturation of elytra only partly irregular, tends to form regular rows along the suture and in the lateral part of disc. Hind angles of pronotum angulate or sharp. Palaearctic incl. N. Africa except Cyprus. 4.
3. Puncturation of marginalia sparse and fine. Elytra strongly convex. Thorax black with yellow epimera and episterna, abdomen black only in the middle of segments 1-4. Coxae and legs completely yellow. 2nd elytral interval not or only slightly wider than others, often hardly visible, hidden with confused punctures; elytra dull. *C. pfefferi* n. sp.
- . Puncturation of marginalia very dense and stronger. Elytra moderately convex, more flattened. Thorax completely black, all abdominal segments with black area except pygidium. Coxae always black, femora darkened at the base. 2nd elytral interval distinct, wider than others, elytra shiny. *C. pfefferi* n. sp. (form from Paphos).
4. Explanate margin runs strong perpendicularly. Ventrites completely pale, at most clypeus infuscate black. France and North Africa. *ovalis* SPAETH
- . Explanate margin of elytra runs slightly obliquely. Ventrites always with black, clypeus completely black. Femora yellow, at most sometimes base infuscate darker. 5.
5. Large and elongate. Elytra almost parallelsided, shape almost rectangular and narrow. Hind angles of pronotum sharp. Palaearctic region. *vittata* VILLERS
- . Smaller and oval. Elytra broad, in the lateral part strong tapered. Hind angles of pronotum less sharp, angulate. N. Africa. ... *vittata* ssp. *atlantica* ESCALERA
6. Clypeus rusty. Legs completely yellow, or only slightly infuscate black at the base of femora. 7.
- . Clypeus black. Legs always with basal part of femora black. 8.
7. Ventrites completely yellow. Iran only. *persicana* BOROWIEC
- . Thorax black, abdomen black with yellow margin. Palaearctic part of Asia, in Europe known only from Bulgaria and Romania. *parvula* BOHEMAN
8. Femora black at most in their 1/3, tibia yellow. Elytra never with golden bands, its punctures dense but small. Abdomen with broad yellow margin. Living specimens green with red tint. NE Greece. *olympica* SEKERKA
- . Femora black at least in their 2/3, tibia often infuscate darker. Elytra always with golden bands (only not fully sclerotised specimens do not have these bands), its punctures large. Abdominal margin moderately broad. Living specimens yellowish-brown with two golden bands. Whole Palaearctic region. *nobilis* LINNÉ

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