

The taxonomic status of *Cicindela (Cicindela) reitteri* HORN, 1897, with some remarks about the subspecies and forms of *Cicindela (Cicindela) maritima* DEJEAN, 1822 (Coleoptera: Carabidae, Cicindelinae)

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Abstract. After a study of type specimens and of additional material the taxonomic status of *Cicindela hybrida reitteri* HORN, 1897, is discussed. This taxon represents a colour form of *Cicindela restricta* FISCHER VON WALDHEIM, 1825, only. Therefore, the following synonymy is established: *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897. A lectotype has been designated for *C. hybrida reitteri* HORN, 1897 (DEI). – Populations occurring in western and south-western Mongolia between the Mongolian-Gobian Altai and Khan-Khukhei-Khangai mountain ranges, usually determined as *C. reitteri*, are described as *Cicindela maritima impercepta* subsp. nov. Further taxonomic notes are given on the subspecies of *Cicindela maritima* DEJEAN, 1822. Lectotypes are designated for *Cicindela baltica* MOTSCHULSKY, 1844 (ZMM and ZISP), and *Cicindela maritima tshemalensis* GEBERT, 1996 (ZSM and DEI). The following new synonymies are established: *Cicindela maritima tshemalensis* GEBERT, 1996 = *Cicindela maritima maritima* DEJEAN, 1822. It is shown, that ab. *pseudomaritima* LENGERKEN, 1912, refers to *C. maritima* DEJEAN, 1822, and not to *C. restricta*, while ab. *muelensis* GOMES, 1943, and ab. *imperfecta* GOMES, 1943, refer to *C. lusitanica lusitanica* MANDL, 1935, and not to *C. maritima*. Data on the geographic distribution, a synonymic list, a list of the named aberrations and a key for the subspecies of *C. maritima* are provided.

Key words. *Cicindela*, 'hybrida'-species group, 'maritima'-species group, type material, new synonymy, new subspecies, identify key.

Zusammenfassung. Anhand von Typen- und weiterem Material wird der taxonomische Status von *Cicindela hybrida reitteri* HORN, 1897, diskutiert. Es wird gezeigt, dass es sich dabei nur um eine Farbvariante von *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897, handelt. Demensprechend wird folgende neue Synonymie aufgestellt: *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897. Für letztere wird ein Lectotypus designiert (DEI). – Populationen aus der West- und Südwest-Mongolei aus dem Gebiet zwischen dem Mongolischen Gobi-Altai und den Khan-Khukhei-Khangai-Bergen, die zumeist als *C. reitteri* determiniert wurden, werden als *Cicindela maritima impercepta* subsp. nov. beschrieben. Es werden einige taxonomische Bemerkungen zu den Subspezies von *Cicindela maritima* DEJEAN, 1822, gemacht. Lectotypen werden für *Cicindela baltica* MOTSCHULSKY, 1844 (ZMM und ZISP), und für *Cicindela maritima tshemalensis* GEBERT, 1996 (ZSM und DEI) festgelegt. Folgende neue Synonymien werden erkannt: *Cicindela maritima tshemalensis* GEBERT, 1996 = *Cicindela maritima maritima* DEJEAN, 1822. Es wird ferner gezeigt, dass ab. *pseudomaritima* LENGERKEN, 1912, zu *C. maritima* DEJEAN, 1822, und nicht zu *C. restricta* zu stellen ist, während ab. *muelensis* GOMES, 1943, und ab. *imperfecta* GOMES, 1943, zu *C. lusitanica lusitanica* MANDL, 1935, und nicht zu *C. maritima* gehören. Darüber hinaus werden taxonomische Bemerkungen über die Unterarten und Formen von *Cicindela maritima maritima* DEJEAN, 1822, gemacht.

Introduction

Cicindela hybrida reitteri HORN, 1897, was described from Urga (northern Mongolia) from two specimens (1 ♂ 1 ♀). According to HORN (1897) it is well separated from other, closely related taxa by the wide, parallel pronotum, the long, parallel elytra and the extensive white elytral pattern. The latter is represented by the wide humeral and apical lunules and a long, sinuated medial band connected by the broad marginal band. Subsequently HORN (1938: Tab. 64: figs 22–23) also published illustrations of the elytra of two

other specimens of *C. hybrida reitteri* with more narrow, partly separated white elytral markings. Moreover, WERNER (1991: Tab. 17, figs. 133, 134) reproduced two photographs of *C. reitteri* with narrow and fully separated white elytral markings.

The taxonomic status of *C. hybrida reitteri* has been altered by subsequent authors as follows: HORN (1897, 1905, 1915, 1926, 1930) considered it a subspecies of *C. hybrida* (LINNAEUS, 1758) only. MANDL (1936) regarded it as a subspecies of *C. maritima* DEJEAN, 1822, and HORN (1938)

accepted this position. Later, RIVALIER (1950) considered it a separate species, closely related to *Cicindela restricta* FISCHER VON WALDHEIM, 1825, and *C. maritima* DEJEAN, 1822. This point of view was accepted by subsequent authors, such as CASSOLA & VAN NIDEK (1984), WERNER (1991, 1992) and GEBERT (1996).

The study of specimens usually identified as *C. (hybrida) reitteri* has shown that two different species are involved. On the one hand there are specimens, including the lectotype ♀ of *C. h. reitteri* (DEI), occur-

ring in northern Mongolia and in southern Transbaicalia. On the other hand, there are specimens from western and south-western Mongolia, which are found between the Mongolian-Gobian Altai and the Khan-Khukhei-Khangai mountain ranges. These two groups of specimens are well separated by the proportions of the labrum, pronotum and elytra, the white elytral markings and by ♂ and ♀ genitalic characters. Moreover, the Mongolian specimens are related to an undescribed form of *C. maritima*.

Material and methods

The present study is based on material deposited in the following museum collections:

- ZISP Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia);
 DEI Deutsches Entomologisches Institut (Eberswalde, Germany);
 MNUB Museum für Naturkunde der Humboldt-Universität zu Berlin (Germany);
 ZSM Zoologische Staatssammlung München (Germany);
 ZMM Zoological Museum of Moscow State University (Russia);
 MTTU Zoology and Ecology Department of the Moscow State Teachers' Training University (Russia);
 SZMN Zoological Museum of the Siberian Division of the Russian Academy of Sciences (Novosibirsk, Russia).

In this paper, the terminology referring to elytral patterns follows that of WILLIS (1968) and ACCIAVATTI & PEARSON (1989), that used for the chaetotaxy follows SPANTON (1988) and ACCIAVATTI & PEARSON (1989), that for the ♂ genitalia MATALIN (1998, 1999a, 1999b) and that for ♀ genitalia FREITAG (1972).

Characters of the internal sac structure of the penis were examined in detail. There are ten portions in the maximally inflated internal sac (figs 73–76). Seven of them, *i.e.* the ventro-apical (VA), ventro-lateral left (VLL), ventro-lateral right (VLR), dorso-apical (DA), dorso-lateral left (DLL), basal (B) and basi-lateral right (BLR) ones are typical for all taxa of the '*hybrida*'-group. Three other portions, *i.e.* the ventro-basal (VB), dorsal drop-shaped (DDS) and ligula (L) were found in species of the

'*maritima*'-group only (MATALIN 1999a). Moreover, there are six sclerites in the internal sac, *e.g.* the shield (sh), spring (sp), upper limitator (ul), lower limitator (ll), flag (f) and flagellum (fl), which are typical for all taxa of the '*maritima*'-group (FREITAG 1965; MATALIN 1998, 1999b). They are well distinguished from taxa of the '*hybrida*'-group by the lack of a medial tooth and a fairly large sclerite in the internal sac (figs 77–80).

Measurements were taken using an ocular micrometer and were defined as follows: total body length (from posterior margin of labrum to apex of elytra along suture), length of labrum (along midline), width of labrum (in widest place), length of pronotum (along midline), width of pronotum (in widest place), length of elytra (along suture), width of elytra (in widest place), length of mandibles (from base of retinaculum to apex), width of mandibles (in widest place), length of tibia, tarsus and penis (all in mm). For data analysis, the computer program "*Statistica*" (version 5.0) was used.

Systematic part

Cicindela restricta restricta FISCHER VON WALDHEIM, 1825

Cicindela hybrida reitteri HORN, 1897, *Dt. ent. Z.* 1897: 253 (syn. nov.)

Lectotype ♀ (here designated). „Mongol. bor. Reitter" [typeset white label], "Type. coll. W. Horn" [typeset white label], "Syntypus" [typeset red label], "coll. W. Horn. DEI. Eberswalde" [typeset white label], "ssp. *Reitteri. mihi*" [hand-written white label], "LECTOTYPUS. *Cicindela* (*s. str.*) *hybrida reitteri* W. Horn, 1897. design. A. V. Matalin, 1998" [typed and hand-written red label], "*Cicindela* (*s. str.*) *restricta restricta* F.-W. det. A. V. Matalin, 1998" [typed and hand-written white label]; Deutsches Entomologisches Institut, Eberswalde (DEI).

Total length of lectotype ♀ (without labrum): 13,4 mm. This specimen has erroneously been mentioned by WERNER (1991: Tab. 17, fig. 135) as a paratype of *C. reitteri*.

Remarks. After a detailed study of the lectotype ♀ and its comparison with other related taxa, it is concluded that *C. h. reitteri* represents a colour morph of *C. restricta* only. This point of view is supported by the external morphology and the genitalic structures. Thus, the proportions of the labrum, pronotum, elytra and mandibles of *C. h. reitteri* fall within the range of *C. h. restricta*. It will be noted that the same

morphological characters are well separated in *C. maritima* (figs 122–125). The shape of the pronotum (figs 23, 27–28) and of the female's coupling sulcus (figs 47–48) and the shape and the chaetotaxy of the syntergum 9/10 and sternum 8 of the genitalia of females are identical in both, *C. h. reitteri* (figs 94 and 106) and *C. restricta* (figs 98–100, 109–110). Moreover, a large series of *C. restricta* was taken in the valley of the Onon river (Dauriya) in June 1995 by Dr. DMITRY FEDORENKO. In this series there is a ♂ with a very broad, confluent white elytral pattern (fig. 44). However, the shape and the chaetotaxy of the labrum, pronotum, elytra and metacoxa and the shape of the apex of the penis and the configuration of the internal sac of the aedeagus in this specimen (figs 73–76) do not differ from the same structures in typical *C. restricta* (figs 77–80).

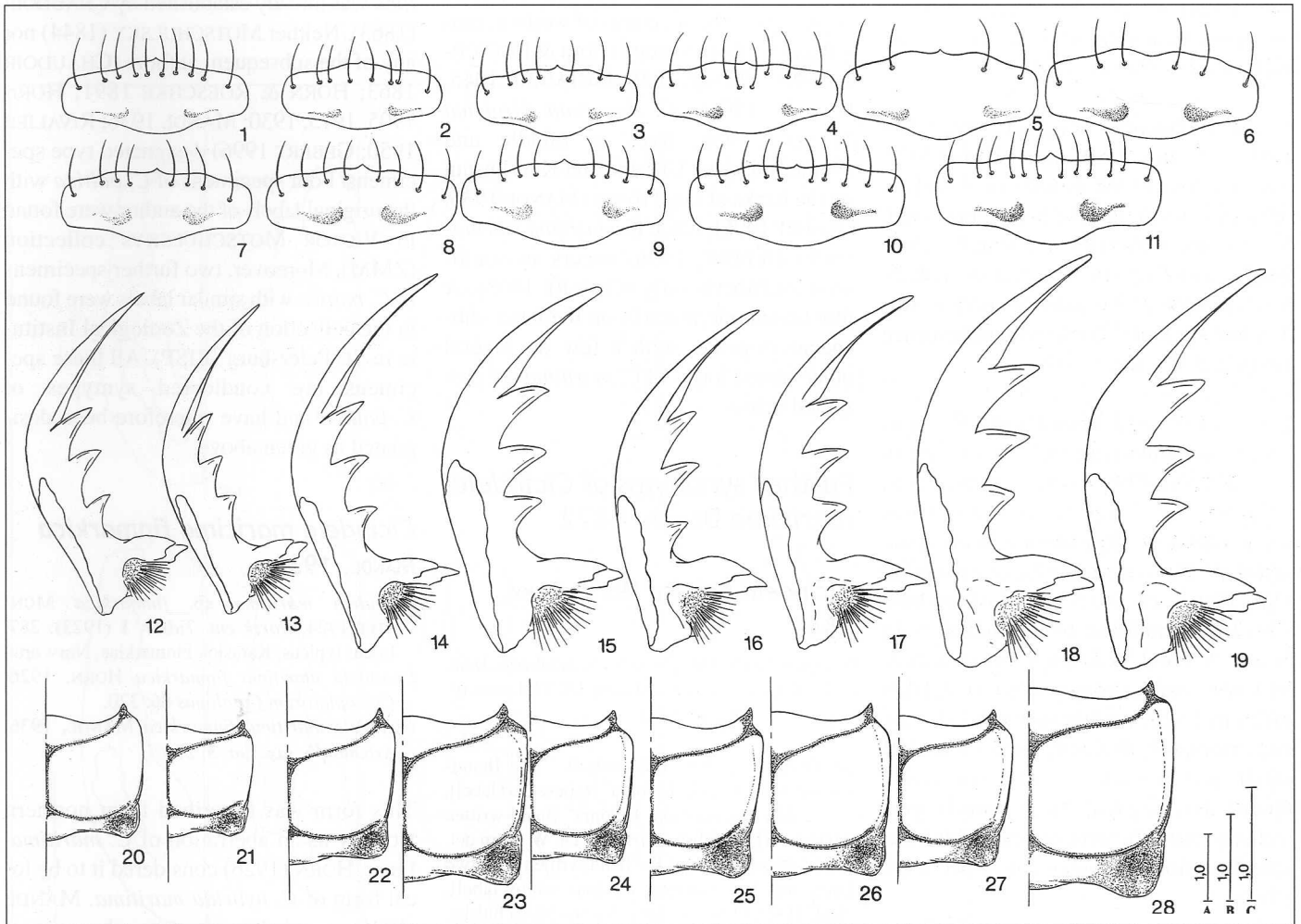
To the contrary, the form occurring in western and south-western Mongolia between the Mongolian-Gobian Altai and the Khan-Khukhei-Khangai mountain ranges is in fact related to *C. maritima*. The shape and proportions of the labrum, pronotum, elytra and mandibles (figs 122–125, 126–129) as well as the characters of the ♂ and ♀ genitalic structures support this opinion. The longitudinal, rounded lanceolate apex of the penis with broad, long external flanks in *C. maritima* (figs 53–66) is well distinguished from the short, sharply spear-formed apex of the penis with short, narrow flanks in *C. restricta* (figs 67–72). The structure of the internal sac is also quite distinct in these two species (figs 73–80, 81–88). There are three stout apical setae on the apices of the ♀ abdominal sternum 8 in *C. maritima*, while there are four such setae in *C. restricta* and *C. h. reitteri*. Moreover, the V-shaped margin of the ♀ abdominal sternum 8 in *C. maritima* is asetose (figs 101–105, 107–108), but with a single long seta in *C. restricta* and *C. h. reitteri* (figs 106, 109–110). The lateral portions of syntergum 9/10 is more circular in *C. maritima* (figs 89–93, 95–97). The Mongolian form is well distinguished from all other subspecies of *C. maritima* by the more transverse pronotum, a broadening in the apical third of the elytra with a very wide, white coupling pattern. The shape of the apex of the penis, the configuration of the internal sac of the aedeagus, the shape and chaetotaxy of the ♀ abdominal sternum 8 and syntergum 9/10 are also different if compared with the other subspecies. This form is described here as a new subspecies of *C. maritima*.

***Cicindela* (*Cicindela*) *maritima* *impercepta* subsp. nov.**

(Figs 1–5, 12–14, 20–22, 29–36, 46, 49–52, 64–66, 81–84, 89–93, 101–105)

MANDL 1974: 137 (*maritima reitteri*); WIESNER 1992: 115 (*reitteri* [part.]); GEBERT 1996: 26, Abb. 7 (*reitteri* [part.]).**Holotype.** ♀; Orok-Nuur lake, northern Gobi, Mongolia, 6–30.VI.926, KOZLOV; ZISP.**Paratypes.** 1 ♀; Orok-Nuur lake, northern Gobi, Mongolia, 6–30.VI.926, Kozlov (ZISP); 5 ♂ 2 ♀; Zavchan-Niederung, ca 20 km N von Zargalan, Aimak Gobi-Altai, 47°20'N/95°48'E, 1450 m, 22–24.6.1964; 1 ♂ 1 ♀; Mongolische VR, Mong.-Dt. Exp. 1986, 26.07.86, Telmen Nuur, leg. SCHUITTER (MNUB).**Derivatio nominis.** The name of the new subspecies is derived from the Latin "*imperceptus*, -a, -um" – unperceived or undiscovered, because this taxon has erroneously been determined as *C. reitteri*.**Description.** Total body length (without labrum) 10,1–12,4 mm (n=11). Ventral surface of head metallic bronze or green, with a distinct golden-cupreous sheen; clypeus cupreous with bronze tinge or green with cupreous, golden-cupreous or purple lustre; frontal stripes bright blue-green with violet or purple tinge, rarely golden-cupreous; ocular area bright cupreous with golden sheen. Four basal antennomeres deep green, third and fourth ones with bright cupreous sheen, sometimes with light purple tinge. Labrum white, with a narrow infuscate anterior margin; third and fourth maxillary palpomeres and fourth labial palpomere metallic green with cupreous or golden-cupreous lustre. Mandibles metallic green with cupreous tinge at base of teeth. Pronotum metallic cupreous or green, with distinct golden sheen laterally and along anterior and posterior margins; frontal and basal sutures bright

green or blue; midline thin, metallic green; proepipleurum and proepisternum cupreous or green with golden sheen; pro-, meso- and metathorax cupreous, green or blue-green, with light golden-cupreous or bronze lustre. Scutellum and elytral suture cupreous with golden lustre or green with cupreous tinge. Abdominal sternites metallic green or blue-green with a light golden lustre. Legs cupreous or green with golden or golden-cupreous tinge. Elytra bright cupreous or green with light cupreous reflections, with sparse, diffused, blue-green dots. White elytral pattern always complete, very wide; humeral and apical lunules, marginal and middle bands often merged along elytral margin (figs 29–36); the medial band sharply bent, with a distinct transversal portion (figs 29–31, 33, 35–36); apical part of medial band sometimes connected with apical lunule (figs 32, 34).



Figs 1–28. *Cicindela* *maritima* DEJEAN, 1822, and *Cicindela* *restricta* FISCHER VON WALDHEIM, 1825; labrum, mandibles and pronotum. – 1–11: labrum; 12–19: left mandibles; 20–28: pronotum, right half. 1–5, 12–14, 20–22: *C.* *maritima* *impercepta* subsp. nov.; 6, 15, 23: *C. hybrida reitteri* HORN (Lectotype); 7, 8, 16, 17, 24, 25: *C.* *maritima* *kirgisisca* MANDL, 1936; 9, 26: *C.* *maritima* *maritima* Dej.; 10, 11, 18, 19, 27, 28: *C. restricta restricta* FISCHER VON WALDHEIM, 1825. – 1, 2, 12, 20: Orok Nuur lake (south-western Mongolia); 3, 4, 13, 21: Zargalan (western Mongolia); 5, 14, 22: Telmen Nuur lake (western Mongolia); 7, 16, 24: Khoper river (Voronezhskaya Area); 8, 17, 25: Khar'kov (Ukraine); 9, 26: Lipovka (Tyumenskaya Area); 10, 18, 27: Ingirma river (Krasnoyarskij Region); 11, 19, 28: Onon river (Dauriya). – 1–3, 5–28: ♂; 4: ♀. 1, 12, 20: Holotype; 2–5, 13, 14, 21, 22: Paratypes. Scale bars (in mm): A: figs 20–28; B: figs 1–11; C: figs 12–19.

Head. Slightly wrinkled on vertex and occiput, with thin, sparse furrows on frons. Genae glabrous, with longitudinal wrinkles. Head with 2–3 soft hairs on frons, vertex glabrous, occiput with 6–12 stout white setae on either side. Anterior and posterior supraorbital setae two, rarely three on either side, 3–4 apical setae, scape glabrous. Third antennomere 1,11–1,22 × (mean 1,17) as long as fourth one, with 6–9 strong white setae, antennomere 4 with 2–4 setae. Labrum glabrous, transverse, 2,37–2,57 × (mean 2,45) as wide as long, unidentate, with 6–10 long submarginal setae (figs 1–5). Mandibles long, very slender (figs 12–14), 7,66–8,40 × (mean 7,95) and 7,0–7,33 × (mean 7,09) as long as wide in ♂ and ♀, respectively.

Pronotum. Finely wrinkled, transverse, 1,37–1,56 × (mean 1,44) as wide as long, with straight sides (figs 20–22), slightly convex on disc, dense pubescence along lateral margins. Coupling sulcus on the ♀ mesepisternum long, smoothly curved apically and basally (fig. 46).

Elytra. Broadening in apical third, 1,55–1,63 × (mean 1,59) and 1,44–1,54 × (mean 1,49) as long as wide in ♂ and ♀, respectively. Elytral disc finely granulated. Metatarsus 0,76–0,85 × (mean 0,81) as long as metatibia, metatrochanter with 2–6 white setae along anterior margin. Abdominal sternites with intense pubescence along lateral margins only.

Penis. 0,49–0,52 × (mean 0,50) as long as elytra, asymmetrical, well projecting in right half (figs 49–52), median lobe with retracted apex and wide symmetrical extended flanks (figs 64–66). Internal sac distinctly transverse in relation to medial lobe. Flag very small, shield of medium size, lower limitator large, medial tooth absent. VA and VLL large and stretched; DLL very small, strongly sclerotized; DDS medium-sized, membranous; VLR very large, rounded, distinctly protruding; VB small and rounded; BLR practically absent; B elongated, large, poorly projected to the left, with distinct additional apical portion; L poorly developed (figs 81–84).

Abdomen. Posterior margin of sternum 8 without setae in ♀, apex truncated, with two or three short stout setae, lateral margin with 6–9 long setae (figs 101–105). Tergite 9 oval, 1,75–1,94 × (mean 1,83) as long as wide, with 12–16 long setae apically. Tergite 10 rounded apically, mem-

branous and setose in apical third, with 16–20 long setae laterally (figs 89–93). Base of second gonapophysis with one long and 7–8 short setae, ventral notch on second gonocoxa practically straight, with 6–8 long setae. Very small additional sclerite present between second gonocoxae. Bursa copulatrix rounded, oviduct sclerite large.

Distribution. Western and south-western Mongolia: Bayan-Ulegeisk, Kobdor, Dzabkhan, Gobi-Altai and Bayan-Khongor Aimaks. Occurring between the Mongolian-Gobian Altai and the Khan-Khuuhei-Khangai mountain ranges along salty sand banks, rarely near fresh water lakes or ponds (fig. 121).

Taxonomic notes

Up to now, three subspecies of *C. maritima* were known (GEBERT 1996). It was considered, that the nominal subspecies occurs along the sea coasts of western, central and northern Europe (HORN & ROESCHKE 1891, MANDL 1936, JAGEMANN 1945, GEBERT 1996). *C. maritima kirgisisca* MANDL, 1936, lives in middle and southern Russia, Ukraine and Kazakhstan on the banks of large rivers (MANDL 1936, GEBERT 1996), while *C. maritima tshemalensis* GEBERT, 1996, occurs in south-western Siberia only (GEBERT 1996). A few taxonomic remarks on the latter subspecies together with a few on several other named forms of *C. maritima* are presented below.

Further synonyms of *Cicindela maritima* DEJEAN, 1822

Cicindela baltica MOTSCHULSKY, 1844

MOTSCHULSKY, 1844, Insectes de la Siberie, *Mém. Ac. Imp. Sci. St.-Petersbourg* 13: 37. Locus typicus: Livonia [Latvia].

Lectotype ♀ (here designated). "♀" [hand-written white label], "Livonia" [typeset red label], "*Cicindela baltica* mihi. Livonia" [hand-written white label], "= subsp. *maritima*. Dr. W. Horn det. 1926" [typeset except for hand-written first two lines and last numeral of data white label], "LECTOTYPUS. *Cicindela baltica* Motschulsky, 1844. design. A.V. Matalin, 1998" [typed and hand-written red label], "*Cicindela* (*s. str.*) *maritima maritima* Dej. det. A.V. Matalin, 1998" [typed and hand-written white label] (ZMM). – The lectotype (elytra only) measures 8,7 mm, it lacks head, prothorax, both fore-, right middle and hind legs, 3–6-th abdominal sternites and genitalia, with left elytra partly destroyed by dermestid larvae.

Paralectotypes. 3 ♂ 2 ♀, all labelled "PARALECTOTYPUS, *Cicindela baltica* Motschulsky, 1844. design. A.V. Matalin, 1998" [typed and hand-written red label] and "*Cicindela* (*s. str.*) *maritima maritima* Dej. det. A.V. Matalin, 1998" [typed and hand-written white label]: 1 ♂, (lacking 4–11th left and 3–11 right antennomeres, left foreleg; 3–6th abdominal sternites and genitalia) with labels: "♂" [hand-written white label] and "Livonia" [typeset red label]; 1 ♂, (without 3–11 left and 2–11 right antennomeres, left foreleg and both hind legs) with labels: "Riga" [hand-written white label] and "*baltica* Motsch. Riga" [hand-written white label]; 1 ♀, (lacking its head; prothorax, fore-, left middle and right hind legs, 5–6-th abdominal sternites and genitalia) with labels: "19" [hand-written white label], a triangular label without writing, red on one side and "Vilnius" [hand-written white label] (all in ZMM); 1 ♀, (lacking its hind tibiae and tarsus) with label: "Livonia" [typeset red label]; 1 ♂, (without left hind leg) with labels: "Lapp." [typeset white label] and "*baltica* Motsch. *maritima* Gyll." [hand-written white label] (both in ZISP).

The synonymy of *C. baltica* and *C. maritima* was already established by CHAUDOIR (1863). Neither MOTSCHULSKY (1844) nor any of the subsequent authors (CHAUDOIR 1863; HORN & ROESCHKE 1891; HORN 1905, 1915, 1930; MANDL 1936; RIVALIER 1950; GEBERT 1996) designated type specimens. Four specimens of *C. baltica* with the original labels of the author were found in VICTOR MOTSCHULSKY'S collection (ZMM). Moreover, two further specimens of *C. baltica* with similar labels were found in the collection of the Zoological Institute in St.-Petersburg (ZISP). All these specimens are considered syntypes of *C. baltica* and have therefore been designated as given above.

Cicindela maritima finmarkica MANDL, 1936

Cicindela maritima ab. *finmarkica* MUNSTER, 1924, *Norsk ent. Tidskr.* 1 (1923): 287. Locus typicus: Karasjok Finmarkiae, Norv. arct. *Cicindela maritima finmarkica* HORN, 1926, *Coleopterorum Catalogus* 86: 220. *Cicindela maritima finmarkica* MANDL, 1936, *Arb. morph. tax. Ent.* 3: 27.

This form was described from northern Norway as an aberration of *C. maritima*. Later, HORN (1926) considered it to be local form of *C. hybrida maritima*. MANDL (1936) regarded it a separate subspecies of *C. maritima*. The raising of rank by MANDL (1936) is of nomenclatoric significance because according to §§ 10.2, 23.3.4, 45.5, 45.6 and 50.3.1. of ICZN (2000) it made MANDL the author of the taxon. Nowadays this form is usually still regarded as an in-

dividual form, but technically it represents a synonym of *Cicindela maritima maritima* DEJEAN, 1822, only (WIESNER 1991, 1992). The authors mentioned above indicated that *C. maritima* ab. *finmarkica* was described in 1923. However, „Hefte 6“ of „Bind I“ of „Norsk Entomologisk Tidsskrift“ was in fact published on 20 October 1924. Therefore, in accordance with §§ 21.4 and 21.5. of ICZN (2000) the correct date of publication of this taxon is 1924.

Cicindela maritima* ab. *ilgaense
BARŠEVSKIS, 1993

Cicindela maritima ab. *ilgaense*, BARŠEVSKIS, 1992, *Austrumlatvijas vaboles* 1993: 58. Locus typicus: Latvia, Daugava river valley.

This form was described from the Daugava river valley, Latvia. It has brown elytra without a medial band at all, but with narrow, separated humeral and apical lunules and a short, very narrow, isolated

marginal band. This aberration lives together with the typical form in the same habitat and is very similar to *C. m. finmarkica*. These facts also support the synonymy of *C. m. maritima* and *C. m. finmarkica*.

Cicindela maritima tshemalensis
GEBERT, 1996 (syn. nov.)

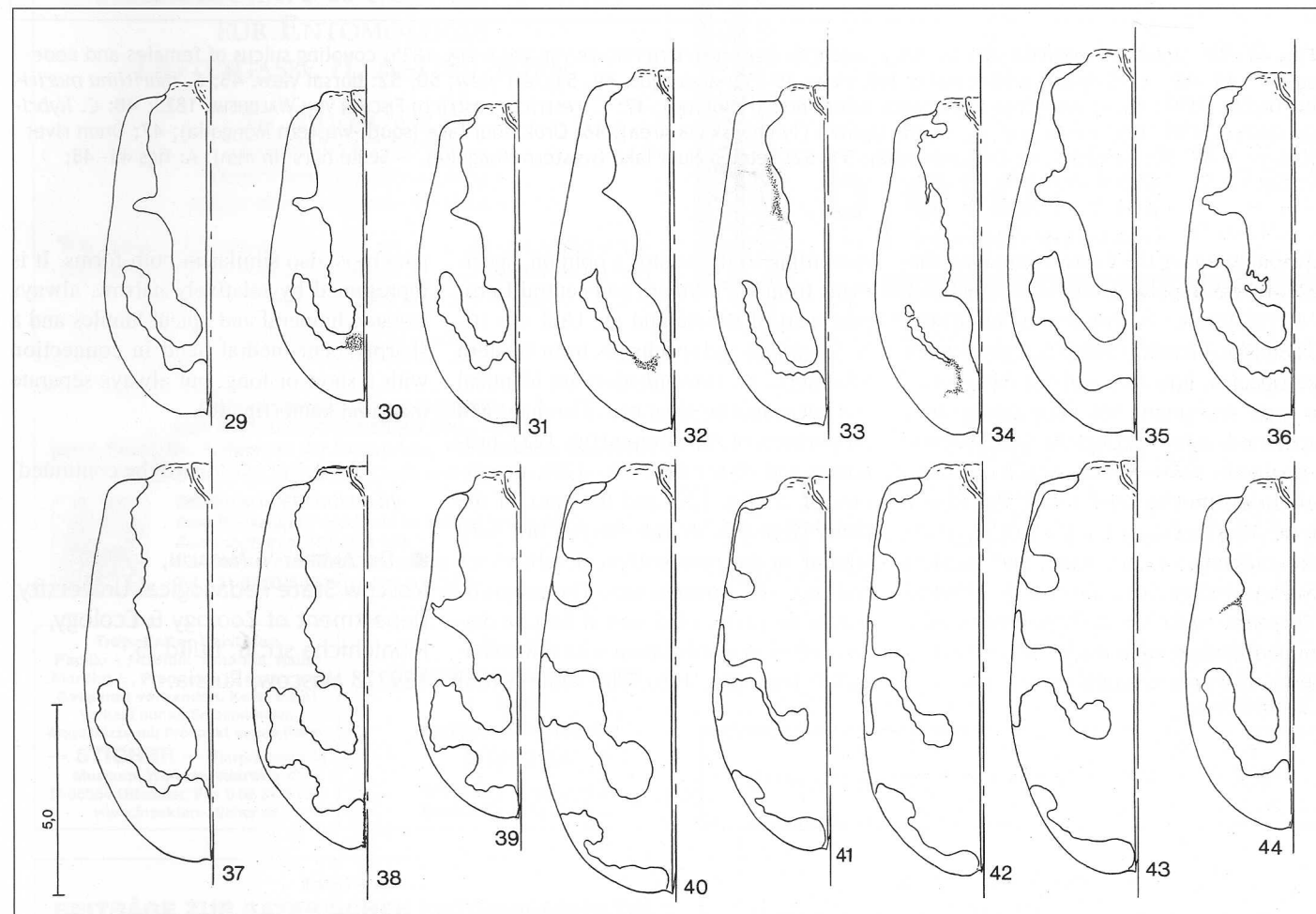
Cicindela maritima tshemalensis, Mitt. münch. ent Ges. 86 (1996): 23. Locus typicus: Anos, Altai.

Lectotype. ♂ (here designated). “Aimak Tshemal na Alta’ye. s. Anos. Na lev. ber. r. Katuni, v 3 km nishе Anosa, naprotiv Uzn’yezi. 25.VI.1930” [In Russian; hand-written white label], “ALTAI. Tshemal. pag. Anos. 25.VI.1930. F. v. Poschinger leg., Staatssl. München” [hand-written white label], “*Cicindela hybrida* L. ♂” [hand-written white label], “*Cicindela* (s. str.) *maritima tshemalensis* nom. nov. det. J. Gebert, 1995” [hand-written white label], „LECTOTYPUS. *Cicindela* (s. str.) *maritima tshemalensis* Gebert, 1996, design. A. V. Matalin, 1999 [typed and hand-written red label],

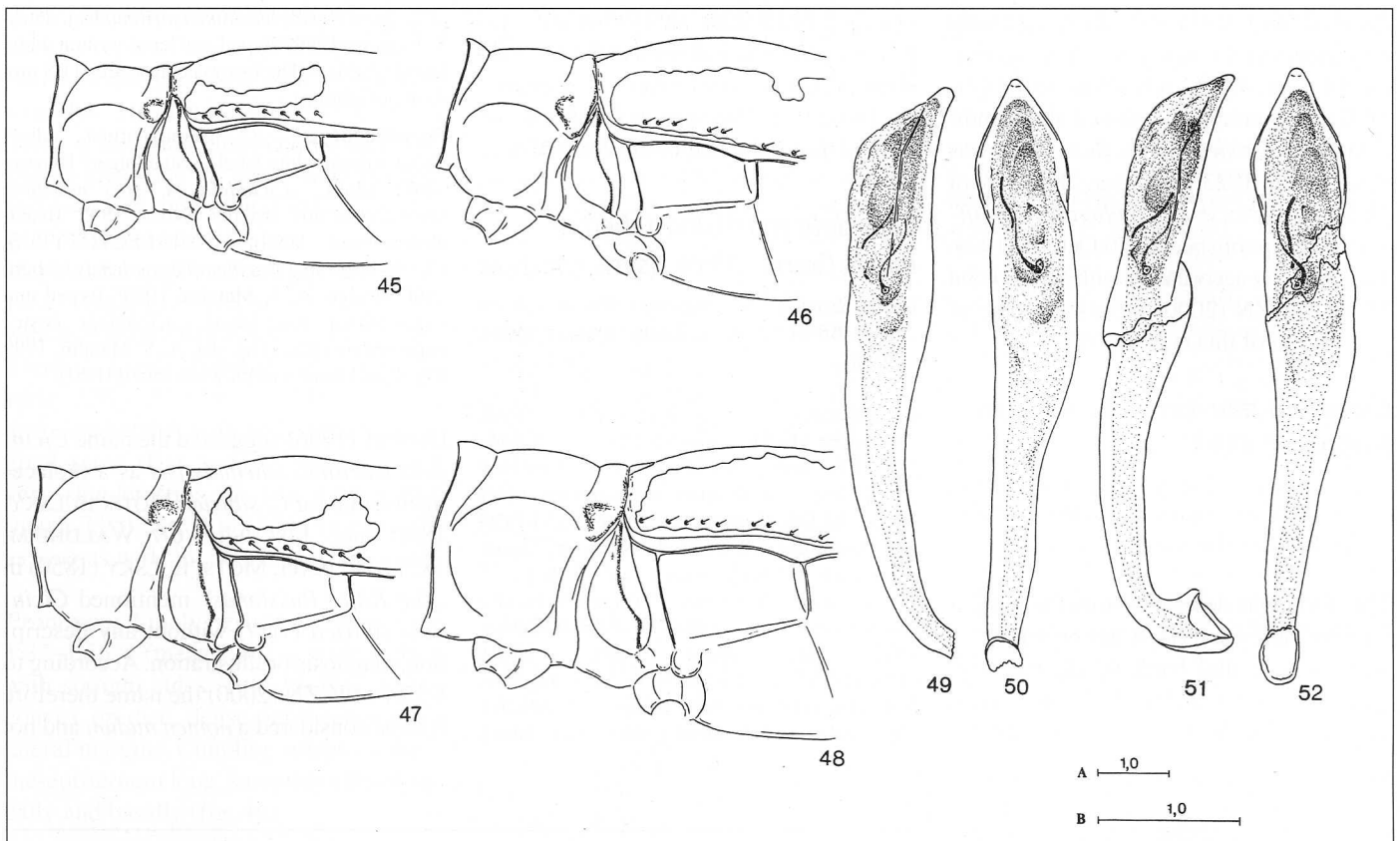
„*Cicindela* (s. str.) *maritima maritima* Dej. det. A. V. Matalin, 1999“ [typed and hand-written white label] (ZSM). – The lectotype measures 11.8 mm (without labrum).

Paralectotype. ♂; “Semipalatinsk. Altai” [hand-written white label], „Staudinger“ [typeset white label], „*Cicindela* (s. str.) *maritima tshemalensis* nov. ssp. det. Gebert, 1995“ [hand-written red label], „PARALECTOTYPUS. *Cicindela* (s. str.) *maritima tshemalensis* Gebert, 1996, design. A. V. Matalin, 1999“ [typed and hand-written red label], „*Cicindela* (s. str.) *maritima maritima* Dej. det. A. V. Matalin, 1999 [typed and hand-written white label] (DEI).

GEBERT (1996) suggested the name *Cicindela maritima tshemalensis* as a replacement name for *C. sibirica* MOTSCHULSKY, 1850 (nec FISCHER VON WALDHEIM, 1821). However, MOTSCHULSKY (1850) in „Die Käfer Russlands“ mentioned *Cicindela sibirica* (var?) without any description, diagnosis or illustration. According to § 12.1 of ICZN (2000) the name therefore is to be considered a *nomen nudum* and not



Figs 29–44. *Cicindela maritima* DEJEAN, 1822, and *Cicindela restricta* FISCHER VON WALDHEIM, 1825, left elytra. – 29–36: *C. maritima impercepta* subsp. nov.; 37: *C. hybrida reitteri* HORN, 1897 (Lectotype ♀); 38–39: *C. maritima kirgisisca* MANDL, 1936; 40: *C. maritima maritima* DEJEAN, 1822; 41–44: *C. restricta restricta* FISCHER VON WALDHEIM, 1825. – 29, 30: Orok Nuur lake (south-western Mongolia); 31–34: Zargalan (western Mongolia); 35, 36: Telmen Nuur lake (western Mongolia); 38: Samara (Russia); 39: Astrakhan’ (Russia); 40: Lipovka (Tyumenskaya Area); 41: Ingirma river (Krasnoyarskij Region); 42: Khandyga (Yakutiya); 43, 44: Onon river (Dauriya). – 29–32, 35, 37–43: females; 33, 34, 36, 44: males. 29: Holotype; 30–36: Paratypes. Scale bar in mm



Figs 45–52. *Cicindela maritima* DEJEAN, 1822, and *Cicindela restricta* FISCHER VON WALDHEIM, 1825, coupling sulcus of females and aedeagus. — 45–48: coupling sulcus of females, left view; 49–52: aedeagus. 49, 51: left view; 50, 52: dorsal view. 45: *C. maritima maritima* DEJEAN, 1822; 46: *C. maritima impercepta* subsp. nov. (Holotype); 47: *C. restricta restricta* FISCHER VON WALDHEIM, 1825; 48: *C. hybrida reitteri* HORN, 1897 (lectotype ♀). — 45: Lipovka (Tyumenskaya Area); 46: Orok Nuur lake (south-western Mongolia); 47: Onon river (Dauriya); 49, 50: Zargalan (western Mongolia); 51, 52: Telmen Nuur lake (western Mongolia). — Scale bars (in mm): A: figs 45–48; B: figs 49–52.

available under the Code. Moreover, there are no specimens of *C. sibirica* in MOTSCHULSKY'S collection in ZMM. Therefore, GEBERT (1996) described a new subspecies, however without designating a type specimen, but mentioning three specimens which he had studied. The third specimen from Kosch-Agach was excluded from the type series, because it refers to *C. altaica* ESCHSCHOLTZ, 1829, an endemic of the Altai and western Sayan mountains (MATALIN 1999a). Therefore, only the two specimens mentioned above have been designated as lecto- and paralectotype respectively.

According to the author's opinion, specimens from the northern and central European part of Russia and the Ural mts (*C. m. maritima*) and specimens from Western Siberia (*C. m. tshemalensis*) are identical and not cannot be separated. The shape and proportions of the labrum (fig. 128), pronotum and elytra (figs 126–127), mandibles of ♂ (fig. 129) and the apex of the penis (figs 53–56 and 60–63) are very similar in the nominotypical subspecies and in *C. m. tshemalensis*. The proportions of the elytra of ♀ can at best be distinguished in combination with other characters only (fig. 126). The white elytral

pattern is also similar in both forms. It is represented by relatively narrow, always isolated humeral and apical lunules and a sharply bent medial band in connection with a short or long, but always separate marginal band (fig. 40).

(to be continued)

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The taxonomic status of *Cicindela (Cicindela) reitteri* HORN, 1897, with some remarks about the subspecies and forms of *Cicindela (Cicindela) maritima* DEJEAN, 1822 (Coleoptera: Carabidae, Cicindelinae) – Teil 2

● ANDREY V. MATALIN

Abstract. After a study of type specimens and of additional material the taxonomic status of *Cicindela hybrida reitteri* HORN, 1897, is discussed. This taxon represents a colour form of *Cicindela restricta* FISCHER VON WALDHEIM, 1825, only. Therefore, the following synonymy is established: *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897. A lectotype has been designated for *C. hybrida reitteri* HORN, 1897 (DEI). – Populations occurring in western and south-western Mongolia between the Mongolian-Gobian Altai and Khan-Khukhei-Khangai mountain ranges, usually determined as *C. reitteri*, are described as *Cicindela maritima impercepta* subsp. nov. Further taxonomic notes are given on the subspecies of *Cicindela maritima* DEJEAN, 1822. Lectotypes are designated for *Cicindela baltica* MOTSCHULSKY, 1844 (ZMM and ZISP), and *Cicindela maritima tshemalensis* GEBERT, 1996 (ZSM and DEI). The following new synonymies are established: *Cicindela maritima tshemalensis* GEBERT, 1996 = *Cicindela maritima maritima* DEJEAN, 1822. It is shown, that ab. *pseudomaritima* LENGERKEN, 1912, refers to *C. maritima* DEJEAN, 1822, and not to *C. restricta*, while ab. *muelensis* GOMES, 1943, and ab. *imperfecta* GOMES, 1943, refer to *C. lusitanica lusitanica* MANDL, 1935, and not to *C. maritima*. Data on the geographic distribution, a synonymic list, a list of the named aberrations and a key for the subspecies of *C. maritima* are provided.

Key words. *Cicindela*, 'hybrida'-species group, 'maritima'-species group, type material, new synonymy, new subspecies, identify key.

Zusammenfassung. Anhand von Typen- und weiterem Material wird der taxonomische Status von *Cicindela hybrida reitteri* HORN, 1897, diskutiert. Es wird gezeigt, dass es sich dabei nur um eine Farbvariante von *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897, handelt. Dementsprechend wird folgende neue Synonymie aufgestellt: *Cicindela restricta* FISCHER VON WALDHEIM, 1825 = *Cicindela hybrida reitteri* HORN, 1897. Für letztere wird ein Lectotypus designiert (DEI). – Populationen aus der West- und Südwest-Mongolei aus dem Gebiet zwischen dem Mongolischen Gobi-Altai und den Khan-Khukhei-Khangai-Bergen, die zumeist als *C. reitteri* determiniert wurden, werden als *Cicindela maritima impercepta* subsp. nov. beschrieben. Es werden einige taxonomische Bemerkungen zu den Subspezies von *Cicindela maritima* DEJEAN, 1822, gemacht. Lectotypen werden für *Cicindela baltica* MOTSCHULSKY, 1844 (ZMM und ZISP), und für *Cicindela maritima tshemalensis* GEBERT, 1996 (ZSM und DEI) festgelegt. Folgende neue Synonymien werden erkannt: *Cicindela maritima tshemalensis* GEBERT, 1996 = *Cicindela maritima maritima* DEJEAN, 1822. Es wird ferner gezeigt, dass ab. *pseudomaritima* LENGERKEN, 1912, zu *C. maritima* DEJEAN, 1822, und nicht zu *C. restricta* zu stellen ist, während ab. *muelensis* GOMES, 1943, und ab. *imperfecta* GOMES, 1943, zu *C. lusitanica lusitanica* MANDL, 1935, und nicht zu *C. maritima* gehören. Darüber hinaus werden taxonomische Bemerkungen über die Unterarten und Formen von *Cicindela maritima maritima* DEJEAN, 1822, gemacht.

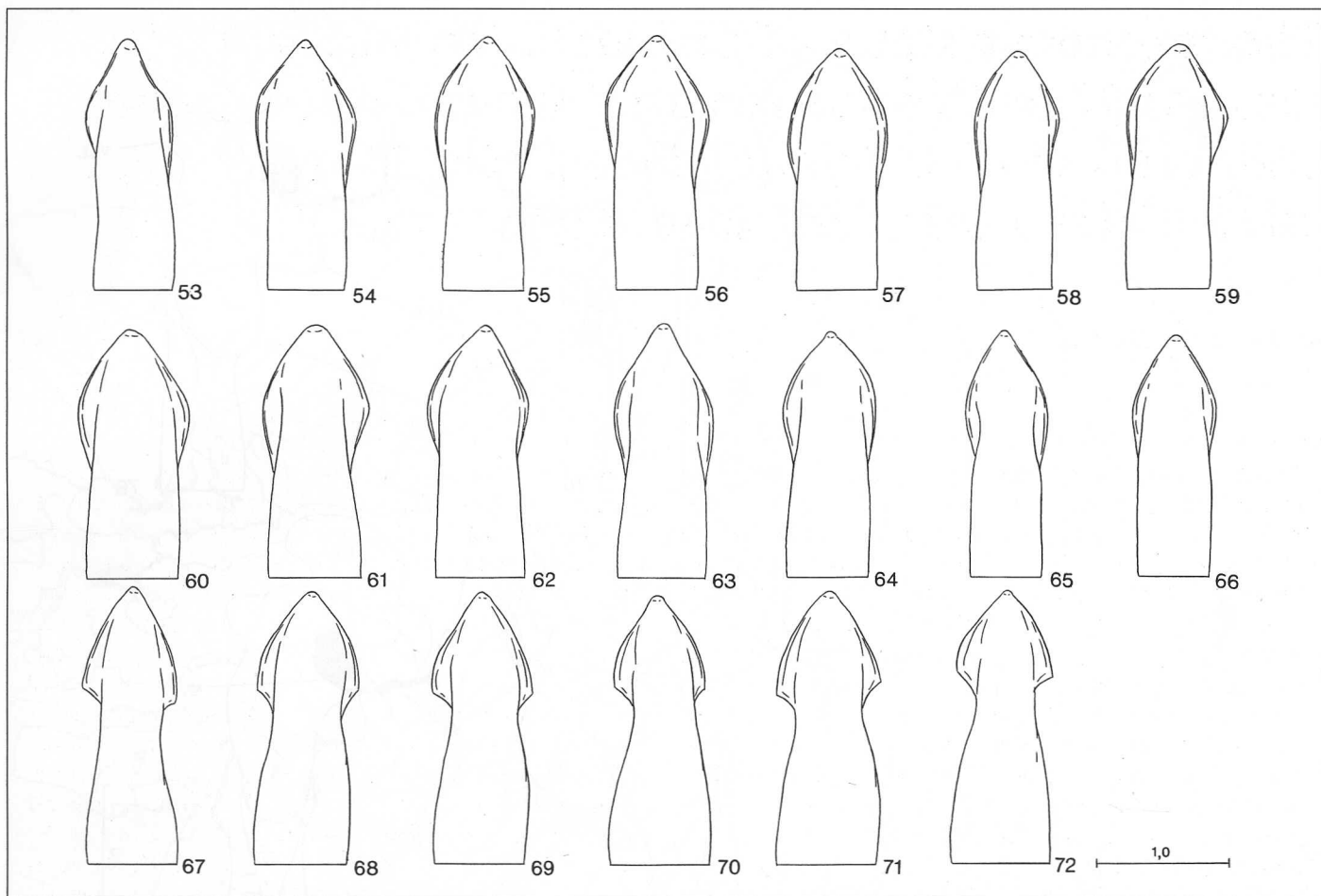
Biogeographical remarks

It is to be noted, that the aberration *pseudomaritima* LENGERKEN, 1912, refers to *C. m. maritima*, and not to *C. r. restricta*, as assumed by WIESNER (1992). Thus, all previous data on the distribution of *C. restricta* in the north European part of Russia (JAKOBSON 1905–1916, JAGEMANN 1945) refer in fact to *C. m. maritima*. There are two forms, "muelensis" and "imperfecta", described by GOMES (1943) as aberrations of *C. maritima* from Portugal. However, *C. maritima* does not occur in Portugal and these forms refer to *Cicindela lusitanica lusitanica* MANDL, 1935.

Some previous authors (HORN 1930, SEABRA 1941, ALVES 1943) have determined specimens of *C. lusitanica* as *C. maritima* (MATALIN 1998).

Moreover, new data on the distribution of *C. m. maritima* have been presented from northern and central Russia (MATALIN 1999c). This subspecies occurs from northern and central Europe, including the Baltic states, northern and western Belarus, northern and middle part of European Russia, sometimes even north of the polar circle (Komi Republic), through northern and central Ural to western Siberia, some-

times slightly south of the polar circle (Nadym and Polui river), and north-eastern Kazakhstan. The beetles are found on sand banks and dunes along sea coasts and (not only large!) river banks. The Yenisei river should be considered as the eastern natural barrier between *C. maritima* and the related *C. restricta* (MATALIN 1999a, c). A single locality has been recorded far from the continuous range of the nominotypical subspecies – Udbina, Croatia (CSIKI 1946). Because of its narrow, separated white elytral pattern and the moderately, but distinctly bent medial band I consider these specimens to be within within the



Figs 53–72. *Cicindela maritima* DEJEAN, 1822, and *Cicindela restricta* FISCHER VON WALDHEIM, 1825, apex of penis, dorsal view. — 53–56, 60–63: *C. maritima maritima* DEJEAN, 1822; 57–59: *C. maritima kirgisica* MANDL, 1936; 64–66: *C. maritima impercepta* subsp. nov. (Paratypes); 67–72: *C. restricta restricta* FISCHER VON WALDHEIM, 1825. — 53: Gallia; 54: Ilga river (Lithuania); 55: Turovo (Byelerussia); 56: Verkhnyaya Bystritscha (Kirovskaya Area); 57: Kiev; 58: Novotsherkassk (Rostovskaya Area); 59: Dosang (Astrakhanskaya Area); 60: Ul'binskoe (Altai); 61: Nefteugansk (Tyumenskaya Area); 62: Ratta (Tyumenskaya Area); 63: Mirnoe, Enisei river (Krasnoyarskij Region); 64–66: Zargalan (western Mongolia); 67: Malye Ury (Western Sayan); 68: Ingirma river (Krasnoyarskij Region); 69: Orlik (Buryatiya); 70: Khandyga (Yakutiya); 71: Khamar-Daban Mountain Range; 72: Onon river (Dauriya). — Scale bar in mm.

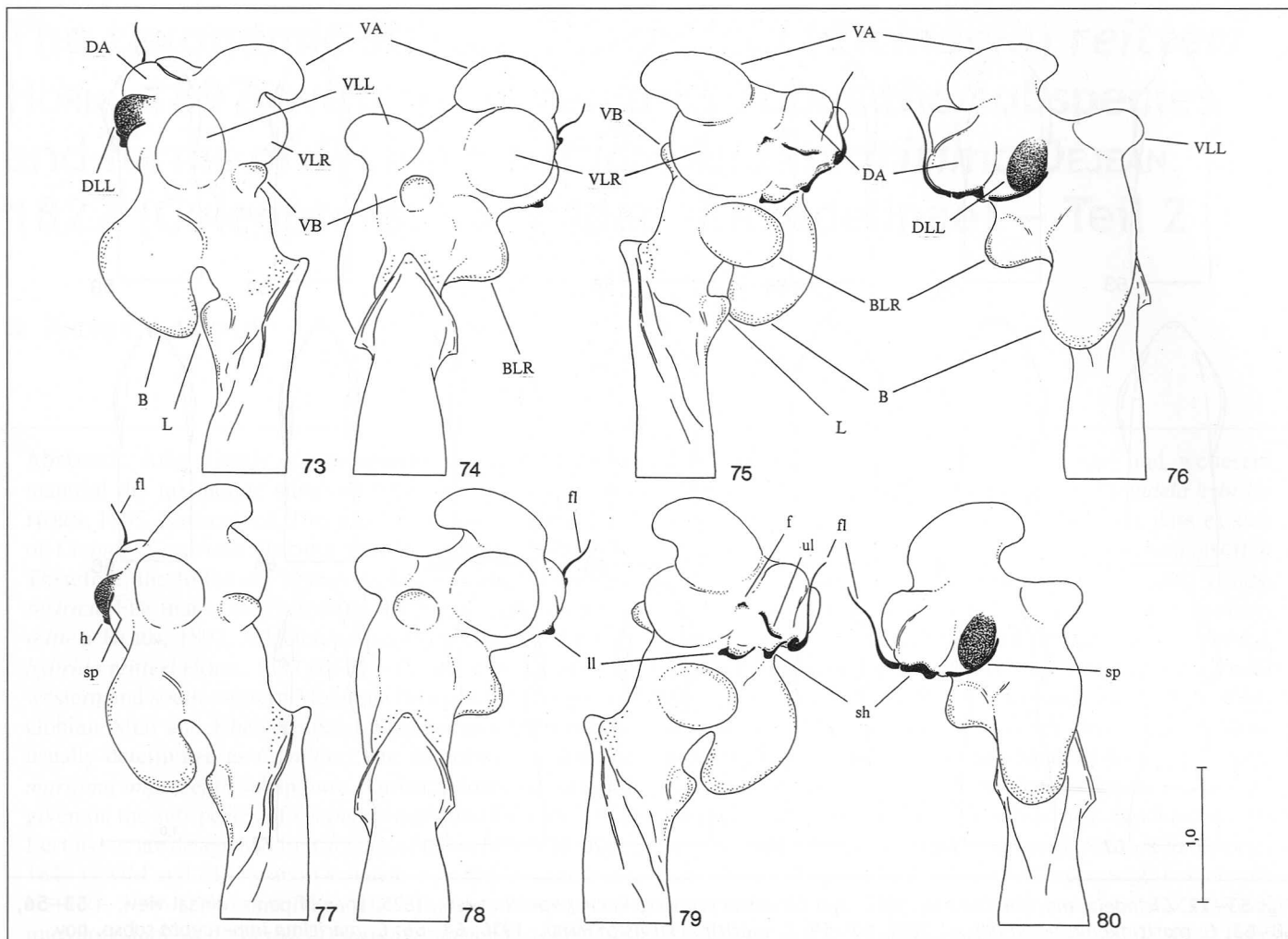
range of variation of the nominal subspecies. Thus, the range of the nominotypical subspecies comprises the European and western Siberian forest zone (to the Yenisei river in the east) (fig. 121).

C. maritima kirgisica MANDL, 1936, is well distinguished from the nominotypical subspecies by the shape and proportion of the labrum (figs 7–8, 128), pronotum (figs 24–25, 126–127), elytra (figs 38–39, 126–127), mandibles (fig. 129) and the apex of the aedeagus (figs 57–59). Its white elytral pattern is more broad, often partly (fig. 39) or fully linked along the lateral margin of the elytra (fig. 38). This subspecies occurs in Moldova (NECULISEANU & MATALIN 2000), Ukraine, south-eastern Belarus, southern Russia, Caucasus (Dagestan and Abkhazia) and north-western Kazakhstan. The transition zone between the nominate subspecies and *C. m. kirgisica* includes southern Belarus, northern

Ukraine, the Bryanskaya, Kaluzhskaya, Orlovskaya, Tul'skaya, Ryazanskaya, Lipetskaya, Tambovskaya, Pensenskaya, Ulyanovskaya, Samarskaya, Orenburgskaya and Kurganskaya areas of Russia as well as the Kustanaiskaya, North-Kazakhstanskaya and Kokchetavskaya areas of Kazakhstan. Thus, the range of *C. m. kirgisica* comprises the European forest-steppe and steppe zones and, to some extent, the western Asiatic semi-desert zone (fig. 121).

If compared with the other known subspecies, *C. maritima impercepta* subsp. nov. has the pronotum more transverse (figs 20–22, 126–127), more slender mandibles (figs 12–14, 129), the elytra distinctly broadening in the apical third (figs 126–127) with a very wide, white coupling elytral pattern (figs 29–36), a more accurate apex of the penis (figs 64–66) and a more narrow syntergum 9/10 of the ♀ (figs 89–93). This subspecies occurs in western and south-

western Mongolia only (fig. 121). There is no transition zone between the two European-Asiatic subspecies and *C. maritima impercepta* subsp. nov. Of the related species, *C. restricta* is found in northern Mongolia, the Tuva Republic and in eastern Siberia. *Cicindela altaica* ESCHSCHOLTZ, 1829, occurs in the Altai and Western Sayan mountains only (MATALIN 1999a). The last species of the '*maritima*'-group, *Cicindela resplendens* DOKHTOUROFF, 1888, occurs in Ordos (China) only (MATALIN 2000). This species has a very broad, fully coupling white elytral pattern (figs 111–113), narrow, slender mandibles (fig. 114), a distinct hind tibia/tarsus ratio, the apex of the penis with small, though distinct lateral flanks, the configuration of the internal sac of the aedeagus lacking a medial tooth (figs. 115–118) and the character shape and pubescence of sternite 8 as well as the syntergum 9/10 as in figs 119,120.



Figs 73–80. *Cicindela restricta restricta* FISCHER VON WALDHEIM, 1925. Internal sac of aedeagus. – 73, 77: left view, 74, 78: dorsal view; 75, 79: right view; 76, 80: ventral view. VA: ventro-apical, VLL: ventro-lateral left, VLR: ventro-lateral right, DA: dorso-apical, DLL: dorso-lateral left, B: basal, BLR: basi-lateral right, VB: ventro-basal, DDS: dorsal drop-shaped bladders, L: ligula, sh: shield, sp: spring, ul: upper limitator, ll: lower limitator, f: flag, fl: flagellum. – 73–76: Onon river (Dauriya); 77–80: Ingirma river (Krasnoyarskij Region). – Scale bar in mm

Intraspecific variation and synonymy of *Cicindela (Cicindela) maritima* DEJEAN, 1822

- 1. subsp. *maritima* DEJEAN, 1822: 52 [Type locality: Pas-de-Calais]
 - = *baltica* MOTSCHULSKY, 1844: 37 [Type locality: Livonia]
 - = *finmarkica* HORN, 1926: 287 [Type locality: Karasjok]
 - = *hybrida* STEPHENS, 1828: 8 (pre-occupied by LINNAEUS, 1758)
 - = *sibirica* MOTSCHULSKY, 1850: 1 (preoccupied by FISCHER VON WALDHEIM, 1821) (nomen nudum)
 - = *tshemalensis* GEBERT, 1996: 23 [Type locality: Anos], (**syn. nov.**)

- ab. *abbreviata* BEUTHIN, 1893: 138 [Type locality: Swinemünde]
- ab. *azureus* GRAVESTEIN, 1948: 260 [Type locality: Texel Isl.]

- ab. *copulata* BEUTHIN, 1893: 138 [Type locality: Swinemünde]
- ab. *ilgaense* BAR EVSKIS, 1993: 58 [Type locality: Ilgas]
- ab. *intermedia* LENGERKEN, 1909: 187 [Type locality: Deutschland]
- ab. *obscura* SCHILSKY, 1888: 179 [Type locality: Rügen Isl.]
- ab. *pseudomaritima* LENGERKEN, 1912: 24 [Type locality: Oisterwijk]
- ab. *virescens* EVERTS, 1920: 207 [Type locality: Nederlandsche]

- 2. subsp. *kirgistica* MANDL, 1936: 28 [Type locality: Mittel- und Südrussland]

- ab. *circumflexa* BEUTHIN, 1893: 139 [Type locality: Südrussland]
- ab. *semihumeralis* BEUTHIN, 1893: 138 [Type locality: Südrussland]

- 3. subsp. *impercepta* subsp. nov. [Type locality: Orok-Nuur lake]

Key for the subspecies of *Cicindela (Cicindela) maritima* DEJEAN, 1822, and related taxa

- 1(2) Metatarsus slightly shorter, of equal length or, sometimes, slightly longer than metatibia (0,9–1,05 ×). Mandibles stocky in ♂, not more than 6,0–6,5 × longer than wide. Apex of penis without or with very poor extended flanks. Internal sac with distinct medial tooth „*hybrida*“-group
- 2(1) Metatarsus distinctly shorter than metatibia (0,65–0,85 ×). Mandibles slender in ♂, not less than 6,5 × longer than wide. Apex of penis with distinct, extended flanks. Internal sac without medial tooth „*maritima*“-group (3)



* - *Cicindela respiciens* Dokht.

◻ - *Cicindela restricta* F.-W.

◊ - *Cicindela altaica altaica* Eschsch.

◊ - *Cicindela altaica koschogachensis* Matalin

○ - *Cicindela maritima maritima* Dej.

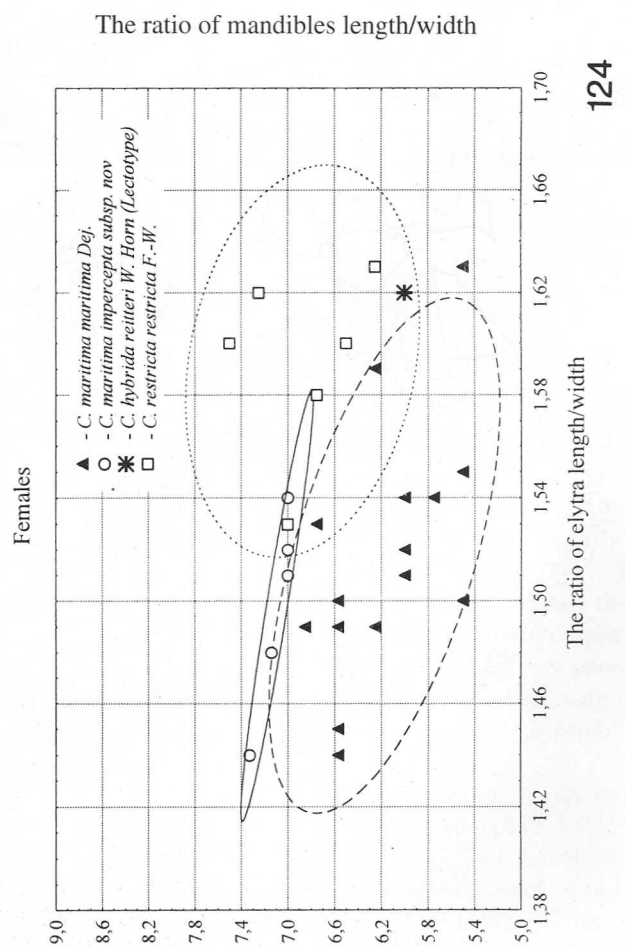
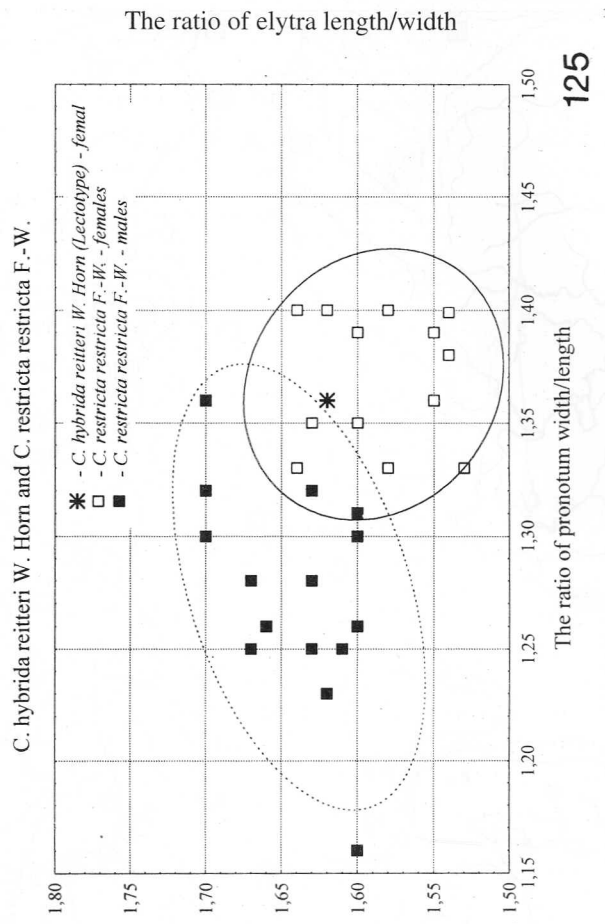
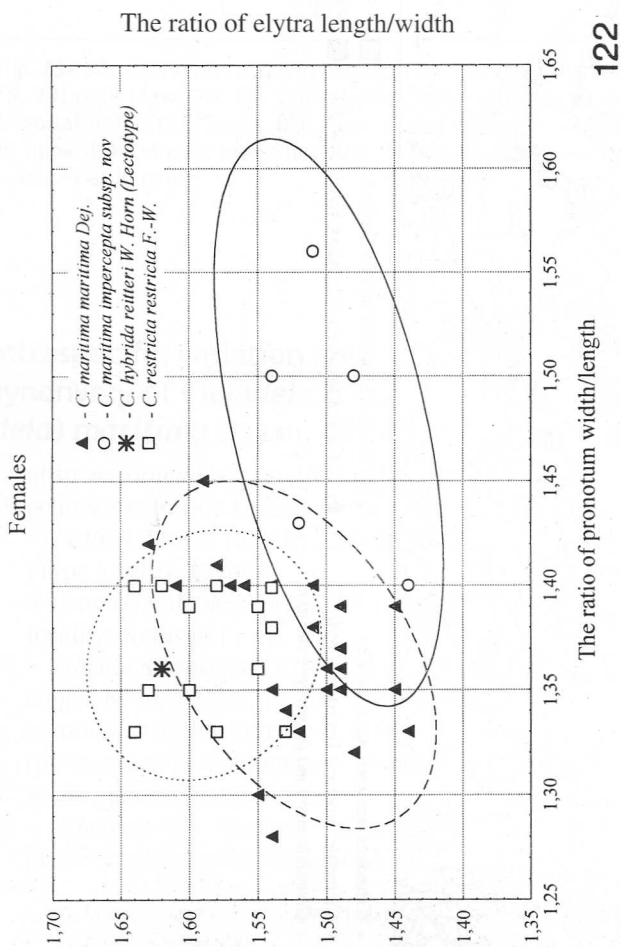
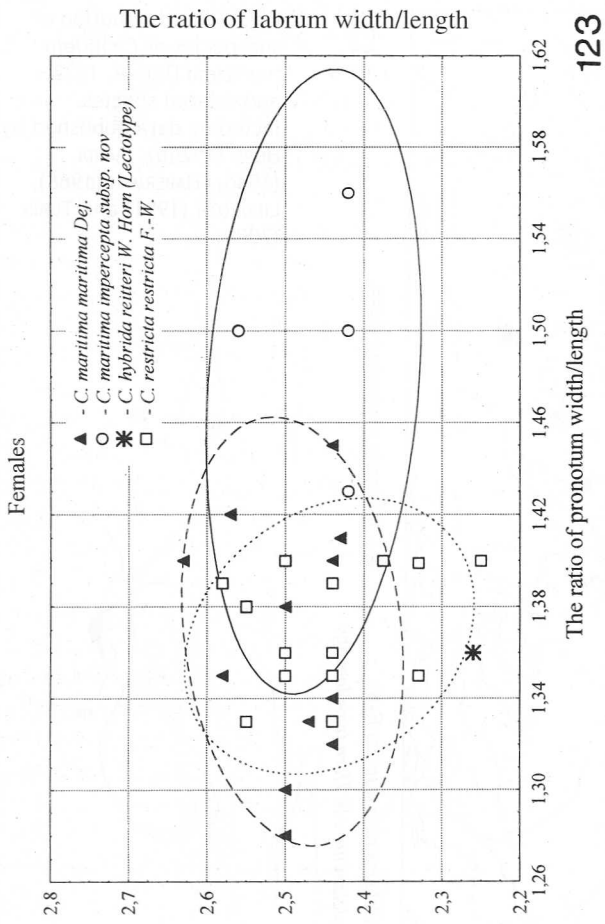
◐ - *Cicindela maritima kirgistica* Mandl

● - *Cicindela maritima impercepta* subsp. nov.

◻ - *Cicindela reitteri* W. Horn (type locality)

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Fig. 121. Distribution of subspecies of *Cicindela maritima* DEJEAN, 1822, and related species, including data published by HORN (1926b), MANDL (1936), HABERMAN (1968), LINDROTH (1991) and TURIN (2000).



Figs 122–125. Morphological measurements of *Cicindela maritima* DEJEAN, 1822, *Cicindela restricta* FISCHER VON WALDHEIM, 1825, and *Cicindela hybrida reitteri* HORN, 1897.

3(4) Body bicolorous dorsally, head and pronotum metallic green, elytra metallic purple or cupreous, sometimes with light greenish lustre. White elytral pattern very broad, lunules and bands always linked (figs 111–113). Elytra with very smooth sculpture, glossy. Occiput glabrous. Pronotum with rounded lateral margins. Apex of penis narrow, lanceolate, with very thin lateral flanks (figs 115–118). Posterior margin of sternum 8 of ♀ with three setae (fig. 120). Ordos (China). *C. (C.) resplendens* DOKHTOUROF, 1888

4(3) Body top unicolorous, bronze, cupreous-bronze or cupreous-green, sometimes black throughout. White elytral pattern narrow, lunules and bands usually isolated, sometimes confluent. Elytra with distinct granulate sculpture. Occiput setose. Pronotum with straight lateral margin. Apex of penis with distinct extended lateral flanks. Posterior margin of sternum 8

in ♂ without setae or with a single one only (figs 101–110) 5

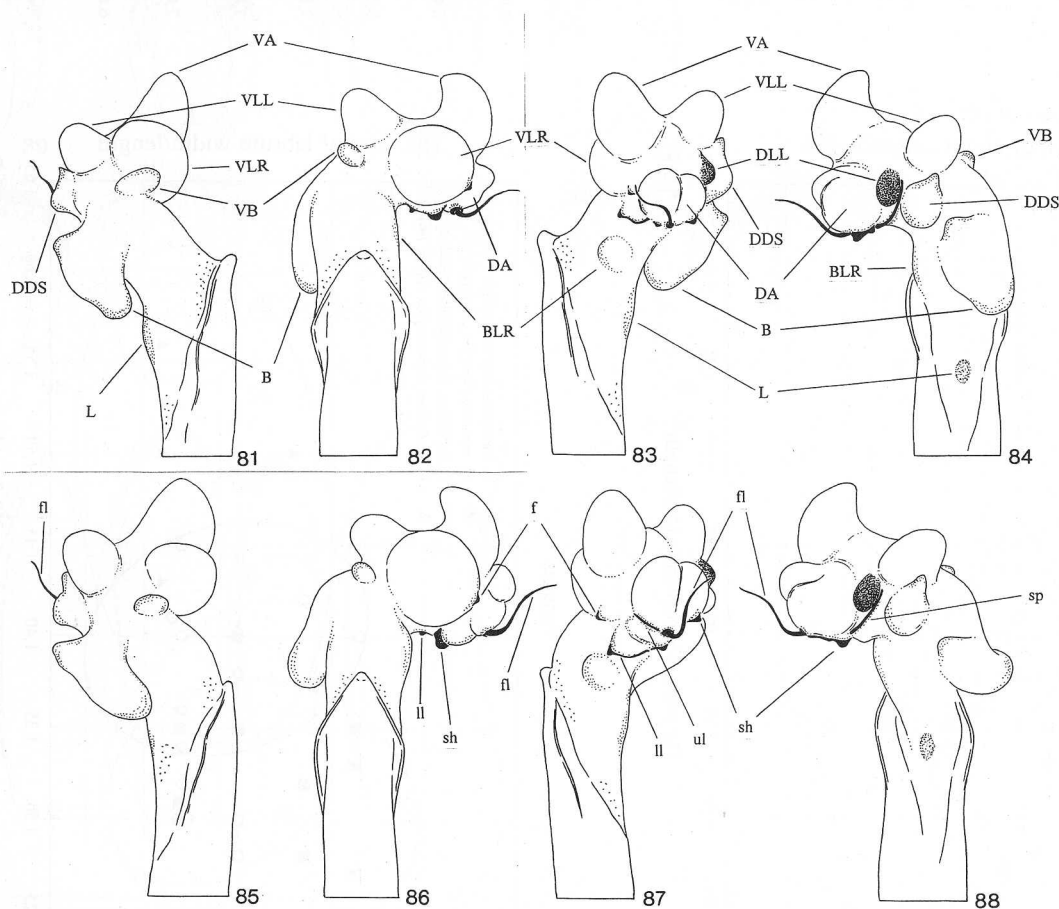
5(6) Elytra with coarse, granulate sculpture. Occiput sparse setose, with short transversal row of stout white setae. Apex of penis sharply spear-shaped, with short extended lateral flanks (figs 67–72) 7

(5) Elytra with tender-granulate sculpture. Occiput densely setose, with numerous stout white setae. Apex of penis lanceolate, with long, broadly extended lateral flanks (figs 53–66). *C. (C.) maritima* DEJEAN, 1822 (a)

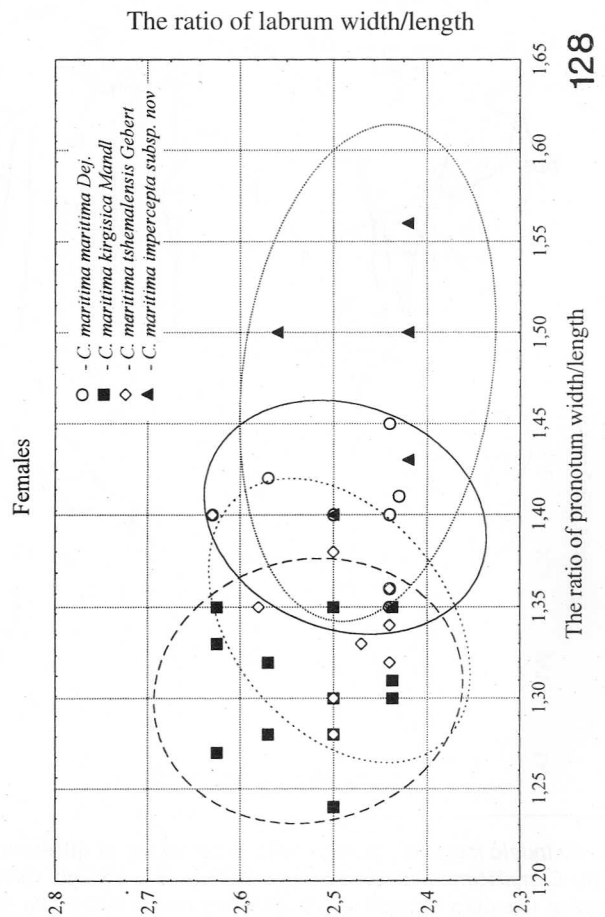
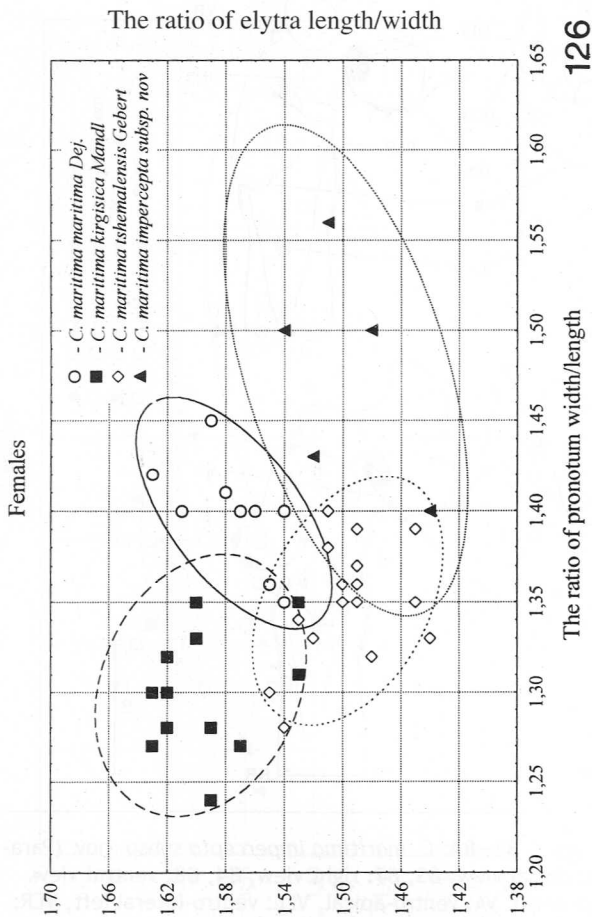
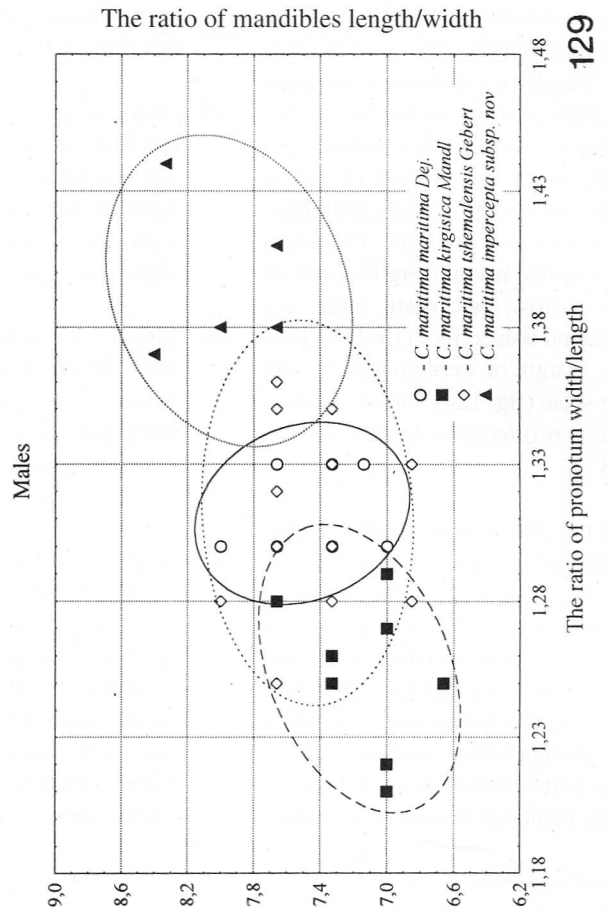
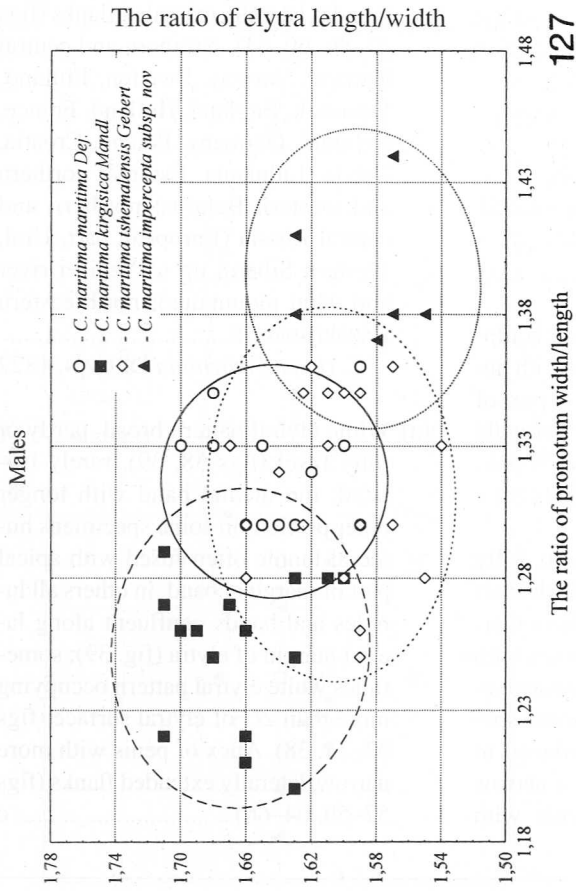
a(b) White elytral pattern narrow, fully separated; the medial band with short inner portion and often without marginal band (fig. 40), sometimes with short, rarely with long, but always separated marginal band; in some specimens the medial band reduced to form a small lateral dot or a narrow lateral stripe. Apex of penis with

broader laterally extended flanks (figs 53–56, 60–63). Northern and central Europe: Norway, Sweden, Finland, Denmark, England, Holland, France, Belgium, Germany, Poland, Croatia, Latvia, Lithuania, Estonia; northern and western Belarus; northern and central Russia (European part, Ural, Western Siberia up to Yenisei river and Altai mountains); north-eastern Kazakhstan
.. *C. (C.) m. maritima* DEJEAN, 1822

b(a) White elytral pattern broad, partly or fully fusel (figs 38, 39), rarely isolated; the medial band with longer inner portion; in some specimens humeral lunule often fused with apical part of marginal band, in others all lunules and bands confluent along lateral margin of elytra (fig. 39); sometimes white elytral pattern occupying more than 2/3 of elytral surface (figs 32–34, 38). Apex of penis with more narrow, laterally extended flanks (figs 57–59, 64–66) c



Figs 81–88. *Cicindela maritima* DEJEAN, 1822. Internal sac of different subspecies. – 81–84: *C. maritima impercepta* subsp. nov. (Paratype); 85–88: *C. maritima maritima* DEJEAN, 1822. – 81, 85: left view; 82, 86: dorsal view; 83, 87: right view; 84, 88: ventral view. 81–84: Zargalan (western Mongolia); 85–88: Verkhnyaya Bystritscha (Kirovskaya Area). VA: ventro-apical, VLL: ventro-lateral left, VLR: ventro-lateral right, DA: dorso-apical, DLL: dorso-lateral left, B: basal, BLR: basi-lateral right, VB: ventro-basal, DDS: dorsal drop-shaped bladders, L: ligula, sh: shield, sp: spring, ul: upper limiter, ll: lower limiter, f: flag, fl: flagellum. – Scale bar in mm.



Figs 126–129. Morphological data of the subspecies of *Cicindela maritima* DEJEAN, 1822.

c(d) White elytral pattern narrower, lunules and bands sometimes fully isolated, inner part of medial band never fused with apical lunule (figs 38, 39). Labrum with 7–12 (10) submarginal setae (figs 7, 8); frons dense, pubescent, with 6–10 (8) long, soft white hairs. Pronotum narrower – W/L 1,2–1,3 (1,25) in ♂ and 1,25–1,35 (1,30) in ♀. Elytra longer and narrower – L/W 1,60–1,71 (1,66) in ♂ and 1,53–1,63 (1,59) in ♀. Mandibles of more stocky – L/W 6,66–7,66 (7,16). Moldova, south-eastern Belarus, Ukraine, southern Russia, Caucasus, north-western Kazakhstan ... *C. (C.) m. kirgisisca* MANDL, 1935

d(c) White elytral pattern broader, lunules and bands always confluent along lateral margin (figs 29–36), inner part of medial band often fused with api-

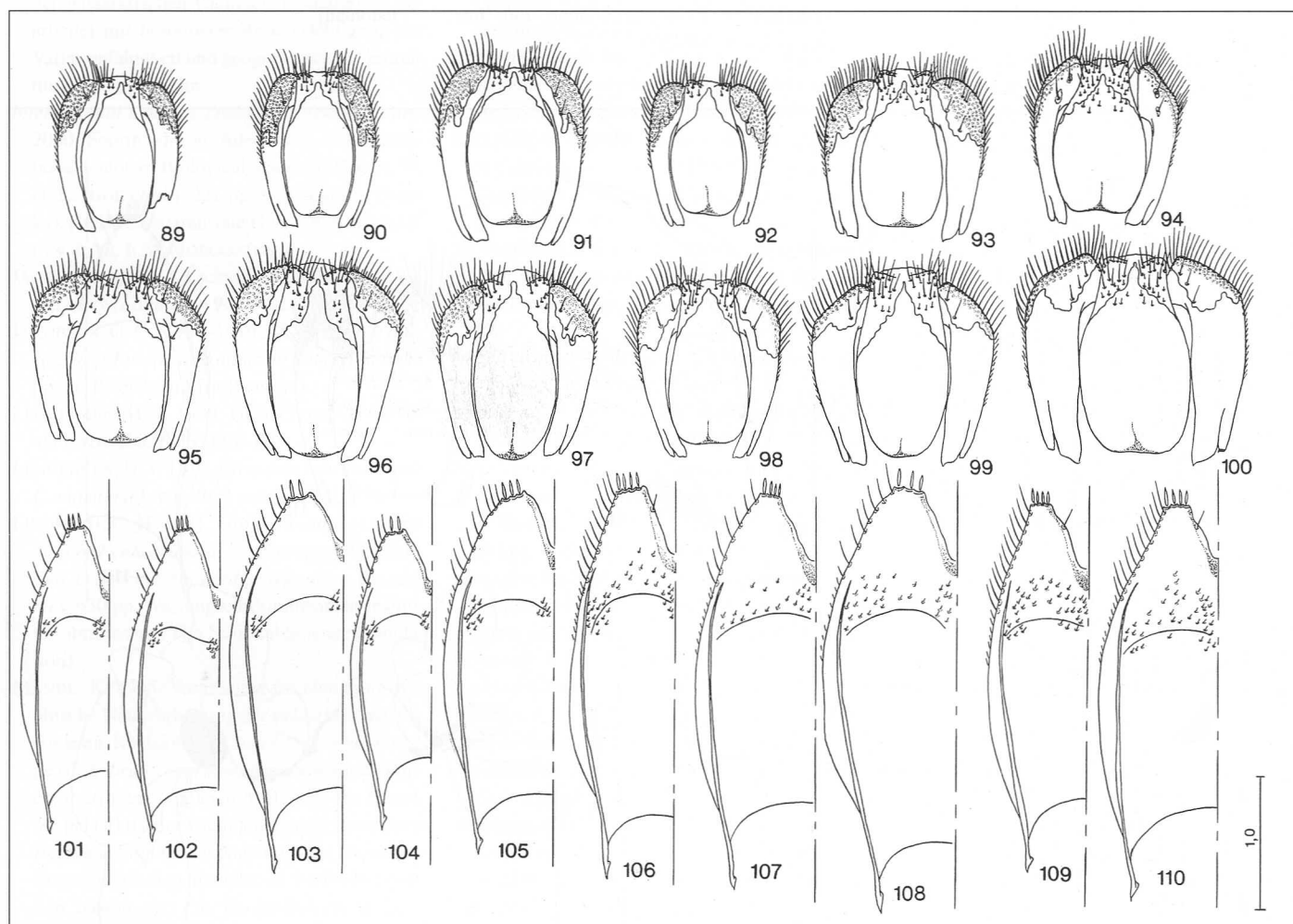
cal lunule (figs 30, 32, 34). Labrum with 6–10 (8) submarginal setae (figs 1–5); frons sparse pubescent, with 2–4 (3) long, soft white hairs. Pronotum broader – W/L 1,37–1,44 (1,39) in ♂ and 1,40–1,56 (1,48) in ♀. Elytra shorter and broader – L/W 1,55–1,63 (1,59) in ♂ and 1,44–1,54 (1,49) in ♀. Mandibles of ♂ more slender – L/W 7,66–8,40 (7,95). Western and south-western Mongolia
... *C. (C.) m. impercepta* subsp. nov.

7(8) White elytral pattern narrower. Apex of penis symmetrical spear-shaped. Inner sac longitudinal, B deposited along aedeagus, without apical portion; DDS absent (figs 73–80). Eastern Siberia, Far East of Russia, northern Mongolia, eastern China ...
C. (C.) restricta FISCHER VON WALDHEIM, 1825

8(7) White elytral pattern broader. Apex of penis asymmetrical, spear-shaped. Inner sac transversal, B deposited on left side of aedeagus, with distinct apical portion; DDS present. Altai and Western Sayan mountains. *C. (C.) altaica* ESCHSCHOLTZ, 1829

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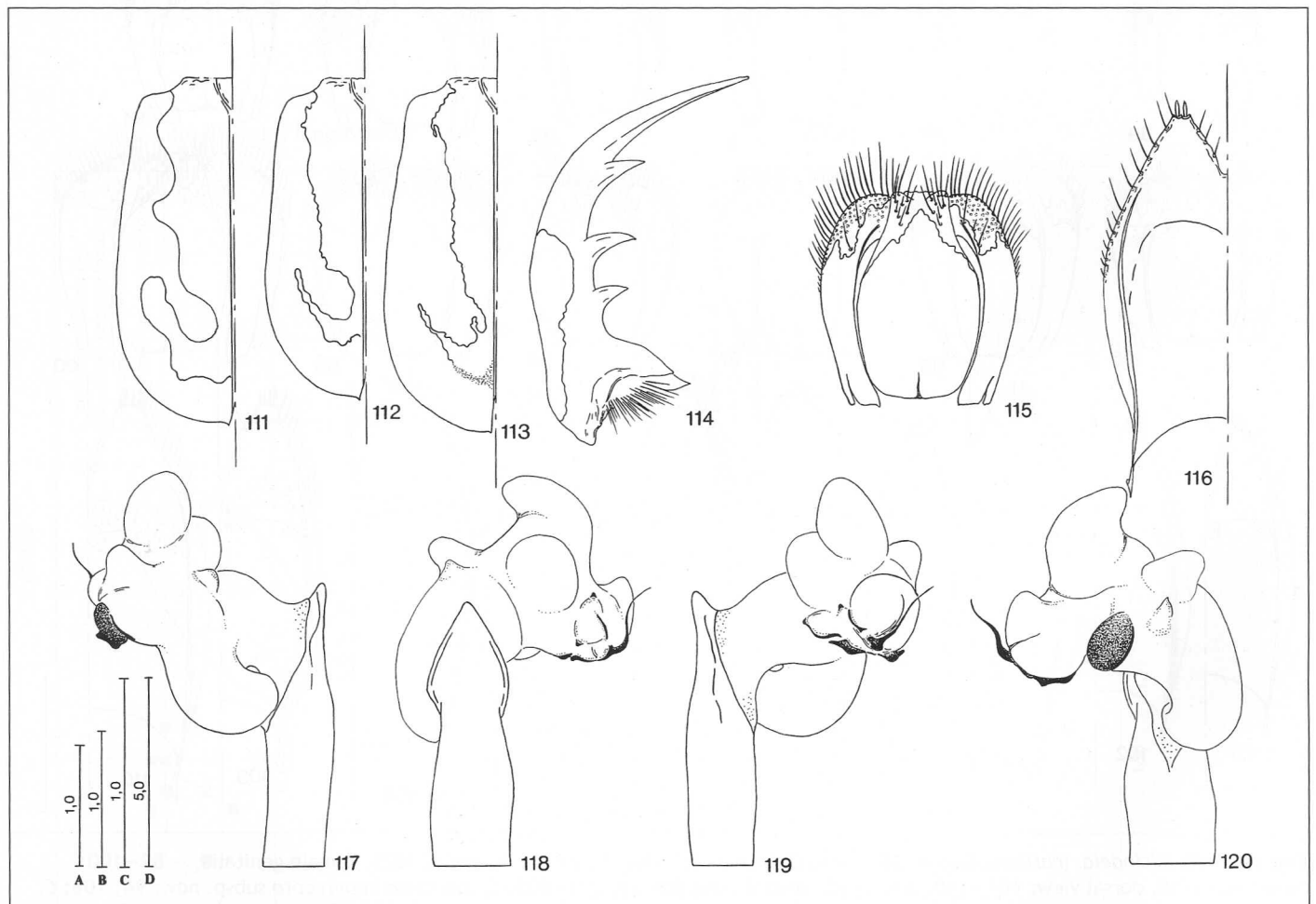
Figs 89–110. *Cicindela maritima* DEJEAN, 1822, and *Cicindela restricta* FISCHER VON WALDHEIM, 1825. Female genitalia. – 89–100: syntergum 9/10, dorsal view; 101–110: sternum 8, ventral view. 89–93, 101–105: *C. maritima impercepta* subsp. nov.; 94, 106: *C. hybrida reitteri* HORN, 1897 (Lectotype ♀); 95, 96, 107: *C. maritima kirgisisca* MANDL, 1936; 97, 108: *C. maritima maritima* DEJEAN, 1822; 98–100, 109–110: *Cicindela restricta restricta*. – 89–90, 101–102: Orok-Nuur lake (south-western Mongolia); 91, 92, 103, 104: Zargalan (western Mongolia); 93, 105: Telmen Nuur lake (western Mongolia); 95: Khoper river (Voronezhskaya Area); 96, 107: Khar'kov (Ukraine); 97, 108: Ratta river (Tyumenskaya Area); 98: Tissa river (Buryatiya); 99, 109: Ingirma river (Krasnoyarskiy Region); 100, 110: Onon river (Dauriya). – 89, 101: Holotype; 90–93, 102–105: Paratypes. – Scale bar in mm.

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Figs 111–120. *Cicindela resplendens* DOKHTOUROFF, 1888. Eelytra, mandible and ♂ and ♀ genitalia (Ordos, China). – 111–113: left elytra; 114: left mandible; 115–118: internal sac; 119: syntergum 9/10, dorsal view; 120: sternum 8, ventral view; 115: left view; 116: dorsal view; 117: right view; 118: ventral view. – 111, 114, 119–120: females; 112, 113, 115–118: males. 115–118: Lectotype; 111–114 and 118–120: Paralectotypes. – Scale bars (in mm): A: 114, B: 116–120, C: 115, D: 111–113.

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