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Chaetocnema species
(Coleoptera: Chrysomelidae:
Galerucinae: Alticini)

Alexander S. Konstantinov,
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REVISION OF THE PALEARCTIC CHAETOCNEMA SPECIES
(COLEOPTERA: CHRYSOMELIDAE: GALERUCINAE: ALTICINI)

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Introduction

Chaetocnema Stephens is one of a few flea beetle genera that are cosmopolitan. With the changes proposed in this study, 437 of the approximately 630 available species-group names are considered as valid; the known species occur in the Afrotropical (149), Australian (26), Nearctic (36), Neotropical (106), Oriental (76), and Palearctic (75) Regions. The Palearctic *Chaetocnema* fauna has received considerable attention over the years by numerous researchers. Important works of the 19th and early 20th centuries include Foudras (1860), Kutschera (1864), Allard (1866), Redtenbacher (1874), Weise (1889), and Heikertinger (1912), culminating eventually in Heikertinger's (1951) revision of the entire fauna. While the western Palearctic Region has been studied relatively well, much less is known about the *Chaetocnema* species occurring in Eastern Europe, Middle and Central Asia¹, Siberia, and the Far East. Notable exceptions are some individual initiatives, like the Caucasus material collected by Hans Leder and studied by the German entomologists Julius Weise and Edmund Reitter (and, subsequently, by Heikertinger) or the milestone monograph on Middle Asian species by Lopatin (1977b). Siberian and Far Eastern *Chaetocnema* species can be identified to some extent with the relatively recent keys provided by Medvedev (1992) and Medvedev & Dubeshko (1992). However, these keys are based on previously published, often erroneous information without much scrutiny.

The current levels of *Chaetocnema* species delineation are varied. Some species are well defined based on a number of established morphological characters. Others, like those in the *C. concinna* and *C. breviscula* groups, or *C. aridula* and *C. costulata*, are difficult to recognize based on the few (sometimes one), often subtle differences in the male or female genitalia. This could be the result of taxonomic biases due to an inconsistent methodological or geographical approach, which is known to have occurred in other taxa (Cabrero-Sañudo & Lobo 2003; Baselga et al. 2007, 2010). However, it could also reflect rather recent speciation events in some groups of

¹ Middle Asia is a natural region that is distinct from Central Asia: it includes the Asian republics of the former USSR and neighbouring parts of Afghanistan; the region is characterized by warm winters and maximum rainfalls in spring and autumn. Central Asia is a climatic region that includes Mongolia and a large area of western China; it is characterized by an extreme continental climate with harsh winters and maximum rainfall in late summer (Medvedev 2005).

Palearctic *Chaetocnema*. Temperate faunas are relatively younger than tropical ones (Hawkins et al. 2006), and this may explain the various levels of morphological differentiation in some congeneric species. Similar observations have been made for species in *Aphthona* Chevrolat, with the (older) Oriental fauna (Konstantinov & Lingafelter 2002) appearing more differentiated than the (younger) Palearctic fauna (Konstantinov 1998). In this revision we attempt to treat all included species under consistent criteria based on the study of representative material and a thoroughly compiled character matrix.

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We are also grateful to colleagues who collected specimens on our behalf: A. Pisanenko, S. Saluk, and V. Karasev † (Minsk, Belarus), B. Korotyaev (ZMAS), M. Bergeal † (Versailles, France).

We thank M. Volkovitsh who dissected hundreds of *Chaetocnema* specimens, prepared slides and took digital pictures of female genitalia for most of the *Chaetocnema* species treated here. N. Prudnikov (Minsk, Belarus) drew the three color habitus illustrations. K. Arakawa (Japan) illustrated most of the male genitalia and M. Metz (Systematic Entomology Laboratory, Washington, DC) produced images used in Figure 1 and 2. L. Gültekin (Erzurum University, Erzurum, Turkey) kindly translated the description of *C. turhalus* Iriboz (1934) from Turkish to English. We thank J. Bezděk (Mendel University of Agriculture and Forestry, Department of Zoology, Brno, Czech Republic), A. Norrbom and M. Pogue (Systematic Entomology Laboratory, Washington, DC) and A. Tishechkin (Santa Barbara Museum of Natural History, Santa Barbara, CA) for thoroughly reviewing earlier versions of this manuscript and for their valuable suggestions.

Methods

This study covers most of the Palearctic Region, *i.e.*, the cold, temperate, and subtropical parts of Eurasia and North Africa (Konstantinov et al. 2009). Southern China (south of border of subtropical forests), Taiwan, and the Ryukyu Islands of Japan are considered as belonging to the Oriental Region (Konstantinov et al. 2009). We also did not treat Himalayan fauna (Orthrian Region of the Palearctic sensu Konstantinov et al. 2009). Based on our experience with Palearctic and Oriental *Aphthona* (Konstantinov 1998, Konstantinov & Lingafelter 2002, Konstantinov & Sprecher-Uebersax 2005), Himalayan flea beetles are better understood within the framework of the Oriental fauna. Although being Palearctic by definition, we did not include *C. kerimi* (Fairmaire) and *C. latipennis* Pic from North Africa, because they need to be compared with African *Chaetocnema*, which is outside the scope of this paper. However, we included *C. punctifrons* (Abeille), described from Algeria, since it was recorded in southern Italy (Biondi 1990a). The recently published catalog of Palearctic flea beetles (Döberl 2010) treats the Palearctic Region in a much broader sense, including all of China and Japan. This explains the differences in the number of *Chaetocnema* species treated in that work and here.

There are a few Palearctic *Chaetocnema* species for which types are lost or inaccessible and descriptions are very poor. Originally we thought not to include these species in any discussion. However, after conversations with colleagues and following suggestions of reviewers, based on our understanding of the Palearctic fauna, we decided to provide our interpretation of *C. sonkulica* Palij 1968 and *C. turhalus* Iriboz 1934. *Chaetocnema rhombea* Weise 1886 is not included in the revision because it is suggested to be a Nearctic species (Heikertinger 1951). We could not locate either of the two syntypes in NHMB and ZMHB. Two Chinese species were also not included in the revision [*C. shanxiensis* Chen & Wang 1980, Shanxi (IZAS) and *C. zangana* Chen & Wang 1981, from Tibet, Gyirong, Zhang Xuezhong (IZAS)]. Both species are described from the area in between Palearctic and Oriental Regions and (based on the descriptions) are similar to the Oriental *Chaetocnema*. The types were not available for this study.

The following conventions are applied to Heikertinger's (1951) treatment of Palearctic *Chaetocnema*, one of the most important and inclusive papers on the genus: (1) Page numbers are cited from the regular issue pagination of *Koleopterologische*

Rundschau (pp. 133–216) rather than the individual pagination of the work (pp. 1–84), which both are printed in the upper corner of each page; (2) Because Heikertinger classified taxa as subspecies, variations and forms in the same work, we consider the latter two ranks as infrasubspecific and, therefore, nomenclaturally unavailable; (3) Heikertinger (1951) is cited as the primary source for synonymies of species-group names, even if the synonymy had been proposed previously elsewhere. However, previous or later works are cited for synonymies not presented in Heikertinger (1951).

Specimens were examined from the following collections (abbreviations for collections mostly follow Evenhuis 2009):

BASC	Spain, Santiago de Compostela, A. Baselga collection;
BCPF	France, Versailles, M. Bergeal collection;
BMNH	United Kingdom, London, The Natural History Museum;
CASC	USA, CA, San Francisco, California Academy of Sciences;
DCAG	Germany, Abesberg, M. Döberl collection;
HNHM	Hungary, Budapest, Hungarian Museum of Natural History;
IMCI	India, Calcutta, Indian Museum [mentioned in Maulik (1926)];
IZAS	China, Beijing, Chinese Academy of Sciences, Institute of Zoology;
JKHC	Armenia, Yerevan, S. M. Jablokoff-Khnzorian collection, c/o M. G. Kallashyan;
KUEC	Japan, Fukuoka, Kyushu University;
MCMA	Malta, D. Mifsud collection;
MCZC	USA, Massachusetts, Cambridge, Harvard University, Museum of Comparative Zoology;
MNCN	Spain, Madrid, Museo Nacional de Ciencias Naturales;
MNHN	France, Paris, Muséum National d'Histoire Naturelle;
NHMB	Switzerland, Basel, Natural History Museum;
NHRS	Sweden, Stockholm, Naturhistoriska Riksmuseet;
NMPC	Czech Republic, Prague, National Museum (Natural History);
NHMW	Austria, Vienna, Natural History Museum;
OMOJ	Osaka Museum of Natural History (Entomology), Osaka, Japan;
TAIT	Taiwan, Taipei, Taiwan Agricultural Institute;
UUZM	Sweden, Uppsala, Zoological Museum, Uppsala University;
USNM	USA, Washington D.C., National Museum of Natural History;
ZMAS	Russia, St. Petersburg, Zoological Institute of Russian Academy of Sciences;
ZMHB	Germany, Berlin, Museum für Naturkunde der Humboldt-Universität;
ZSMC	Germany, Munich, Zoologische Staatssammlung.

Specimen preparation, dissection, observation, illustration and terminology follow Konstantinov (1998) and Konstantinov & Lingafelter (2002), except for the term

“aedeagus” which is used here instead of “median lobe of aedeagus”. The format follows the conventions outlined and used in Konstantinov (1998). For each species, we provide a taxonomic bibliography section, summaries of species distribution and host plants, description, comments (with data on diagnosis and characters that can be used to separate the species under consideration from similar species), and a list of all label data of the specimens examined. We numbered the labels of the type specimens consecutively and quote the data thereupon, but give no details about label paper, shape, color, or quality. Type localities, when possible, are cited *verbatim*, *i.e.*, exactly as they appear in the original publications. Modern geographical terms and country are added in square brackets when considered necessary. Distributional data provided in this work follow most of the previously published papers. Country records without citation mostly follow the Palearctic catalog (Döberl 2010). Host plants are listed without author and plant family; the latter are provided in the plant index at the end of the paper.

The data matrix, consisting of 92 characters with 254 states for 75 species, was built with Lucid software (www.lucidcentral.org). Natural language descriptions were generated from Lucid and extensively edited. The same file was converted to genuine Delta format and Delta (Dallwitz 1980) was used to produce the identification key presented herein. Several species key out in more than one place, resulting in 88 terminal nodes for 75 species. The key includes 42 characters.

All authors of this paper are authors of the new species described herein. An example of a new species citation is as follows: *Chaetocnema belka* Konstantinov, Baselga, Grebennikov, Prena, and Lingafelter.

Biology

Chaetocnema has several important pest species in the Palearctic Region that can cause considerable harm to agricultural crops (Table 1). The biology of the detrimental species is usually much better understood than the biology of the economically more benign ones. Kurdjumov & Znamenskii (1917), Meyer (1934), Dobrovolskii (1950), Palij (1961), Palij & Avanesova (1975), Laitinen & Raatikainen (1975), Varis (1976), and Vasil'eva (2004) are good sources for biological information on these beetles and their control.

Konstantinov (1988) studied aspects of the biology and ecology of 27 *Chaetocnema* species occurring in the Russian Plain and surrounding territories (equivalent to the European part of the former USSR). He found that the majority of species occurs in the steppe and southern forest regions, while arid and nival regions have the poorest *Chaetocnema* species communities composed of widespread and ubiquitous generalists, such as *C. aridula* and *C. hortensis*, which can feed on and develop on many plant species. Two ecological groups of *Chaetocnema* species were distinguished: (1) species adapted to very arid or very moist habitats and occurring only in these specific habitats regardless of the biogeographic zone (Konstantinov et al. 2009); (2) species with the ability to occupy different habitats depending on the biogeographic zone they inhabit (e.g., inhabitants of moderately humid habitats in nemoral regions migrate

Table 1. Major pest species of Palearctic *Chaetocnema* and cultivated plants that they damage (Palij 1961, Palij & Avanesova 1975, Doguet 1994).

<i>Chaetocnema</i> species	Plant
<i>C. aridula</i>	barley (<i>Hordeum</i> spp.), oats (<i>Avena sativa</i>), rye (<i>Secale cereale</i>), wheat (<i>Triticum</i> spp.)
<i>C. breviuscula</i>	beet (<i>Beta vulgaris</i>)
<i>C. concinna</i>	beet (<i>Beta vulgaris</i>), buckwheat (<i>Fagopyrum esculentum</i>)
<i>C. hortensis</i>	barley (<i>Hordeum</i> spp.), flax (<i>Linum usitatissimum</i>), wheat (<i>Triticum</i> spp.)
<i>C. ingenua</i>	millet (<i>Panicum miliaceum</i>)
<i>C. picipes</i>	beet (<i>Beta vulgaris</i>)
<i>C. scheffleri</i>	buckwheat (<i>Fagopyrum esculentum</i>)
<i>C. tibialis</i>	beet (<i>Beta vulgaris</i>)

to high humidity habitats in the steppe zone). A noteworthy observation made for the Russian Plain and surrounding territories is that *Chaetocnema* has comparatively more generalist species with a larger geographic range, wider host spectrum, and less habitat specificity than other diverse flea beetle genera, such as *Aphthona* Chevrolat, *Longitarsus* Latreille, and *Phyllotreta* Chevrolat (Konstantinov 1988).

Nomenclatural History, Usage, and Applicability of Genus-Group Names

Odontocnema; Stephens (1831:285), incorrect original spelling, unavailable under Article 19.3.

Chaetocnema Stephens 1831:325 (type species: *Chrysomela concinna* Marsham 1802, subsequent designation by Westwood 1838:42).

Plectroscelis Dejean 1836:393 (type species: *Haltica dentipes* sensu Oliver 1808 [= *Altica chlorophana* Duftschmid 1825, fixed herein under Article 70.3; not *Altica dentipes* Koch 1803], misidentified in the first subsequent designation by Chevrolat 1845:6; Redtenbacher 1849:539, subjective synonym of *Chaetocnema*, priority reversed).

Tlanoma Motschulsky 1845a:108 (type species: *Altica dentipes* Koch 1803 = *Chrysomela concinna* Marsham 1802, by original designation; White 1996:22, subjective synonym of *Chaetocnema*).

Udorpes Motschulsky 1845a:107 (type species: *Udorpes splendens* Motschulsky 1845, by monotypy; Heikertinger & Csiki 1940:375, subjective synonym of *Chaetocnema*).

Ydorpes Motschulsky 1845b:[549] (unjustified emendation of *Udorpes* Motschulsky 1845a)

Udorpus; Agassiz (1846:167), *lapsus calami* for *Udorpes*.

Hydropus Motschulsky 1860:235 (unjustified emendation of *Udorpes* Motschulsky 1845a).

Hydorpes; Motschulsky (1860:257), *lapsus calami* for *Hydropus*.

Exorhina Weise 1886:750 (Type species: *Altica chlorophana* Duftschmid 1825, subsequent designation by Döberl, 2010:508; Scherer 1961a:259, subjective synonym of *Chaetocnema*).

Brinckaltica Bechyné 1959:237 (type species: *Chaetocnema subaterrima* Jacoby 1900, by original designation; Scherer 1961a:259, subjective synonym of *Chaetocnema*).

Biodontocnema Biondi 2000:348 (type species: *Biodontocnema brunnea* Biondi, 2000:348, by original designation). **New synonym.**

Stephens (1831) described *Chaetocnema* without designating a type species. Westwood's (1838:42) subsequent designation of *Chrysomela concinna* Marsham was overlooked by Maulik (1926:202) who, in turn, designated *Galeruca aridella* Paykull as the type species. *Altica hortensis* Geoffroy, the most senior and valid name for *G. aridella*,

has also been cited as the type species; however, it was originally not included in *Chaetocnema* and, as a name, is unavailable for this purpose.

Plectroscelis, originally a Chevrolat manuscript name, was first published by Dejean (1836) in combination with five available species-group names. In the foreword to the next edition of his catalogue, Dejean (1837:xiii) provided information that would make Chevrolat the author of *Plectroscelis* if it had been published therein for the first time. However, Article 50.1.1 demands that such information must be explicit in the publication itself, thus the authorship has to be attributed to Dejean rather than Chevrolat, with the date 31.xii.1836 (see Madge 1988). Chevrolat (1845) designated *Haltica dentipes* Olivier, a subsequent usage of *Altica dentipes* Koch, as the type species for *Plectroscelis*. This designation is based on a misidentified type species [*Haltica dentipes* sensu Olivier = *Plectroscelis chlorophana* Duftschmid 1825 according to Heikertinger (1951); *Altica dentipes* Koch = *Chaetocnema concinna* Marsham]. Article 70.3 rules that the first revising author may fix either the nominal or the misidentified species as the type species. We refer here to Article 70.3.2 and apply Chevrolat's designation of *Haltica dentipes* sensu Olivier to *Plectroscelis chlorophana* Duftschmid. This makes *Plectroscelis* a subjective junior synonym of *Chaetocnema* while the name remains available for taxonomic purposes. Monrós & Bechyné's (1956:1134) designation of *Altica aridula* Gyllenhal as the type species for *Plectroscelis* is invalid (Article 70).

Motschulsky (1845a) described *Udorpes* based on three species, of which only *U. splendens* Motschulsky had an available name at that time; the other two species were discussed and described in Motschulsky (1860:235). In the next issue of the same journal [with a different date of publication], Motschulsky (1845b) corrected the name to *Ydorpes*. However, 15 years later, Motschulsky (1860) claimed *Udorpes* was a misspelling of *Hydropus* [misspelled as *Hydorpes* in the index], no longer referring to *Ydorpes*. Since there is no evidence for an inadvertent error in the original work (Article 32.5), *Ydorpes* and *Hydropus* are unjustified emendations and, therefore, junior objective synonyms of *Udorpes*. *Hydorpes* and *Udorpus* are misspellings and nomenclaturally unavailable.

Weise (1889:749) briefly reviewed the history of *Chaetocnema* and *Plectroscelis* and confirmed their synonymy, which seems to have been proposed for the first time by Redtenbacher (1849:539). However, he recognized within *Chaetocnema* a subgenus with an indistinctly punctate metasternum and named it *Exorhina* in the key, without designating a type species. Gressitt & Kimoto (1963:777) associated *C. chlorophana* with *Exorhina* in their synonymy lists, but this is not a valid type designation. Döberl (2010) formally designated *H. chlorophana* Duftschmid as the type species for *Exorhina*, making it an objective synonym of *Plectroscelis*. Scherer (1961:538) placed *Exorhina* in synonymy with *Chaetocnema*.

Heikertinger (1912:162) also recognized two subgenera in *Chaetocnema*. He maintained *Plectroscelis* as a synonym of the nominotypical subgenus and included *Exorhina* [spelled *Exorrhina*] in the subgenus *Tlanoma* Motschulsky. The principal distinguishing characters were the sculpture on the head, the arrangement of the

elytral striae, and the body shape. He propagated this classification in two major catalogues (Heikertinger & Csiki 1940, Heikertinger 1951). White (1996:22) argued that Heikertinger's classification is based on invalid type designations and found little support for these two subgenera in the Nearctic. He accepted Westwood's (1838) designation of *A. concinna* Marsham as the type species of *Chaetocnema* and included therein *Tlanoma* as a synonym.

Biondi (2000) described *Biodontocnema* based on a single species (*B. brunnea* Biondi) and distinguished it from *Chaetocnema* by the bidentate apex of the dorsal metatibial margin. He claimed this morphological feature was absent in all other described flea beetle genera. However, *C. major* and *C. schlaeflii* have two denticles on the upper median and lateral edges of the metatibia and agree well with *B. brunnea*. All other *Chaetocnema* have only one denticle on the upper lateral edge. Otherwise, *B. brunnea* is a typical *Chaetocnema*. Its male genitalia (based on the figures in Biondi 2000) are quite similar to those of *C. major* and *C. schlaeflii* and these three species may be closely related. We consider the morphological differences as insufficient for a separate genus and synonymize *Biodontocnema* with *Chaetocnema* (**new synonymy**).

The distinction of two subgeneric groups for Palearctic *Chaetocnema* is longstanding and not without merits. It is unfortunate that Westwood's (1838) type designation for *Chaetocnema* has been overlooked for a long time and many authors, including Döberl (2010), have based the nominal subgenus on *C. aridella* (= *C. hortensis*) rather than *C. concinna*. This makes the name for the other traditionally recognized subgenus, *Tlanoma* Motschulsky, a subjective junior synonym of *Chaetocnema* in the strict sense, while *Chaetocnema* of authors is left without a name. To fill this gap we propose *Udorpes* Motschulsky as the next available subgeneric name. Most Palearctic species are assignable to one or the other group based on two traditionally used characters: (1) frontal ridge wide and flat (*Udorpes*) vs. narrow and convex (*Chaetocnema*) and (2) vertex evenly and mostly densely covered with usually large punctures (*Udorpes*) vs. unevenly and sparsely covered with usually small punctures (*Chaetocnema*). This distinction is ambiguous for the species of the *C. conducta* group. At least *C. conducta* and *C. orientalis*, traditionally placed in *Chaetocnema*, have a relatively wide and flat frons (particularly *C. orientalis*) characteristic for *Udorpes*, but few punctures near the eye characteristic for *Chaetocnema*. *Chaetocnema depressa*, from the same group, has a narrow frontal ridge characteristic for *Chaetocnema*, but the vertex is completely covered with large punctures as in most species of *Udorpes*. Two eastern Palearctic species, *C. cylindrica* and *C. concinnicollis*, also share the narrow frontal ridge, but the vertex is densely covered with large punctures leaving a bare strip in the middle; they have been placed traditionally in *Udorpes*. These suites of morphological differences are not consistent in the Nearctic fauna (White 1996) and are similarly meaningless in other regions of the World. Besides those two historically used subgenera, other species groups can be recognized, like the complex around *C. breviscula*, with *C.*

delarouzei, *C. lubischevi*, *C. scheffleri*, and *C. tibialis*. A subgeneric reclassification of *Chaetocnema* clearly needs to be based on a rigorous phylogenetic study with inclusion of representative material from all biogeographic regions, an approach that is well beyond the scope of this study. Until such an analysis is available, we propose not to use any subgeneric classification for *Chaetocnema*.

Morphology and Diagnostic Characters

All Palearctic *Chaetocnema* species share the following two important diagnostic features: first and second ventrites fused and middle and hind tibiae with obtuse tooth beyond middle, followed by an excavation having a marginal row of stiff setae. These traits distinguish *Chaetocnema* from all other flea beetle genera in the Palearctic Region (Konstantinov & Vandenberg 1996).

Chaetocnema species are habitually very similar and cannot be separated only with external characters (Fig. 1). In most cases, dissection and study of the genitalia, both male and female, is required for species identification. We used established characters for species separation and explored the usefulness of others. Among the traditionally used characters, the most reliable ones are the relative width of the frontal ridge between the antennal sockets (Fig. 2), the shape and punctation of the pronotum and elytra, and the color of the body and appendages. Genitalic characters (Fig. 3) have been used traditionally and are diagnostically important. The shape and proportion of the tarsomeres were used by Lubischev (1963) to separate species in the *C. concinna* group and proved useful in our study. Newly employed characters are the shape and relative depth of the head sulci, the shape and proportion of the ventral groove of the aedeagus, and most characters of the spermatheca, tignum, and vaginal palpus. The latter were not used in previous studies.

Some characters are associated only with species from a particular Palearctic sub-region. For example, species with impunctate longitudinal stripes on the pronotum occur only in the eastern Palearctic (Japan, China, Russian Far East), although not all the species in the region share that character state. Species from Middle and Central Asia (e.g., *C. klapperichi*) commonly have lighter-colored appendages than others from more northern territories.

Other characters are associated with species from a particular kind of habitat. For example, beetles from arid habitats usually have very long metatarsal spurs and long and thin metatarsomeres. Species from humid habitats usually have short metatarsal spurs and short and wide metatarsomeres (e.g., *C. cylindrica*). These developments seem biologically meaningful, since slender tarsomeres have less surface area than flat tarsomeres and are less prone to absorb heat and perspire water, an advantage in arid environment.

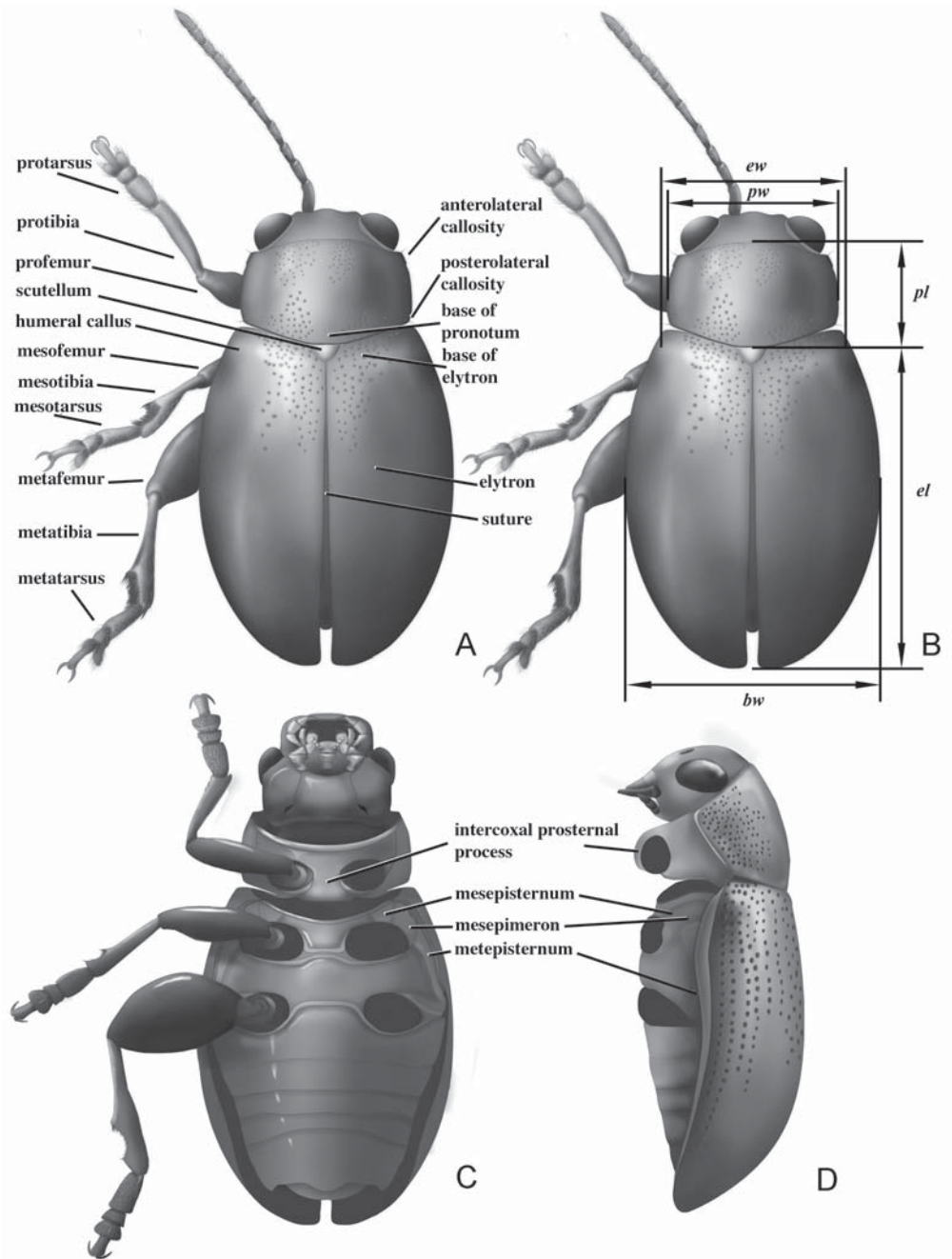


Figure 1. *Chaetocnema* morphology and measurements; A, habitus, dorsal; B, habitus, dorsal, measurements; C, habitus, ventral; D, habitus lateral. Abbreviations: *bw*, body width; *el*, length of elytron; *ew*, width of elytron; *pl*, length of pronotum; *pw*, width of pronotum.

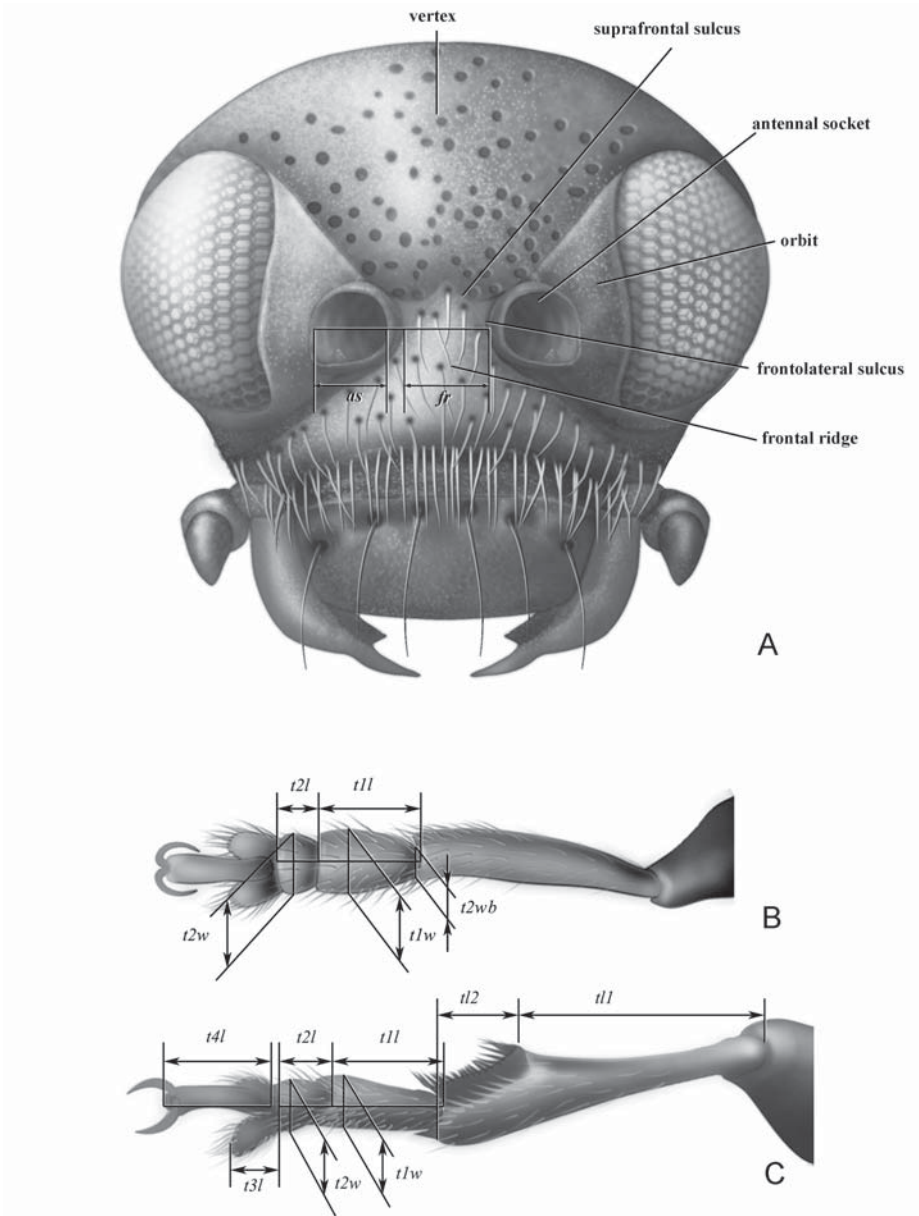


Figure 2. *Chaetocnema* morphology and measurements; A, head, frontal; B, front leg; C, hind leg. Abbreviations: *as*, width of antennal socket; *fr*, width of frontal ridge; *t1l*, length of tarsomere one; *t2l*, length of tarsomere two; *t3l*, length of tarsomere three; *t4l*, length of tarsomere four; *t1w*, width of tarsomere one; *t2w*, width of tarsomere two; *t2wb*, width of tarsomere two at base; *t1l*, length of metatibia from base to denticle; *t12*, length of metatibia from denticle to apex.

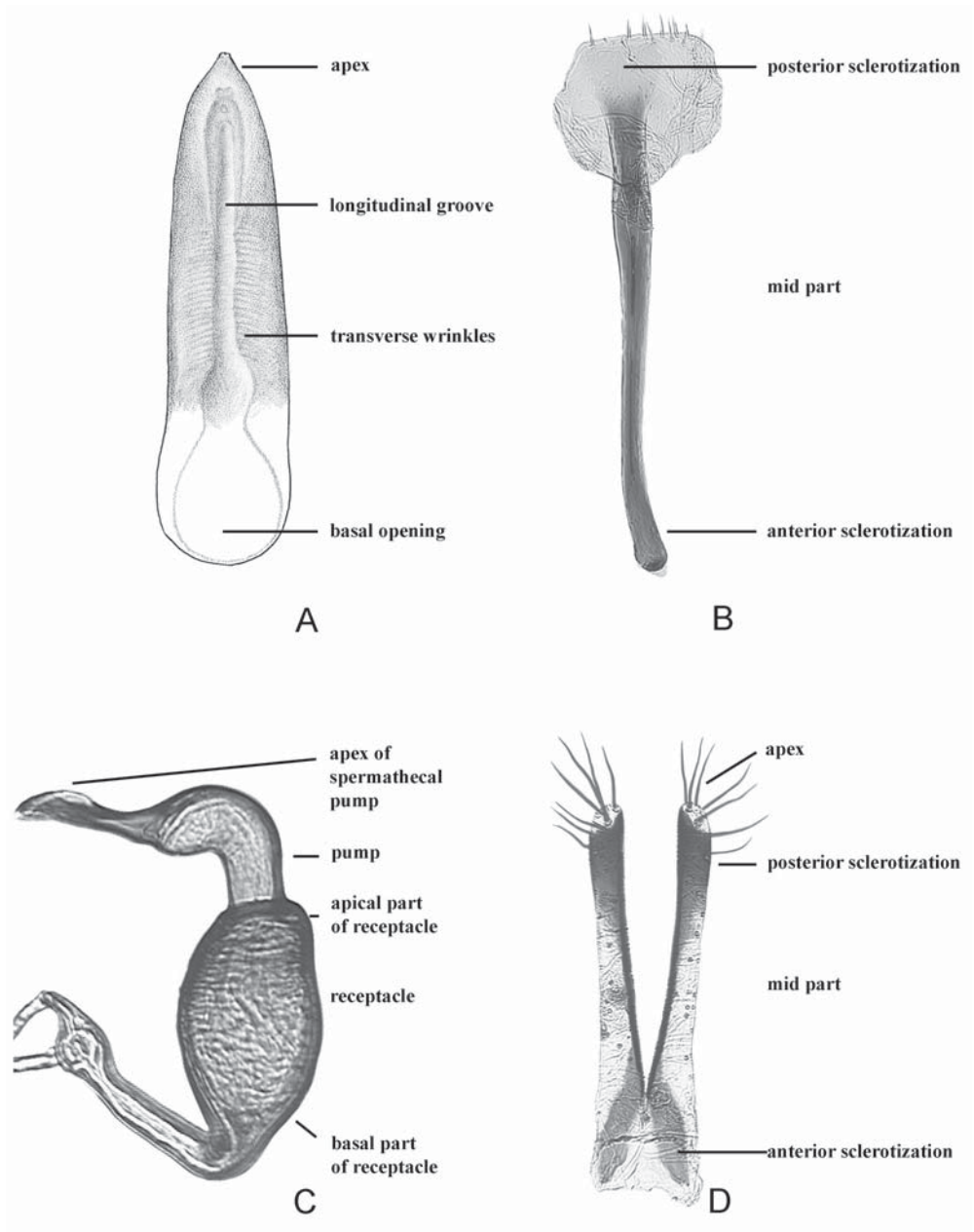


Figure 3. *Chaetocnema* genitalia morphology and terminology used in this paper; A, aedeagus of *C. arenacea*, ventral view; B, tignum of *C. gottwaldi*; C, spermatheca of *C. balanomorpha*; D, vaginal palpi of *C. balanomorpha*.

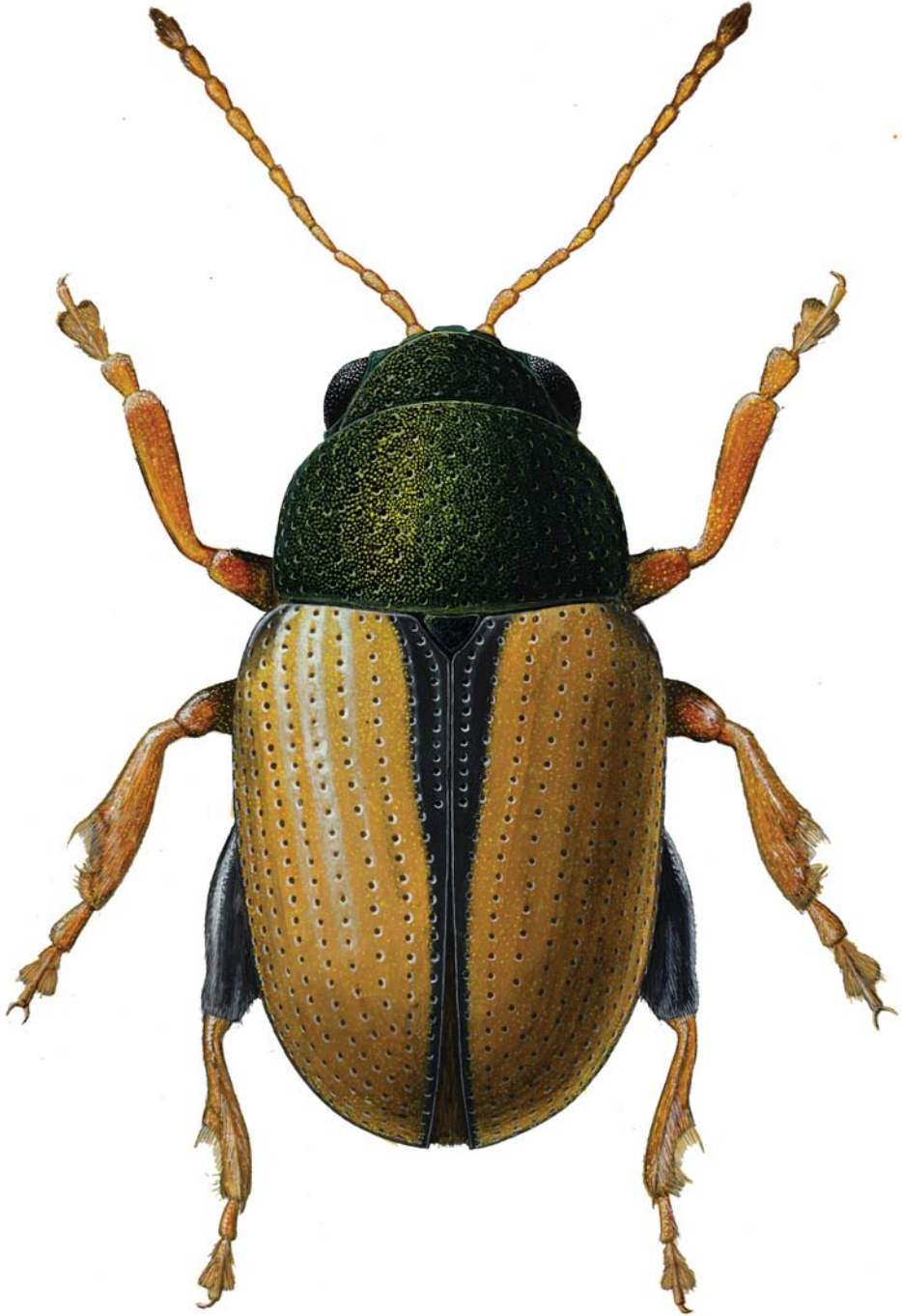


Figure 4. *Chaetocnema conducta*; habitus, dorsal.

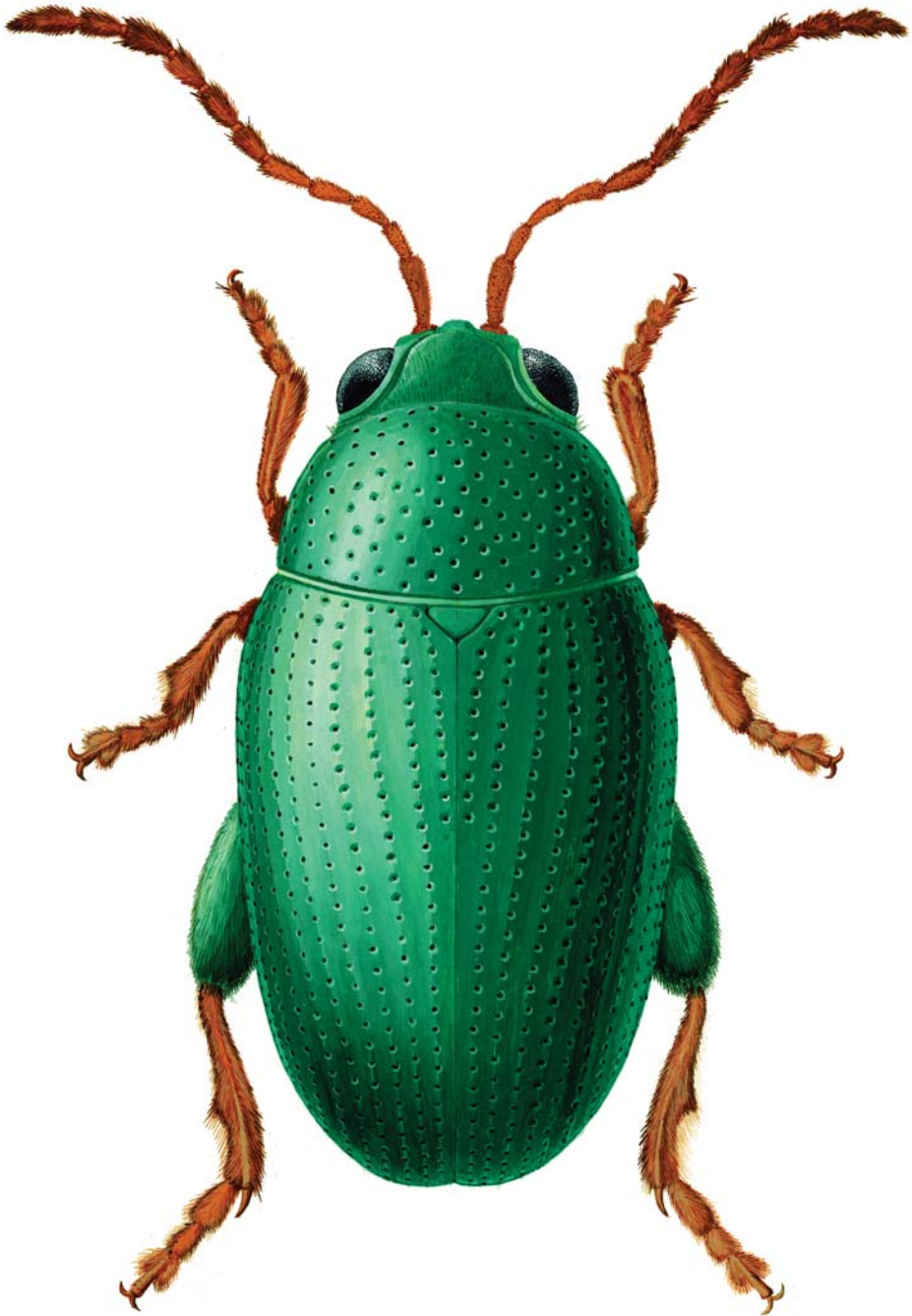


Figure 5. *Chaetocnema coyei*; habitus, dorsal.

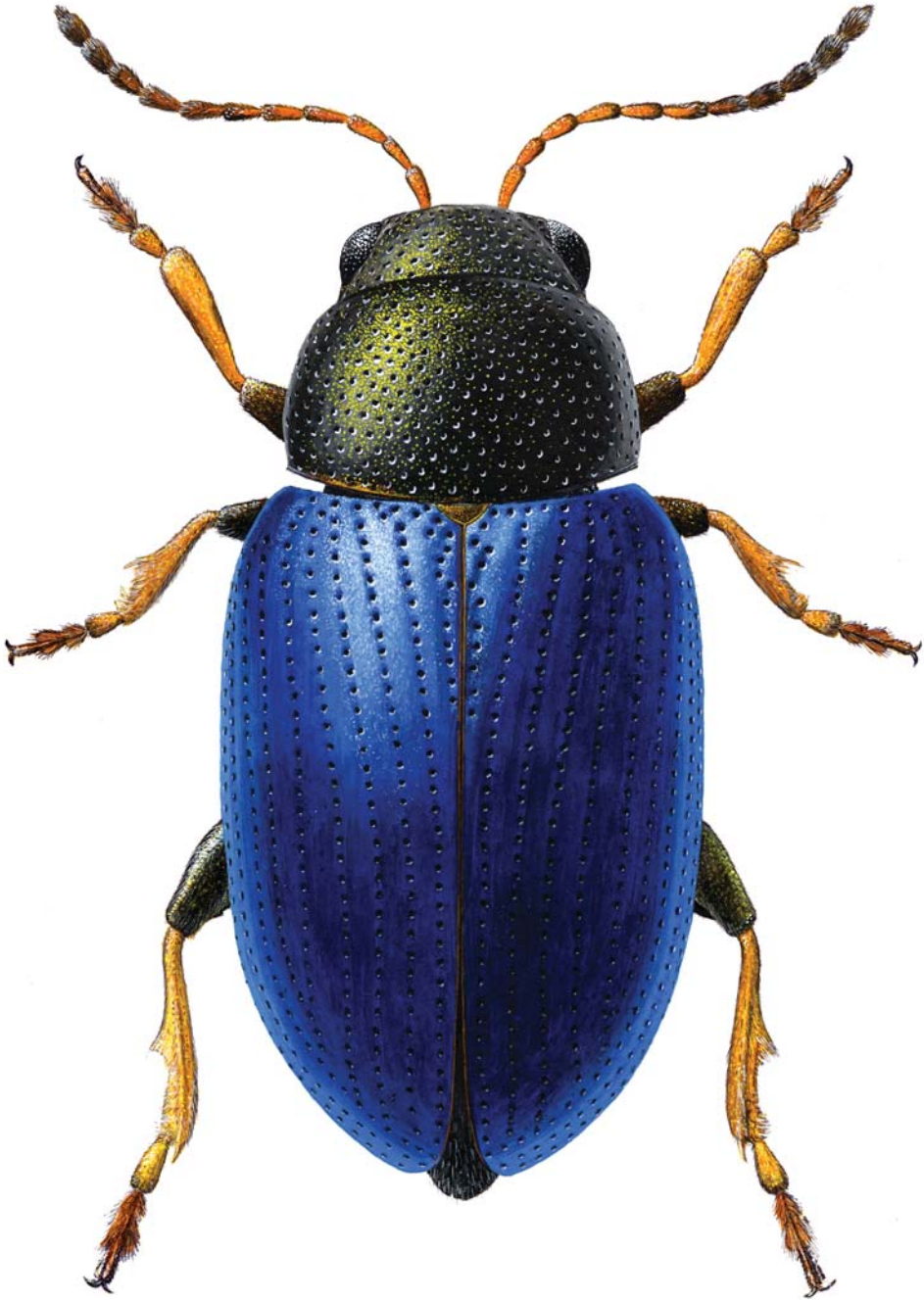


Figure 6. *Chaetocnema splendens*; habitus, dorsal.

Key to *Chaetocnema* Species of the Palearctic Region

1. Scutellar row of elytral punctures regular and single..... 2
Scutellar row of elytral punctures confused or more than one 25
- 2(1). Base of pronotum with two well-developed longitudinal impressions, visible near basal margin and further anteriorly..... 3
Base of pronotum with two short impressions visible only near basal margin 11
Base of pronotum without longitudinal impressions 13
- 3(2). Metatibial serration proximal to large lateral denticle present, sharp 4
Metatibial serration proximal to large lateral denticle absent 7
Metatibial serration proximal to large lateral denticle present, obtuse..... 8
- 4(3). Deep row of large punctures at base of pronotum present throughout.....
..... *Chaetocnema septentrionalis* **Kimoto**
Deep row of large punctures at base of pronotum absent 5
Deep row of large punctures at base of pronotum present on sides, lacking in middle 6
- 5(4). Surface of vertex sparsely and unevenly covered with punctures. Large lateral denticle on metatibia obtuse. Aedeagus in lateral view evenly and strongly curved (Fig. 62 D). Posterior sclerotization of tignum spoon-shaped, wider than mid section (Fig. 62 E)..... *Chaetocnema pelagica* **Caillol**
Surface of vertex with 8–10 punctures near eye. Large lateral denticle on metatibia sharp. Aedeagus in lateral view evenly and slightly curved (Fig. 50 D). Posterior sclerotization of tignum gradually narrowing, narrower than mid section (Fig. 50 E)..... *Chaetocnema lubischevi* **Konstantinov et al.**
- 6(4). Surface of vertex sparsely and unevenly covered with punctures. Profemora and mesofemora yellow. Apical third of aedeagus narrowing (Fig. 71 D).....
..... *Chaetocnema semicoerulea* (**Koch**)
Surface of vertex with 8–10 punctures near eye. Profemora and mesofemora partly brown. Apical third of aedeagus widening (Fig. 80 D).....
..... *Chaetocnema transbaicalica* **Heikertinger**
- 7(3). Antennomere 5 completely yellow. Pro-, meso-, and metatibiae partly brown *Chaetocnema punctifrons* (**Abeille**)

- Antennomere 5 partly brown. Pro-, meso-, and metatibiae yellow
 *Chaetocnema granulosa* (Baly)
- Antennomere 5 completely brown. Pro-, meso-, and metatibiae brown
 *Chaetocnema chlorophana* (Duftschmid)
- 8(3). Posterior sclerotization of tignum arrow shaped, not much wider than mid
 section (Fig. 22 E)..... 9
 Posterior sclerotization of tignum spoon-shaped, wider than mid section (Fig.
 63 E) *Chaetocnema picipes* (Stephens)
- Posterior sclerotization of tignum widening into shapeless plate (Fig. 52 E)10
 Posterior sclerotization of tignum without particular shape, as wide as mid
 section (Fig. 47 E)..... *Chaetocnema koreana* Chûjô
- 9(8). Apical third of aedeagus parallel sided. Ventral longitudinal groove in apical
 half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 22 D).
 Mid section of tignum nearly straight (Fig. 22 E). Ventral surface of aedeagus
 lateral to median groove apically convex *Chaetocnema concinna* (Marsham)
- Apical third of aedeagus widening. Ventral longitudinal groove in apical half of
 aedeagus absent (Fig. 37 D). Mid section of tignum slightly curved (Fig. 37 E).
 Ventral surface of aedeagus lateral to median groove apically flat, horizontal
 *Chaetocnema heptapotamica* Lubischev
- 10(8). Ventral longitudinal groove in apical half and in middle of aedeagus poorly
 developed, shallow, with obtuse margins (Fig 52 D). Mid section of tignum
 nearly straight (Fig. 52 E). Lateral sides of pronotum nearly straight, converg-
 ing anteriorly.....*Chaetocnema mandschurica* Heikertinger
- Ventral longitudinal groove in apical half and in middle of aedeagus absent
 (Fig. 51 D). Mid section of tignum slightly curved (Fig 51 E, I). Lateral sides of
 pronotum slightly convex with maximum width near base.....
 *Chaetocnema major* (Jacquelin du Val)
- 11(2). Vertex flat, situated on same level as orbit (Fig. 51 C). Diameter of pronotal
 punctures 2 to 4 times smaller than distance between them. Ventral longitudinal
 ridge in middle of aedeagus absent..... 12
 Vertex swollen, situated above level of orbit (Fig. 31 C). Diameter of pronotal
 punctures subequal to distance between them. Ventral longitudinal ridge in
 middle of aedeagus present (Fig. 31 D)..... *Chaetocnema discreta* (Baly)
- 12(11). Pro- and mesofemora yellow *Chaetocnema semicoerulea* (Koch)
- Pro- and mesofemora partly brown
 *Chaetocnema lubishevi* Konstantinov et al.
- Pro- and mesofemora light brown. Elytron black without metallic luster, pro-
 notum bronzish.....*Chaetocnema bicolorata* Kimoto
- Pro- and mesofemora brown. Pronotum and elytron blueish.....
 *Chaetocnema kimotoi* Gruev
- 13(2). Surface of vertex densely and evenly covered with punctures 14

- Surface of vertex sparsely and unevenly covered with punctures 19
- Surface of vertex with 8–10 punctures near eye..... 22
- Surface of vertex with 3–5 punctures near eye..... 23
- Surface of vertex lacking punctures..... *Chaetocnema basalis* Baly
- 14(13). Aedeagus abruptly curved in lateral view (Fig. 64 D)..... 15
- Aedeagus evenly and strongly curved in lateral view (Fig. 13 D)..... 16
- Aedeagus evenly and slightly curved in lateral view (Fig. 32 D) 17
- Aedeagus sinusoidal near apex in lateral view (Fig. 30 D)
..... *Chaetocnema depressa* (Boieldieu)
- 15(14). Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Metatibial serration proximal to large lateral denticle absent. Apical third of aedeagus parallel sided. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 64 D)
..... *Chaetocnema procerula* (Rosenhauer)
- Diameter of pronotal punctures 6 to 10 times smaller than distance between them. Metatibial serration proximal to large lateral denticle present, sharp. Apical third of aedeagus narrowing. Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins (Fig. 21 D).....
..... *Chaetocnema compressa* (Letzner)
- 16(14). Diameter of pronotal punctures subequal to distance between them. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Apical denticle of aedeagus in ventral view poorly differentiated (Fig. 13 D). Posterior sclerotization of tignum spoon-shaped, wider than mid section (Fig. 13 E)
..... *Chaetocnema balanomorpha* (Boieldieu)
- Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Ventral surface of aedeagus lateral to median groove apically convex. Apical denticle of aedeagus in ventral view ogival in shape (Fig. 9 D). Posterior sclerotization of tignum Y-shaped, much wider than mid section (Fig. 9 E) ...
..... *Chaetocnema angustula* (Rosenhauer)
- 17(14). Antennomere 5 completely yellow. Apical denticle of aedeagus in ventral view well differentiated, tall, wide, flat on top. Metafemora light brown. Aedeagus distal to basal opening nearly as wide as aedeagus just before apical declivity (Fig. 32 D)..... *Chaetocnema eastafghanica* Konstantinov et al.
- Antennomere 5 partly brown. Apical denticle of aedeagus in ventral view absent. Metafemora brown. Aedeagus distal to basal opening wider than just before apical declivity 18
- 18(17). Ventral surface of aedeagus lateral to median groove apically convex (Fig. 75 D). Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening, losing sharp border. Mid section of tignum nearly straight (Fig. 75 E). Anterior sclerotization of vaginal palpus slightly narrowing anteriorly *Chaetocnema splendens* (Motschulsky)

- Ventral surface of aedeagus lateral to median groove apically flat, horizontal (Fig. 49 D). Posterior sclerotization of tignum gradually narrowing, narrower than mid section. Mid section of tignum slightly curved (Fig. 49 E). Anterior sclerotization of vaginal palpus slightly widening anteriorly
 *Chaetocnema ljudmilae* Lopatin
- 19(13). Apical denticle of aedeagus in ventral view well differentiated, tall, wide, flat on top (Fig. 81 D) *Chaetocnema ussuriensis* Heikertinger
 Apical denticle of aedeagus in ventral view asymmetrical (Fig. 27 D)
 *Chaetocnema coyeyi* (Allard)
 Apical denticle of aedeagus in ventral view poorly differentiated (Fig. 24 D)
 20
 Apical denticle of aedeagus in ventral view absent (Fig. 56 D) 21
- 20(19). Antennomere 5 completely yellow. Pro-, meso-, and metatibiae yellow
 *Chaetocnema conducta* (Motschulsky)
 Antennomere 5 partly brown. Pro-, meso-, and metatibiae partly brown
 *Chaetocnema scheffleri* (Kutschera)
- 21(19). Deep row of large punctures at base of pronotum absent. Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins (Fig. 56 D). Posterior sclerotization of tignum without particular shape, as wide as mid section (Fig. 56 E) *Chaetocnema nebulosa* Weise
 Deep row of large punctures at base of pronotum present on sides, lacking in middle. Diameter of pronotal punctures 6 to 10 times smaller than distance between them. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 60 D). Posterior sclerotization of tignum widening into shapeless sclerite (Fig. 60 E)
 *Chaetocnema orientalis* (Motschulsky)
- 22(13). Posterior sclerotization of tignum gradually narrowing, narrower than mid section. Mid section of tignum slightly curved (Fig. 50 E)
 *Chaetocnema lubischevi* Konstantinov et al.
 Posterior sclerotization of tignum widening into shapeless sclerite. Mid section of tignum strongly curved (Fig. 19 E) *Chaetocnema breviuscula* (Faldermann)
 Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening, losing sharp border. Mid section of tignum nearly straight (Fig. 79 E) *Chaetocnema tibialis* (Illiger)
- 23(13). Pro- and mesofemora partly brown. Suprafrontal sulcus shallow and faint (Fig. 29 C) *Chaetocnema delarouzei* (Brisout)
 Pro- and mesofemora light brown. Suprafrontal sulcus deep laterally, shallow in middle (Fig. 44 C) *Chaetocnema kanmuyai* Kimoto
 Pro- and mesofemora brown. Suprafrontal sulcus relatively deep, well recognized (Fig. 19 C) 24

- 24(23). Antennomere 5 completely yellow. Mesotibia yellow. Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Ventral longitudinal groove in middle of aedeagus absent (Fig. 19 D).....
.....*Chaetocnema breviuscula* (Faldermann)
Antennomere 5 partly brown. Mesotibia partly brown. Diameter of pronotal punctures subequal to distance between them. Ventral longitudinal groove in middle of aedeagus poorly developed, shallow, with obtuse margins (Fig. 79 D).....*Chaetocnema tibialis* (Illiger)
- 25(1). Sixth row of elytral punctures regular 26
Sixth row of elytral punctures confused 40
- 26(25). Second row of punctures on elytron base regular 27
Second row of punctures on elytron base confused..... 35
- 27(26). Base of pronotum with two longitudinal impressions well-developed near basal margin and further anteriorly. Surface of vertex sparsely and unevenly covered with punctures. Metatibial serration proximal to large lateral denticle present, obtuse. Frons with only few relatively long setae on sides..... 28
Base of pronotum without longitudinal impressions. Surface of vertex densely and evenly covered with punctures. Metatibial serration proximal to large lateral denticle absent. Frons evenly covered with relatively short white setae..... 30
- 28(27). Pro- and mesofemora yellow. Deep row of large punctures at base of pronotum present throughout. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly (Fig. 70 G) *Chaetocnema schlaeflii* (Stierlin)
Pro- and mesofemora brown. Deep row of large punctures at base of pronotum absent. Anterior sclerotization of vaginal palpus posteriorly as wide as anteriorly before apex (Fig. 51 G, J) 29
- 29(28). Lateral sides of pronotum slightly convex with maximum width near base. Ventral longitudinal groove in apical half, in middle, and in basal half of aedeagus absent (Fig. 51 D) *Chaetocnema major* (Jacquelin du Val)
Lateral sides of pronotum nearly straight, converging anteriorly. Ventral longitudinal groove in apical half, middle and basal half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 52 D).....
.....*Chaetocnema mandschurica* Heikertinger
- 30(27). Head hypognathous. Elytral humeral callus well-developed (Fig. 22 A) 31
Head opistognathous. Elytral humeral callus poorly developed (Fig. 15 A)....
.....*Chaetocnema belka* Konstantinov et al.
- 31(30). Ventral longitudinal groove in basal half of aedeagus well-developed, with sharp margins (Fig. 7 D) 32
Ventral longitudinal groove in basal half of aedeagus well-developed, with obtuse margins (Fig. 8 D) 33
Ventral longitudinal groove in basal half of aedeagus poorly developed, with sharp margins (Fig. 54 D) *Chaetocnema modesta* Gressitt & Kimoto

- Ventral longitudinal groove in basal half of aedeagus poorly developed, with obtuse margins (Fig. 16 D) *Chaetocnema bella* (Baly)
 Ventral longitudinal groove in basal half of aedeagus absent (Fig. 46 D)..... 34
- 32(31). Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with sharp margins. Posterior sclerotization of tignum arrow shaped, not much wider than mid section (Fig. 7 E) *Chaetocnema aersosa* (Letzner)
 Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins. Posterior sclerotization of tignum spoon-shaped, wider than mid section (Fig. 41 E)..... *Chaetocnema ingenua* (Baly)
 Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins. Posterior sclerotization of tignum without particular shape, as wide as mid section (Fig. 67 E) *Chaetocnema rufofemorata* Pic
- 33(31). Metafemora light brown. Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 8 D)
 *Chaetocnema afghana* Grucev
 Metafemora brown. Diameter of pronotal punctures larger than distance between them. Ventral surface of aedeagus lateral to median groove apically convex. Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with sharp margins (Fig. 23 D) *Chaetocnema concinnicollis* (Baly)
- 34(31). Pro- and mesofemora yellow. Antennomere 5 completely yellow. Lateral sides of pronotum evenly rounded, with maximum width nearly in middle
 *Chaetocnema klapperichi* Lopatin
 Pro- and mesofemora brown. Antennomere 5 partly brown. Lateral sides of pronotum slightly convex with maximum width near base.....
 *Chaetocnema psylloides* Pic
- 35(26). Third through fifth rows of elytral punctures regular 36
 Third through fifth rows of elytral punctures confused..... 38
- 36(35). Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins (Fig. 40 D) *Chaetocnema imitatrix* Grucev
 Ventral longitudinal groove in apical half of aedeagus absent (Fig. 28 D)
 *Chaetocnema cylindrica* (Baly)
 Ventral longitudinal groove in apical half of aedeagus shallow with sharp margins (Fig. 34 D) *Chaetocnema gottwaldi* Král
 Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 65 D) 37
- 37(36). Aedeagus in lateral view evenly and strongly curved. Mid section of tignum strongly curved. Ventral longitudinal groove in basal half of aedeagus absent (Fig. 65 D). Anterior sclerotization of vaginal palpus slightly widening anteriorly *Chaetocnema psylloides* Pic

- Aedeagus in lateral view evenly and slightly curved. Mid section of tignum slightly curved. Ventral longitudinal groove in basal half of aedeagus well-developed, with sharp margins (Fig. 67 D). Anterior sclerotization of vaginal palpus shapeless..... *Chaetocnema rufofemorata* Pic
- Aedeagus in lateral view nearly straight. Mid section of tignum nearly straight. Ventral longitudinal groove in basal half of aedeagus well-developed, with obtuse margins (Fig. 73 D). Anterior sclerotization of vaginal palpus posteriorly as wide as anteriorly before apex..... *Chaetocnema shabalini* Palij
- 38(35). Posterior sclerotization of tignum Y-shaped, much wider than mid section (Fig. 40 E) *Chaetocnema imitatrix* Gruev
- Posterior sclerotization of tignum spoon-shaped, wider than mid section (Fig. 26 E) *Chaetocnema costulata* (Motschulsky)
- Posterior sclerotization of tignum widening into shapeless sclerite (Fig. 61 E) *Chaetocnema paganettii* Heikertinger
- Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening losing sharp border (Fig. 35 E).....
..... *Chaetocnema grandis* Pic
- Posterior sclerotization of tignum without particular shape, as wide as mid section (Fig. 67 E)..... 39
- 39(38). Aedeagus: middle part of longitudinal groove wider than apical; apical part of longitudinal groove narrower than basal (Fig. 39 D)
..... *Chaetocnema igori* Konstantinov et al.
- Aedeagus: middle part of longitudinal groove narrower than apical; apical part of longitudinal groove wider than basal (Fig. 67 D)
..... *Chaetocnema rufofemorata* Pic
- Aedeagus: middle part of longitudinal groove as wide as apical; apical part of longitudinal groove as wide as basal (Fig. 68 D).....
..... *Chaetocnema sahlbergii* (Gyllenhal)
- 40(25). Profemora yellow 41
- Profemora partly brown 42
- Profemora light brown 43
- Profemora brown 45
- 41(40). Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins (Fig. 43 D) *Chaetocnema kabakovi* Lopatin
- Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins (Fig. 77 D) *Chaetocnema tarsalis* Wollaston
- Ventral longitudinal groove in apical half of aedeagus shallow with sharp margins (Fig. 42 D) *Chaetocnema jelineki* Lopatin
- 42(40). Middle part of longitudinal groove of aedeagus wider than basal; apical denticle straight in lateral view (Fig. 57 D, E).....
..... *Chaetocnema nocticolor* Rapilly

- Middle part of longitudinal groove of aedeagus narrower than basal; apical denticle slightly curved dorsally in lateral view (Fig. 25 D)
 *Chaetocnema confusa* (Boheman)
- Middle part of longitudinal groove of aedeagus as wide as basal; apical denticle slightly curved ventrally in lateral view (Fig. 48 D).....
 *Chaetocnema leonhardi* Heikertinger
- 43(40). Protibia yellow. Antennomere 1 completely yellow. Elytral humeral callus well-developed. Large lateral denticle on metatibia obtuse 44
 Protibia partly brown. Antennomere 1 partly dark brown. Elytral humeral callus poorly developed. Large lateral denticle on metatibia sharp
 *Chaetocnema oblonga* Lopatin
- 44(43). Ventral surface of aedeagus lateral to median groove in middle flat, horizontal, at base convex; apical and middle parts of longitudinal groove narrower than basal (Fig. 17 D) *Chaetocnema bergeali* Konstantinov et al.
 Ventral surface of aedeagus lateral to median groove in middle flat, oblique, at base flat; apical and middle parts of longitudinal groove wider than basal (Fig. 57 D)..... *Chaetocnema nocticolor* Rapilly
- 45(40). Ventral longitudinal groove in middle of aedeagus well-developed, deep, with sharp margins (Fig. 10 D) 46
 Ventral longitudinal groove in middle of aedeagus well-developed, deep, with obtuse margins (Fig. 58 D, E)..... 48
 Ventral longitudinal groove in middle of aedeagus poorly developed, shallow, with obtuse margins (Fig. 11 D) 51
 Ventral longitudinal groove in middle of aedeagus shallow with sharp margins (Fig. 74 D).....*Chaetocnema sinuata* Weise
- 46(45). Ventral surface of aedeagus lateral to median groove apically convex (Fig. 10 D).....*Chaetocnema arenacea* (Allard)
 Ventral surface of aedeagus lateral to median groove apically flat, oblique (Fig. 78 D).....*Chaetocnema tbilisiensis* Konstantinov et al.
 Ventral surface of aedeagus lateral to median groove apically flat, horizontal (Fig. 12 D)..... 47
- 47(46). Antennomere 5 partly brown. Antennomere 1 completely yellow. Diameter of pronotal punctures subequal to distance between them. Metatibial serration proximal to large lateral denticle present, sharp
*Chaetocnema hortensis* (Geoffroy)
 Antennomere 5 completely brown. Antennomere 1 partly dark brown. Diameter of pronotal punctures 2 to 4 times smaller than distance between them. Metatibial serration proximal to large lateral denticle absent
*Chaetocnema aridula* (Gyllenhal)
- 48(45). Middle part of longitudinal groove of aedeagus wider than apical (Fig. 58 D)..... *Chaetocnema obesa* (Boieldieu)

- Middle part of longitudinal groove of aedeagus narrower than apical (Fig. 76 D)..... 49
- Middle part of longitudinal groove of aedeagus as wide as apical (Fig. 58 D, E, F)..... 50
- 49(48). Large lateral denticle on metatibia obtuse. Apical denticle of aedeagus in ventral view well differentiated, tall, wide, flat on top. Ventral surface of aedeagus lateral to median groove in middle flat, horizontal (Fig. 33 D) *Chaetocnema franzi* **Konstantinov et al.**
- Large lateral denticle on metatibia sharp. Apical denticle of aedeagus in ventral view well differentiated, short, flat on top. Ventral surface of aedeagus lateral to median groove in middle convex (Fig. 76 D)..... *Chaetocnema subcoerulea* (**Kutschera**)
- 50(48). Pro-, meso-, and metatibiae yellow. Diameter of pronotal punctures subequal to distance between them..... *Chaetocnema hortensis* (**Geoffroy**)
- Pro-, meso-, and metatibiae partly brown. Diameter of pronotal punctures 2 to 4 times smaller than distance between them *Chaetocnema mannerheimii* (**Gyllenhal**)
- 51(45). Pro-, meso-, and metatibiae yellow. Metatibial serration proximal to large lateral denticle absent *Chaetocnema arida* **Foudras**
- Pro-, meso-, and metatibiae partly brown. Metatibial serration proximal to large lateral denticle present, obtuse *Chaetocnema montenegrina* **Heikertinger**

Taxonomic Treatment of the *Chaetocnema* Species of the Palearctic Region

Chaetocnema aerosa (Letzner)

Fig. 7, Map 1

aerosa Letzner 1847:84 (type locality: "Silesia" [see Letzner 1892:417]; type depository: ZMHB); as *Haltica* (*Plectroscelis*)

punctatissima Graëlls 1858:96 (type locality: San Lorenzo de El Escorial, Spain, "El Escorial"; type depository: unknown); as *Plectroscelis*; Heikertinger 1951:212 (synonymized); as *Plectroscelis*

laevilinea J. Sahlberg 1903:34 (as variety of *aerosa*; type locality: Egypt, "In littore Nili prope urbem Cairo"; type depository: unknown); Heikertinger 1951:212 (synonymized)

Distribution: Austria (Redtenbacher 1849), Belgium (Derenne 1963), Bosnia and Herzegovina (Gruev 1992), Belarus (Lopatin 1986), Croatia, Czech Republic (Čížek 2006), Egypt (Alfieri 1976), England (Henderson 1961), Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Germany (Weise 1888), Hungary (Vig 1996), Israel (Furth 1985), Latvia (Pūtele 1971), Luxembourg, Montenegro (Gruev 1992), Netherlands (Beenen & Winkelman 1997), Norway (Klefbeck & Sjöberg 1957), Poland (Bartkowska 1994), Russia (Daghestan, Karelia, European part) (Konstantinov 1988), Slovakia, Spain, Sweden, Switzerland (Stierlin 1866), Turkey (Gruev & Döberl 1997), Ukraine.

Host plants: *Eleocharis ovata* (Čížek et al. 1995); *E. palustris* (Doguet 1994); *Scirpus ovatus* (Heikertinger 1951); Cyperaceae (Biondi 1990a).

Description: Body length (excluding head) 1.83–1.91 mm; width 1.00–1.07 mm. Ratio of elytron length at suture to maximum width, 2.94–2.95. Ratio of pronotum width at base to length at middle, 1.37–1.39. Ratio of length of elytron at suture to length of pronotum at middle, 2.55–2.58. Ratio of width of both elytra at base to width of pronotum at base, 1.17–1.18. Ratio of maximum width of both elytra to maximum width of pronotum, 1.40–1.47.

Elytron copperish without yellow, rarely bronzy without yellow. Pronotum copperish. Antennomere 1–3 completely yellow. Antennomere 4 partly brown. Anten-

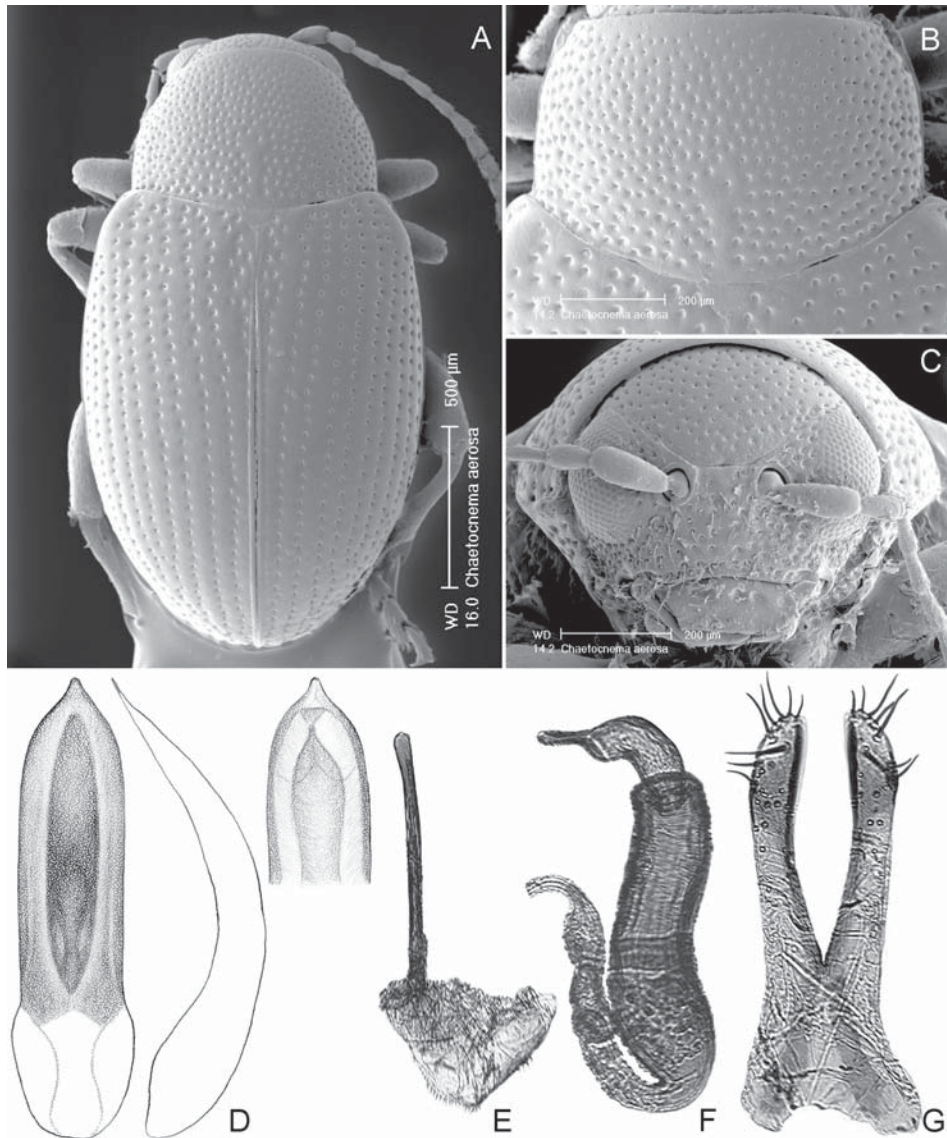
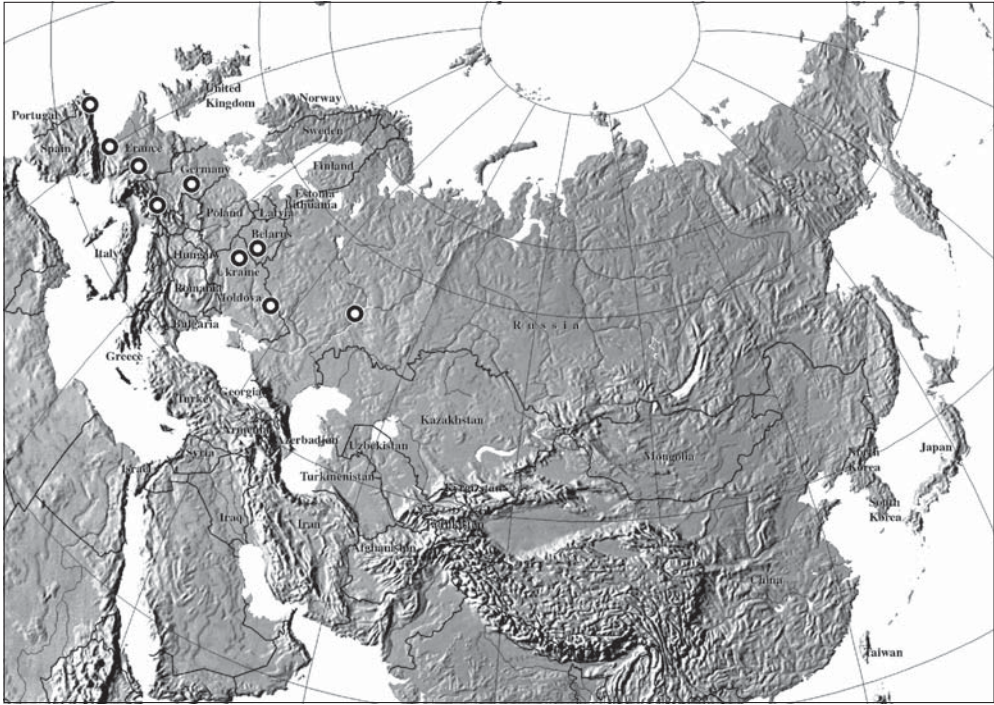


Figure 7. *Chaetocnema aerosa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

nomere 5 completely brown. Protibia yellow or partly brown. Meso-, metatibia yellow or partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight with notch in middle. Ratio of width of frontal ridge between outer ridge of antennal



Map 1. *Chaetocnema aerosa*

sockets to width of antennal socket (including surrounding ridge), 1.42–1.48. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base slightly expanded in middle. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures larger or subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.17–1.18. First and second male protarsomere length to length ratio, 1.67–1.68. First and second male protarsomere width to width ratio, 1.25–1.28. Length of metatibia to distance between denticle and metatibial apex, 2.47–2.49. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex

in dorsal view. First male metatarsomere length to width ratio, 2.00–2.03. First male protarsomere maximum width to width at base ratio, 3.33–3.35. First and second male metatarsomeres length to length ratio, 1.77–1.79. First and second male metatarsomere width to width ratio, 1.00–1.05. Third and fourth male metatarsomere length to length ratio, 1.73–1.76.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove at base, middle, and apex of aedeagus well-developed, deep, with sharp margins. Apical and middle part of longitudinal groove as wide as basal; middle part as wide as apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum arrow-shaped, not much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly; slightly and evenly curved along length; broadly rounded at extreme anterior end. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema aerosa* can be separated from most Palearctic *Chaetocnema* species based on the relatively regular elytral striae near the suture and the shape of the aedeagus with a long ventral longitudinal groove which is wide in the middle, narrowing apically and basally. *Chaetocnema sahlbergi* has a similar aedeagus, but its apex is wider than in *C. aerosa* and the groove is wider compared to the distance between the groove and the lateral side of the aedeagus.

Material: AUSTRIA: 1) Tirol, Lechaschen, May 1995, leg. Golkowski (1 BCPF); BELARUS: 1) Belarus': Gomel' terr., Turov env. 16.VI.1980, 52°04'00"N 27°44'00"E, leg. A. Konstantinov, 2) *Chaetocnema aerosa* (Letzner), det. A. S. Konstantinov, 2009 (1 USNM); 1) Belarus': Gomel' terr. Turov env. 11.VI.1980 52°04'00"N 27°44'00"E, wet meadows, swamp, leg. A. Konstantinov, 2) *Chaetocnema aerosa* (Letzner) det. A. S. Konstantinov, 2009 (2 USNM); 1) Gomel' oblast' rybhoz Beloe, 22.VI.1980 leg. Konstantinov, 2) *Chaetocnema aerosa* Letzner, Konstantinov det. (1 USNM); CROATIA: 1)

Dalmat., Montenegro, Krivosije, leg. Paganetti, 2) *Chaetocnema aersa*, Heikertinger det. (3 BMNH). FRANCE: 1) Antully, June 24, 1991, leg. M. Bergeal (1 BCPF); 1) Landes, Brocas Perrouat Lagunes, July 5, 1997, leg. F. Bameul (2 BCPF); 1) Le Creusot (1 BMNH); 1) Le Creusot, leg. St. Claire-Deville (1 BCPF); 1) Navarosse, March 19, 1951 (3 BCPF); 1) near Dijon, ? Le Creusot, S' Claire Deville (3 NHMW); GERMANY: 1) ? : Gollachosth. 7204 (3 ZSMC); RUSSIA: 1) Ulyanovsk, Popov ostrov, 9.IX.1951, leg. A. Lubischew, 2) *Chaetocnema aersa* Letzner, A. Lubischew det. (1 USNM); 1) Ulyanovsk, Zakhar., Rudnik -Polivna, 25.VIII.1952. 21, leg. A. Lubischew, 2) *Chaetocnema aersa* Letzner, A. Lubischew det. (1 ZMAS); SPAIN: 1) Lugo, Cospeito, 23-VIII-2001, leg. Baselga, 2) *Chaetocnema aersa* Letz., Baselga det. (1 BASC); UKRAINE: 1) Poltava, May 7 & May 14, 1928, leg. Ogloblin, 2) *Chaetocnema aersa*, Ogloblin det. (2 BMNH); 1) Kiev, Dnepr IV.924, 2) *Chaetocnema aersa* Letzn, D. Ogloblin det. (1 USNM).

***Chaetocnema afghana* Gruev**

Fig. 8, Map 2

afghana Gruev 1988a:155 (type locality: Afghanistan, "Nangarhar, Band-e-Darunta, 590m"; type depository: HHNM)

Distribution: Afghanistan (Gruev 1988a).

Host plants: unknown.

Description: Body length (excluding head) 1.96 mm; width 1.13 mm. Ratio of elytron length at suture to maximum width, 2.42. Ratio of pronotum width at base to length at middle, 1.47. Ratio of length of elytron at suture to length of pronotum at middle, 2.52. Ratio of width of both elytra at base to width of pronotum at base, 1.13. Ratio of maximum width of both elytra to maximum width of pronotum, 1.45.

Elytron greenish without yellow. Pronotum greenish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur light brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.87. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic cal-

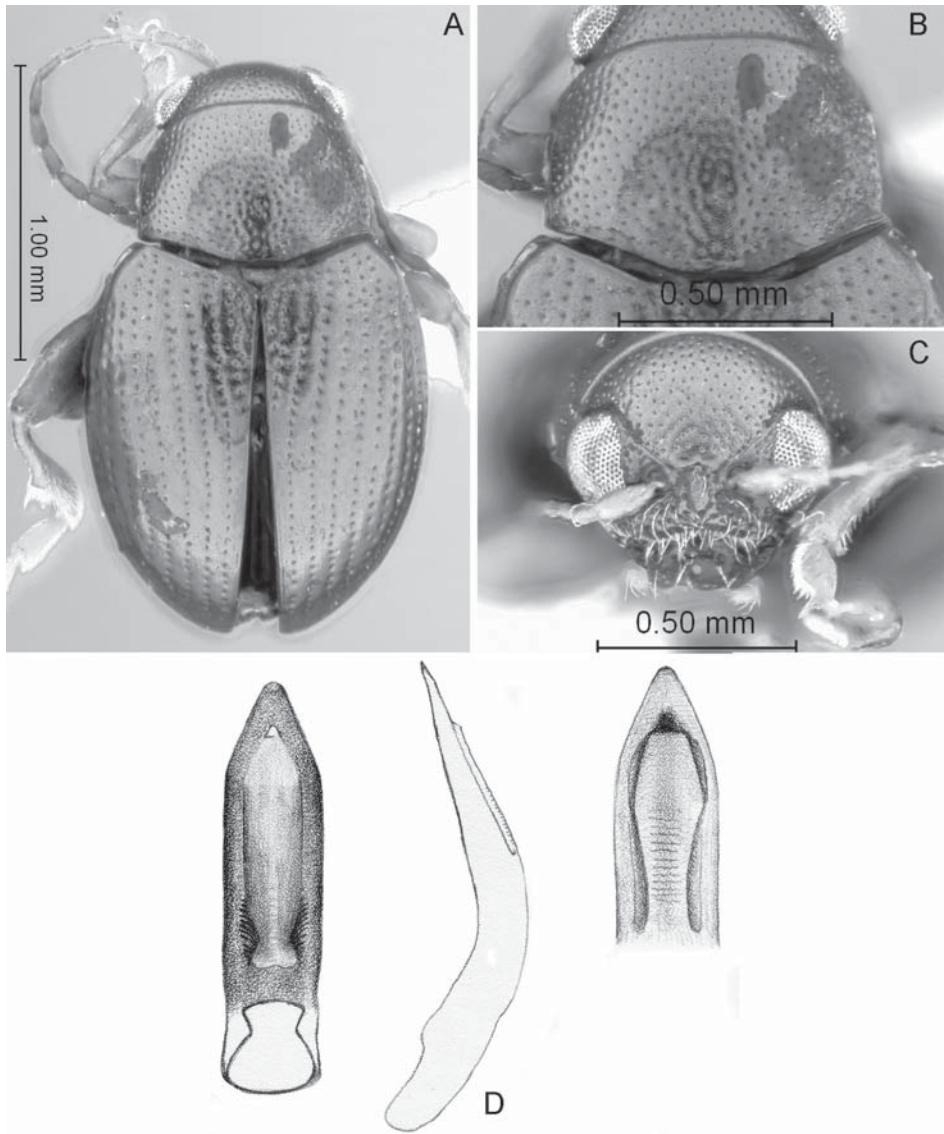
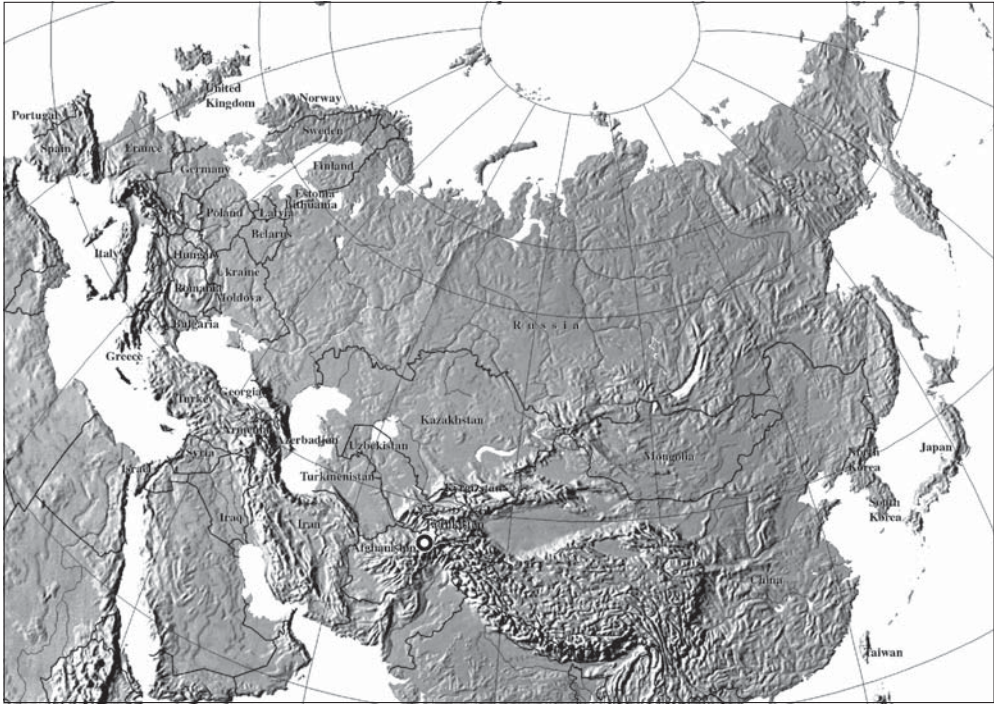


Figure 8. *Chaetocnema afghana*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

osity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.



Map 2. *Chaetocnema afghana*

First male protarsomere length to width ratio, 1.21. First and second male protarsomere length to length ratio, 1.46. First and second male protarsomere width to width ratio, 1.44. Length of metatibia to distance between denticle and metatibial apex, 2.28. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.60. First male protarsomere maximum width to width at base ratio, 2.33. First and second male metatarsomere length to length ratio, 1.36. First and second male metatarsomere width to width ratio, 1.50. Third and fourth male metatarsomere length to length ratio, 2.37.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; well-developed, deep, with sharp margins medially; well-developed with obtuse margins basally. Apical part of longitudinal groove as wide as basal. Middle part of longitudinal groove wider than basal; as wide as apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle

of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent from apical part. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated basally.

Remarks: *Chaetocnema afghana* can be easily separated from other Palearctic species by its unique aedeagus with the sides nearly perfectly parallel to each other and the apex lacking a well-developed apical denticle.

Type material: *Chaetocnema afghana*: Paratype, male. 1) Afghanistan, Nangarhar, Band-e, Darunta, 590m, 2) No.86, 8.5.1974, Leg. L. Papp, 3) *Chaetocnema afghana* Gruev, det. B. Gruev, 4) Paratype, 5) Konstantinov (1 USNM).

***Chaetocnema angustula* (Rosenhauer)**

Fig. 9, Map 3

angustula Rosenhauer 1847:62 (type locality: Austria, "bei Glurns in Tyrol auf Wiesen gefunden"; type depository: MNHN; lectotype designated by Doguet 1989:191); as *Plectroscelis alpicola* Weise 1886:767 (as variety of *angustula*; type locality: Austria, "südliches Tirol, Manuel"; type depository: ZMHB); Heikertinger 1951:214 (synonymized)

aeneicolor Pic 1915a:5 (as variety of *angustula*; type locality: "Italie: Santa-Maria en Piemont"; type depository: MNHN; lectotype designated here); Heikertinger 1951:214 (synonymized)

Distribution: Austria (Redtenbacher 1874), France (Foudras 1860), Germany (Weise 1886), Italy (Biondi 1990a), Slovenia, Spain (Petitpierre 1994), Switzerland (Stierlin 1886).

Host plants: Grasses (Petitpierre 1994).

Description: Body length (excluding head) 1.84–2.08 mm; width 0.91–1.17 mm. Ratio of elytron length at suture to maximum width, 3.00–3.01. Ratio of pronotum width at base to length at middle, 1.32–1.45. Ratio of length of elytron at suture to length of pronotum at middle, 2.13–2.24. Ratio of width of both elytra at base to width of pronotum at base, 1.00–1.01. Ratio of maximum width of both elytra to maximum width of pronotum, 1.04–1.05.

Elytron bronzish without yellow, rarely greenish without yellow. Pronotum bronzish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.59–2.61. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

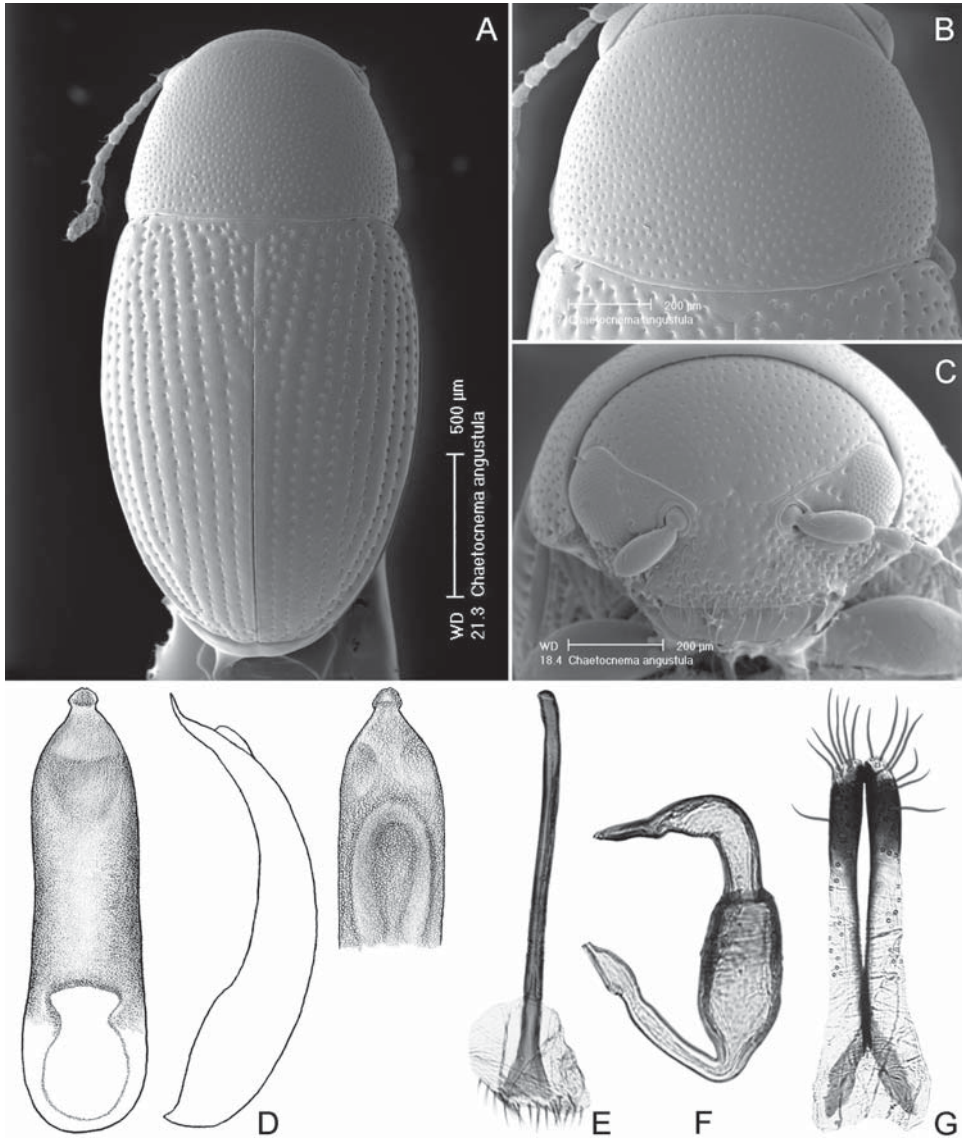
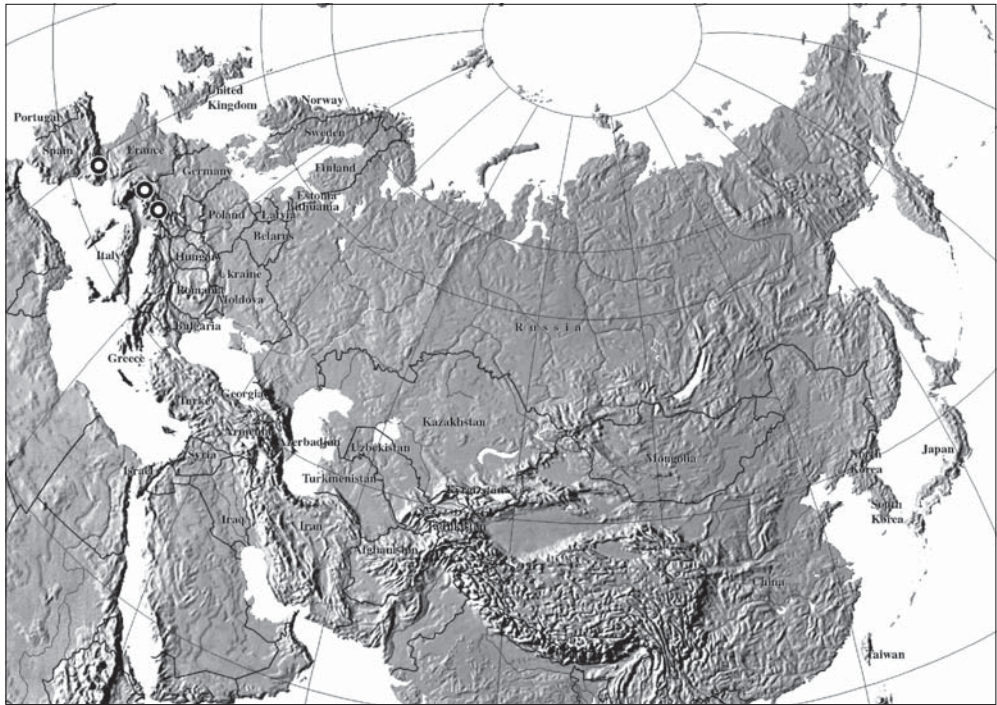


Figure 9. *Chaetocnema angustula*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity on same level as lateral margin. Postero-



Map 3. *Chaetocnema angustula*

lateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus poorly developed.

First male protarsomere length to width ratio, 1.28–1.32. First and second male protarsomere length to length ratio, 1.28–1.42. First and second male protarsomere width to width ratio, 1.48–1.52. Length of metatibia to distance between denticle and metatibial apex, 2.02–2.06. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.68–1.72. First male protarsomere maximum width to width at base ratio, 2.38–2.42. First and second male metatarsomere length to length ratio, 1.61–1.65. First and second male metatarsomere width to width ratio, 1.35–1.39. Third and fourth male metatarsomere length to length ratio, 1.55–1.57.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove absent from aedeagus. Apical

denticle of aedeagus in ventral view ogival in shape, strongly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, approximately parallel-sided. Anterior sclerotization of vaginal palpus ensiform. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema angustula* is one of a few flightless species of Palearctic *Chaetocnema*. Its aedeagus is unique in lacking the ventral longitudinal groove basally and in the middle and having a mushroom shaped apical denticle. The spermatheca of *C. angustula* is also unusual in having the receptacle not making an s-shaped twist and the pump being almost as long as the receptacle.

Type material: *Chaetocnema angustula*: Lectotype, female: 1) Tyrol; 2) Ex Museo Rosenhauer; 3) *angustula* Rosenh.; 4) Museum Paris, ex. Coll. R. Oberthur Rosenhauer; 5) Lectotype *Chaetocnema angustula* Rosenh, S. Doguet des. 89 (MNHN).

Chaetocnema aeneicolor: Lectotype, female. 1) Sta Maria ? Italie; 2) type; 3) v. *aeneicolor* Pic; 4) Museum Paris, Coll. M. Pic; 5) Lectotype *Chaetocnema aeneicolor* Pic, des. A. S. Konstantinov et al. 2009 (MNHN).

Material: AUSTRIA: 1) ? Steiermark, Stuhleck Coll. Wingelmuller, 2) *Chaetocnema angustula*, Heikertinger det. (1 NHMW); 1) ? Stuhleck. St. A. Winkler, 2) *Chaetocnema angustula*, Heikertinger det. (2 NHMW); 1) Stuhleck, Styr. Pazourak (1 BMNH); 1) Wien, Dr. Melichar, 2) Dr. Melichar, 3) B. Harnfelt coll., Sweden or Germany?, Brooklyn Museum, Coll. 1929, 4) *angustula* Rosh. (1 USNM); FRANCE: 1) Aubisque, Tourmalet, Pas de la Case, Gourdon Murat, Coissac Bugeat, June, July, August, leg. M. Bergeal (15 BCPF); 1) Eoinal [Could be Epinal?], leg. S. C. Deville (1 BMNH); 1) Foret de Bragues, Ariège, 30.VII.1967, leg. S. Doguet, 2) *Chaetocnema angustula*, Doguet det. (1 ZSMC); 1) Gourdon Murat, Coissac, 26 May 1995, leg. M. Bergeal (4 BCPF); 1) le Longeroux, 19- 18 VIII 85, M. Bergeal, 2) *Chaetocnema angustula* Ros., N2'98. (1 BCPF); 1) Pyrénées Atlant., Pic d'Orry N-E., 16-1800 m., 29-V-66 G. Tempère, 2) *Chaetocnema angustula* Rosh, N6 (1 USNM); 1) Pyr. Or. Massif du Madres., 12.7.1983, S. Doguet, 2) *Chaetocnema angustula* Rosh., S. Doguet det. 84 (1 USNM); SWITZERLAND ?: 1) Kirsch, 2) *Plectroscelis angustula* Trient., 3) *angustula*, 4) blank blue label, 5) 1953 Coll., Heikertinger (1 NHMB).

***Chaetocnema arenacea* (Allard)**

Figs. 3A, 10, Map 4

arenacea Allard 1860:569 (type locality: "Cette espèce a été prise à Bordeaux, par M. Condat, et en Espagne, par M. Perris"; type depository: MNHN; lectotype designated by Doguet 1989:191); as *Plectroscelis*

Distribution: Albania, Algeria, Armenia, Austria, Bulgaria, Croatia (Gruev 1992), France (Doguet 1994), Greece (Heikertinger 1951, Gruev 1990a), Hungary (Vig 1996), Italy (Biondi 1989), Morocco (Jolivet 1967), Portugal (Baselga & Novoa 2003), Romania (Gruev et al. 1993), Russia (Daghestan), Serbia (Gruev 1992), Slovakia, Spain (Bastazo et al. 1993), Switzerland, Turkey (Gruev & Kasap 1985), Ukraine (Crimea) (Konstantinov 1988).

Host plants: *Poa pratensis*, *Bromus mollis*, and *B. tectorum* (Nonveiller 1960, 1978)

Description: Body length (excluding head) 2.02–2.50 mm; width 1.30–1.52 mm. Ratio of elytron length at suture to maximum width, 2.43–2.48. Ratio of pronotum width at base to length at middle, 1.15–1.55. Ratio of length of elytron at suture to length of pronotum at middle, 2.65–2.80. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.28–1.29.

Elytron bronzyish without yellow. Pronotum bronzyish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–3 completely yellow. Antennomere 4–5 partly brown. Pro-, meso-, metatibia yellow or partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.32–2.34. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.23–1.27. First and second male protarsomere length to length ratio, 2.23–2.27. First and second male protarsomere

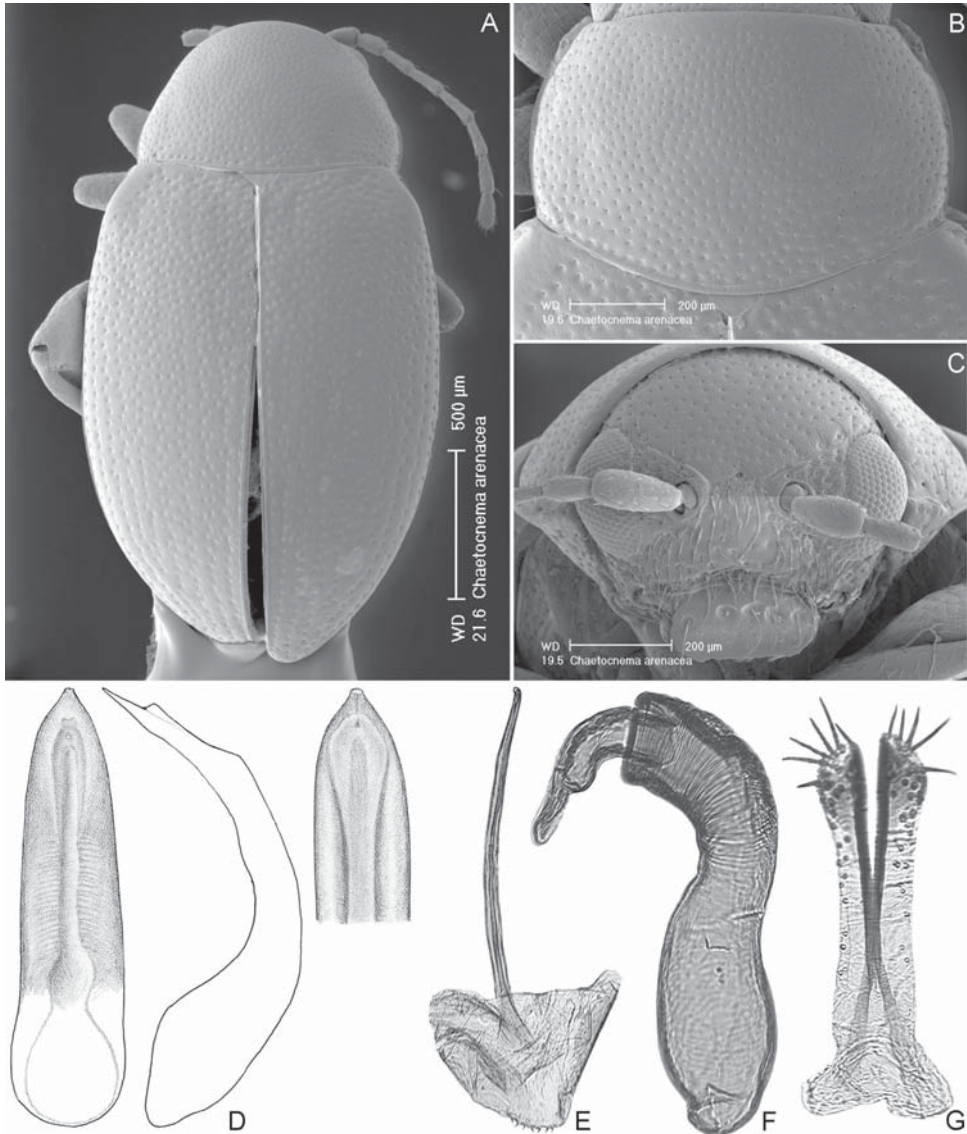
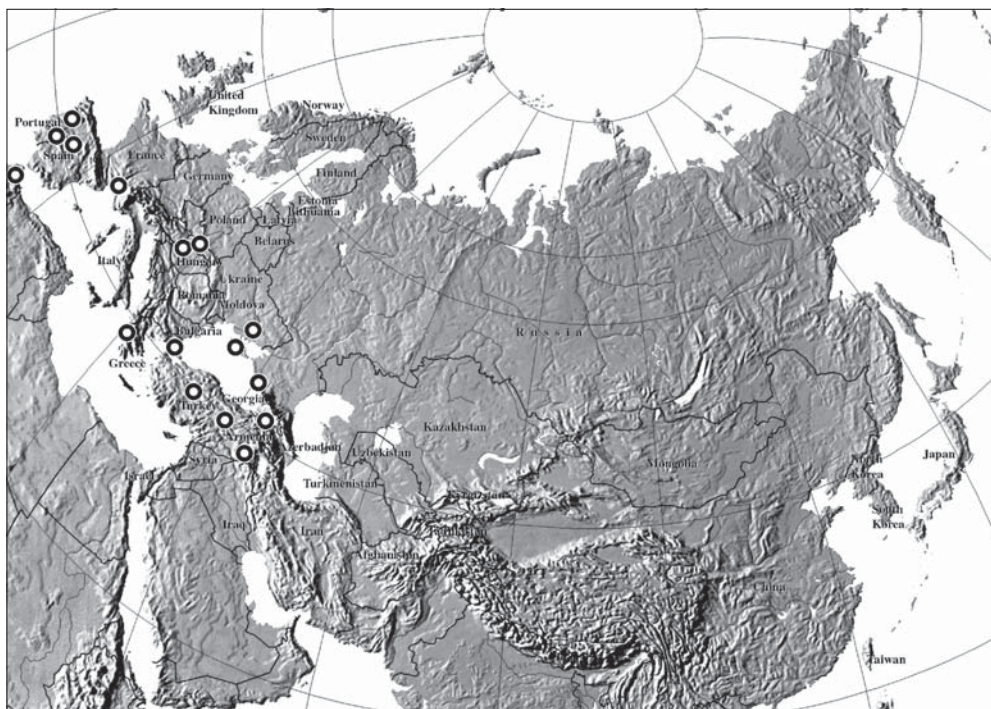


Figure 10. *Chaetocnema arenacea*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

width to width ratio, 1.53–1.57. Length of metatibia to distance between denticle and metatibial apex, 2.30–2.34. Large lateral denticle on metatibia obtuse, rarely sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.38–2.42. First male protarsomere maximum width to width at base ratio, 2.65–2.69.



Map 4. *Chaetocnema arenacea*

First and second male metatarsomere length to length ratio, 1.66–1.70. First and second male metatarsomere width to width ratio, 1.09–1.13. Third and fourth male metatarsomere length to length ratio, 1.91–2.01.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically convex; flat, oblique at middle; convex basally. Ventral longitudinal groove at base, middle, and apex of aedeagus well-developed, deep, with sharp margins. Apical part of longitudinal groove wider than basal. Middle part of longitudinal groove as wide as basal; narrower than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent on apical side. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle

wider than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly with sinusoidal curvature. Anterior end of anterior sclerotization indeterminate or nearly flat. Length of posterior sclerotization about as great as width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema arenacea* is similar to *C. tbilisiensis* sp. nov. based on a variety of external features. Both species can be separated from most Palearctic species based on the shape of the aedeagus, with the ventral groove widening towards apex and with the sides covered with transverse wrinkles from the base to and beyond middle. *Chaetocnema arenacea* can be differentiated from *C. tbilisiensis* based on the relatively narrow aedeagus (it is more robust in *C. tbilisiensis*) with the apex being straight in lateral view (it is strongly bent dorsally in *C. tbilisiensis*).

Type material: *Chaetocnema arenacea*: Lectotype, male: 1) Madrid, 2) Ex Musaeo E. Allard, 1899, 3) Museum Paris ex Coll. R. Oberthur, 4) Lectotype *Chaetocnema arenacea* Allard, S. Doguet des. 89 (MNHN).

Material: ARMENIA: 1) Armenia: 8 km E. Areni valley 28.V.1999, leg. A. Konstantinov (2 USNM); 1) Armenia: Zangezur mountains, 1925 m sub alp. meadow Lusashakh 27.V.1999, 39°51'65"N 44°56'26E, leg. A. Konstantinov (2 USNM); 1) Armenia, env. Erevan, Dzhervezh, 21.VI.1987, leg. V. Karasev, 2) *Chaetocnema arenacea* (Allard), det. A. S. Konstantinov, 2009 (1 USNM); FRANCE: 1) Avignon, Rhone, 2) France, A. Chobaut, 3) *Chaetocnema aridula* Gyll., I. K. Lopatin det 1976, 4) *Chaetocnema arenacea* (Allard), det. A. S. Konstantinov, 2009 (1 USNM); 1) Var, ? Cogolin (var), S' Cl. Deville, Claire-Deville Provence., 2) *Chaetocnema arenacea*, Heikertinger det. (1 NHMW); GREECE: 1) Corfu, Paganetti, 2) *Chaetocnema arenacea* (2 USNM); HUNGARY: 1) Budapest, Hungaria (1 USNM); MOROCCO: 1) Taourirt N'tini (1 BCPF); PORTUGAL: 1) Beira Baixa, Serra de Estrela (Road Belmonte-Sabugal), April 30, 1996, leg. M. Bergeal (1 BCPF); 1) Tras-os-Montes, Mogadouro, Variz, 21-VI-2001, leg. Baselga, 2) *Chaetocnema arenacea* (All.), Baselga det. (5 BASC); RUSSIA: Male? 1) S, 2) Caucasus occ., Soči-env., Macesta, J. Strejček lgt., 3) VI.1967, 416, 4) *Chaet. ?arenacea* (1 USNM); SLOVAKIA: 1) Slov. m. 10.7.54, Štúrovo, Strejček, 2) *arenacea*, J. Král, det. 78, 3) *Chaet. arenacea*, J. Král det. 83 (1 USNM); 1) Slov. m. 5.6.60, Čenkov, Strejček, 2) *Ch. arenacea*, I. K. Lopatin det. 196_ (1 USNM); SPAIN: 1) Madrid, Aranjuez, VII-1906, 2) *Chaetocnema arenacea* (All.), Baselga det. (1 MNCN); 1) Madrid, Navacerrada, 2) *Chaetocnema arenacea* (All.), Baselga det. (13 MNCN); 1) Madrid, Villaviciosa de Odón, 10-VI-1921, 2) *Chaetocnema arenacea* (All.), Baselga det. (13 MNCN); TURKEY: 1) Hakari, S. Beytisebap (2200 m), June 26, 1985, leg. W. Schacht (2 BCPF); 1) Turkey. Cappadocia, env. Urgüp hills, 16.VI.1999, leg. A. Konstantinov (7 USNM); 1) Turkey. Cappadocia, env. Urgüp, Mustafapasha, 16.VI.1999, dry swamp,

leg. A. Konstantinov (7 USNM); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov (1 USNM); 1) Turkey: Road 38-54 between Mustafapasa & Cemil, 5-10 km S. Mustafapasa, sweeping around pond, 15 June 1999, Lingafelter, 2) *Chaetocnema arenacea* (All.), A. Baselga 2009 (10 USNM); 1) Turkey: 60-65km N. Aksaray, along HWY E90 to Ankara, Margin of Tuz Golu: 18 June 1999, 38°30'N, 33°30'E: sweeping, S. Lingafelter (1 USNM); 1) Turkey: Road to Malatya, 38°28.49'N, 38°56.45'E, June 9, 1999: Sweeping, Steve Lingafelter, Coll. (2 USNM); 1) Turkey: Ürgüp environs, 38°38'00"N, 34°56'00"E, 1-5 Km S. Ürgüp on road 38-54: 15 June 1999, Steven W. Lingafelter (6 USNM); Male (at least 1 of 5). 1) Turkey: 17km N. Nevsehir on road 765: 1300 m (Tarimi Parki) 38°59.14'N 34°51.77'E: 13 June 1999, Steven Lingafelter, Coll. (5 USNM); 1) Edirne, Turcia, 8.-13. VI. 1947, Exp. N. Mus. CSR, 2) *Chaetocnema ?nocticolor* Rap, det I. Lopatin, 3) *Chaetocnema arenacea* (Allard), det. A. S. Konstantinov, 2009 (1 USNM); 1) Turkey: Road 38-54 between Mustafapasa & Cemil, 5-10 km S. Mustafapasa, sweeping around pond, 15 June 1999: Lingafelter, 2) *Chaetocnema*, Det. S. W. Lingafelter, 3) *Chaetocnema arenacea* (All.), A. Baselga 2009 (1 USNM); 1) Turkey: 5 km N. Gülşehir (Road 765): June 15, 1999, 38°45'00"N 34°38'00"E, Sweeping along Kizilirmak Riv., Steve Lingafelter, coll., 2) *Chaetocnema arenacea* (All.), A. Baselga 2009 (3 USNM); UKRAINE: 1) *Ch. arida*, Ascania Nova, 2.VII. S.M., 2) *Chaetocnema arida* Fdr., det I. Lopatin, 1986, 3) *Chaetocnema arenacea* (Allard), det. A. S. Konstantinov, 2004 (1 USNM); 1) Simferopol', dol Salgira, 15.VIII.1951, 2) *Chaetocnema arenacea* All., S. Mosiakin det, 3) *Ch. arenacea* All. det. Konstantinov, 4) *Chaetocnema arenacea* (Allard), = LT, det A. S. Konstantinov 2003 (1 USNM); 1) Simferopol', na stene, 24.XI.1951, I. Maltsev, 2) *Chaetocnema aridula* Gyll., I. K. Lopatin det 1970, 3) *Chaetocnema arenacea* (Allard), det. A. S. Konstantinov, 2009 (1 USNM); 1) Simpheropol, Krim 30.VI.1907, Kiritschenko (1 ZMAS); okr. Simferopol', Crimea, Graftio, VII-VIII.1898, 2) *Chaetocnema arenacea* All., I. Lopatin det., 1961 (2 USNM).

***Chaetocnema arida* Foudras**

Fig. 11, Map 5

arida Foudras 1860:234 (type locality: "France"; type lost *teste* Doguet 1994)

aestiva Weise 1888:775 (as variety of *arida*; type locality: Germany, "Berlin, Schlesien"; type depository: ZMHB); Heikertinger 1951:212 (synonymized)

surcoufi Pic 1915b:41 (type locality: "Algérie: Littre"; type depository: MNHN); Heikertinger 1951:212 (synonymized)

Distribution: Algeria, Austria, Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1992), Croatia (Gruev 1979), Czech Republic, Egypt (Alfieri 1976), England, France (Doguet 1994), Germany (Weise 1888), Greece (Heikertinger 1951, Gruev 1990a), Hungary (Vig 1996), Italy (Biondi

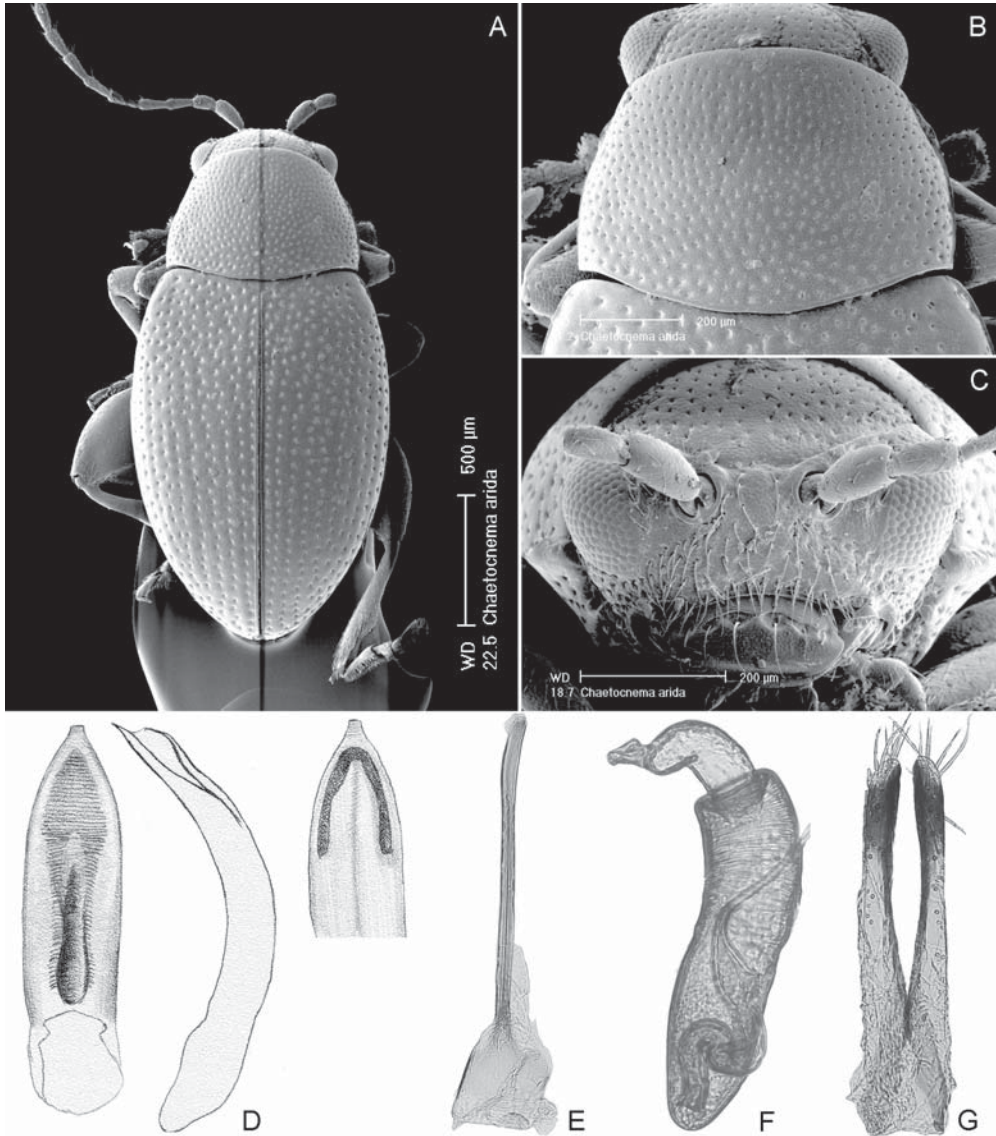
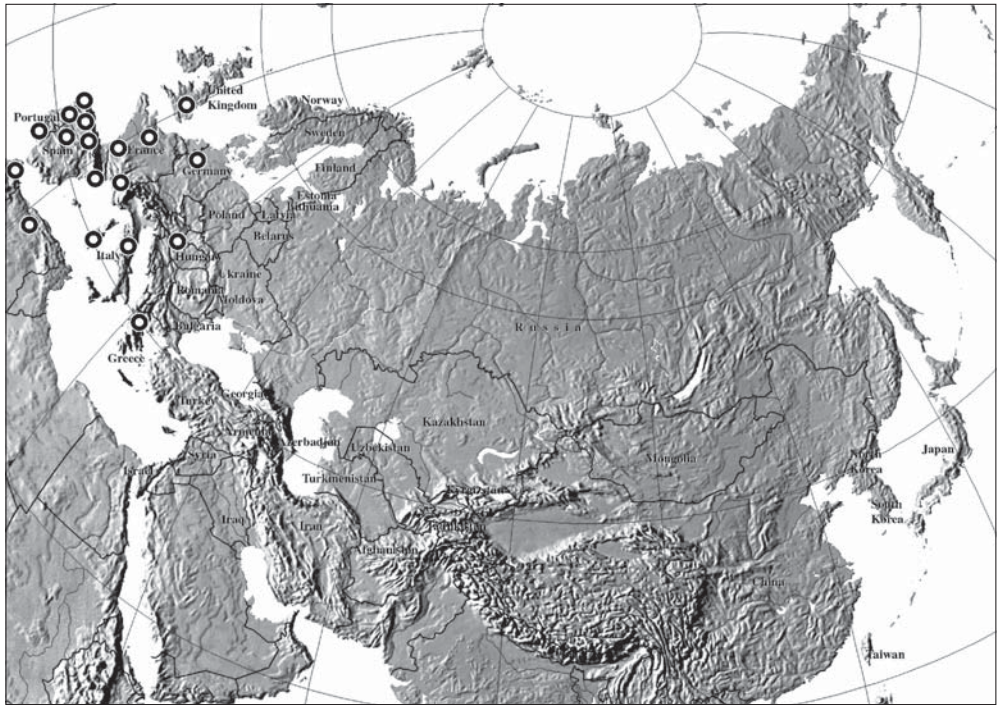


Figure 11. *Chaetocnema arida*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

1990a, 1990b), Latvia (Pūtele 1971), Liechtenstein, Luxembourg, Macedonia, Morocco (Jolivet 1967), Netherlands, Poland (Wasowska 1991), Portugal, Romania (Gruev et al. 1993), Russia (Lopatin 1960), Serbia (Gruev 1979), Slovakia, Slovenia (Gruev 1979), Spain (Gruev & Döberl 1997), Switzerland (Stierlin 1886), Tunisia, Ukraine (Crimea) (Konstantinov 1988).



Map 5. *Chaetocnema arida*

Host plants: *Carex* sp., *Juncus* sp. (Fogato & Leonardi 1980; Doguet 1994), and *Hordeum vulgare* (Goodlife 1941).

Description: Body length (excluding head) 1.78–1.89 mm; width 0.95–1.13 mm. Ratio of elytron length at suture to maximum width, 2.38–2.63. Ratio of pronotum width at base to length at middle, 1.32–1.35. Ratio of length of elytron at suture to length of pronotum at middle, 2.55–2.61. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.09. Ratio of maximum width of both elytra to maximum width of pronotum, 1.21–1.22.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 completely yellow, rarely partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.27–1.29. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.33–1.42. First and second male protarsomere length to length ratio, 1.59–1.63. First and second male protarsomeres width to width ratio, 1.14–1.18. Length of metatibia to distance between denticle and metatibial apex 1.61–1.79. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.00–2.22. First male protarsomere maximum width to width at base ratio, 2.14–2.18. First and second male metatarsomere length to length ratio, 1.38–1.44. First and second male metatarsomere width to width ratio, 1.13–1.17. Third and fourth male metatarsomere length to length ratio, 1.69–1.73.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; well-developed with sharp margins in basal half. Apical part of longitudinal groove wider than basal. Middle part of longitudinal groove narrower than basal and apical portions. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus usually present, rarely absent; present and wider on apical part. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, approximately parallel-sided. Anterior sclerotization of vaginal palpus amorphous. Anterior sclerotization of vaginal palpus nearly straight; anterior end indeterminate. Length of posterior

sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema arida* can be separated from most Palearctic species based on the aedeagus with its ventral side covered with transverse wrinkles throughout its entire length. The wrinkles on the apical part of the aedeagus cover not only the sides of the aedeagus, but also the middle. This character is consistent for all specimens of this species across its entire range.

Material: ALGERIA: 1) Di. Mahouna, Guelma (Algerie), M. Bergeal 4 IV 85, 2) *Chaetocnema arida* Foud., S. Doguet det. 81, 3) Collection, M. Bergeal, Versailles, 4) *Chaetocnema arida* (Foudras), det. A. S. Konstantinov, 2004 (1 BCPF); FRANCE: 1) Cavignac, June 12, 1956 (1 BCPF); 1) Lardy, Rambouillet, St. Lambert, Bugeat, Etg. St. Quentin, April-August, leg. M. Bergeal (20 BCPF); 1) Port-Cros, leg. Mol. de Boissy (5 BCPF); 1) Alpes Maritimes, Embouchure du Loup [Outlet of river Loup] (Alp M.), leg. St. Claire-Deville (1 BMNH); GERMANY: 1) Marburg, Styr., Lang, 2) blank blue label, 3) *arida*, 4) 1953 Coll., Heikertinger (1 NHMB); GREECE: 1) Epire Korytiani (Saulaie), June 7, 1997, leg. B. et M. Bergeal (3 BCPF); 1) Epire Metsovo (1200 m), June 8, 1997, leg. B. et M. Bergeal (2 BCPF); 1) Macedonia (Col. Samarina-Fourkas), June 7, 1997, leg. B. et M. Bergeal (1 BCPF); HUNGARY: 1) Hu. Com. Vas, Szocse, tozeglapp rostalas, 1961. XI.15, leg. Endrody-Kaszab, 2) *Chaetocnema arida*, Gruev det. (1 ZSMC); 1) Hu. Vos. m. Scakonyfalu, 250m, fuhdlo, 1980.V.17., leg. Merkl, O., 2) *Chaetocnema arida*, Gruev det. (1 ZSMC); ITALY: 1) ? Holdhaus, Ins. Elba, 2) *Chaetocnema arida*, Heikertinger det. (1 NHMW); 1) Mte. Argentario, Dr. Slotz 4.1907, 2) *Chaetocnema arida*, Heikertinger det. (1 NHMW); 1) L'Aquila, ? Castel di Sangro, 2) *Chaetocnema arida*, Heikertinger det. (6 NHMW); 1) Ala dei Sardi, sard. V.07., T. Derosas, 2) ex Coll. Dodaro, 3) blank blue label, 4) Zyohl nur, Form von, *arida*, 5) 1953 Coll., Heikertinger (1 NHMB); MOROCCO: 1) M. Atlas (2000 m), July 18, 1993, leg. Stoben (1 BCPF); PORTUGAL: 1) Setubal: Serra de Arrabida, April 27, 1996, leg. M. Bergeal (1 BCPF); 1) Tras-os-Montes, Mogadouro-Castelo Branco, 20-VI-2001, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Tras-os-Montes, Mogadouro-Variz, 21-VI-2001, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (5 BASC); SPAIN: 1) Granja (1 BMNH); 1) No data (2 BMNH); 1) Soria (2 BMNH); 1) A Coruña, Aranga, 15-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) A Coruña, Baldaio, 06-VII-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Bergondo-Fiobre, 01-III-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Bergondo-Fiobre, 18-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (5 BASC); 1) A Coruña, Cecebre, 15-VIII-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Corrubedo-Vixán, 29-IX-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (5 BASC); 1) A Coruña, Dodro, 26-IV-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (9 BASC); 1) A Coruña, Dodro, 30-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (14 BASC); 1) A Coruña, Lavacolla, 03-II-1997,

leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (9 BASC); 1) A Coruña, Lavacolla, 05-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) A Coruña, Lavacolla, 10-V-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Lavacolla, 13-V-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (6 BASC); 1) A Coruña, Lavacolla, 24-IV-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) A Coruña, Lavacolla, 24-V-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (9 BASC); 1) A Coruña, Lavacolla, 26-V-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Lavacolla, 26-VI-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Lavacolla, 28-V-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) A Coruña, Melide, 05-VI-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Monfero-Abeleira, 05-XI-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) A Coruña, Monfero-Vilaxestoso, 20-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) A Coruña, Negreira, 15-IX-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) A Coruña, O Pino, 04-V-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Oleiros-Nos, 11-X-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Oleiros-Nos, 30-III-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) A Coruña, Oroso, 05-VII-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Ponte do Porco, 05-V-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) A Coruña, Pontenafonso, 15-IX-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) A Coruña, Traba-3, 25-IV-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (6 BASC); 1) A Coruña, Valdoviño-3, 18-IV-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Cáceres, Las Hurdes, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) Granada, Lanjarón, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) León, Ancares-Balouta, 09-V-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) León, Ancares-Burbia, 13-VI-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) León, Ancares-Parajis, 12-IX-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) Lérída, Pyrenees, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) Lérída, Pyrenees, X-1903, 2) *Chaetocnema arida* Foud, Baselga det. (3 MNCN); 1) Lugo, Abadín-Valdeinfernos, 30-V-2003, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Ancares, 11-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Ancares-Cancelada, 18-X-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Ancares-Cancelada, 22-III-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) Lugo, Ancares-Higón, 08-V-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) Lugo, Ancares-Liber, 09-V-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Ancares-Liber, 24-II-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (5 BASC); 1) Lugo, Ancares-Os Cabaniños, 08-VI-1997,

leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (7 BASC); 1) Lugo, Ancares-Rao, 09-V-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Ancares-Vilarello, 22-III-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Cebreiro-Pacios, 16-IX-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Cospeito, 16-VIII-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Cospeito, 26-VII-2001, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Fonsagrada-Rebordela, 24-VII-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Monforte-Distriz, 19-III-1993, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (12 BASC); 1) Lugo, Monterroso-Frameán, 07-V-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Muras-Campo do Foixo, 21-VI-2002, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) Lugo, Muras-Silán, 21-VI-2002, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, O Corgo-Manán, 16-V-1993, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) Lugo, Oourol-Sisto, 21-VIII-1991, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Palas de Rei-Ambreixo, 07-V-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Lugo, Vilalba-Torrelo, 02-V-2003, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Lugo, Vilalba-Torrelo, 21-VI-2002, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Madrid, Alameda del Valle, 26-VI-1986, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) Madrid, Escorial, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) Madrid, Villaviciosa de Odón, 2) *Chaetocnema arida* Foud, Baselga det. (1 MNCN); 1) Ourense, A Mezquita-A Canda, 13-V-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Ourense, A Veiga-Vilanova, 29-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (10 BASC); 1) Ourense, Avión, 07-VI-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Baltar, 22-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Baltar-S. Martiño, 22-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) Ourense, Carballiño, 13-IX-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Ourense, Chandrexa de Queixa, 08-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (5 BASC); 1) Ourense, Chandrexa Queixa-Forcadas, 19-VI-2003, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) Ourense, Maceda-Asadur, 08-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Manzaneda-Manzaneda, 29-VI-2002, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Manzaneda-Placín, 23-V-2003, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Ourense, O Bolo-As Ermitas, 04-IV-1993, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) Ourense, Os Blancos-Nocedo, 22-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Riós-Progo, 12-VI-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense, Vilardevós, 29-III-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Ourense,

Vilariño Conso-Chaguazoso, 23-V-2003, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (8 BASC); 1) Pontevedra, A Cañiza-A Franqueira, 18-III-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (4 BASC); 1) Pontevedra, Bandeira, 14-VIII-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Pontevedra, Campo Lameiro-Muimenta, 06-III-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (3 BASC); 1) Pontevedra, Cuntis, 07-IX-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (7 BASC); 1) Pontevedra, Cuntis, 14-IX-1996, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (17 BASC); 1) Pontevedra, Forcarei, 06-III-2000, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Pontevedra, Oia-Loureira, 20-IX-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Pontevedra, Ponte Ulla, 07-IX-1997, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (2 BASC); 1) Pontevedra, Pontearreas-Prado, 09-V-1999, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (8 BASC); 1) Pontevedra, Rodeiro, 17-VII-1998, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Pozuelo de Calatrava (Hisp. m.) (1 USNM); 1) Salamanca, Cerezal de Peñahorcada, 19-VI-2001, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) Salamanca, Trabanca, 20-VI-2001, leg. Baselga, 2) *Chaetocnema arida* Foud, Baselga det. (1 BASC); 1) SP (Burgos) S. de Urbion, Montenegro de Cameros, 12 VII 2003, B. & M. Bergeal leg, 2) *Chaetocnema* nov. sp. ?, M. Bergeal det 2003, 3) *Chaetocnema arida* Foudres, det. A. S. Konstantinov, 2004 (1 USNM); 1) Vizcaya, Bilbao, 2) *Chaetocnema arida* Foud, Baselga det. (3 MNCN); 1) Espagne (Leon), Puerto de San Isidro, 8 VII 2003, B. & M. Bergeal leg, 2) *Chaetocnema* nov. sp. ?, M. Bergeal det 2003, 3) *Chaetocnema arida* Foudras, det. A. S. Konstantinov, 2004 (1 USNM); 1) Manzanal, Paganetti, 2) *arida*, 3) 1953 Coll., Heikertinger (1 NHMB); UNITED KINGDOM: 1) [actual specimen card], 26/XII/34, 2) New Forest, 26.xii.34, P. Harwood., 3) J.A Power, B.M. 1896-69., 4) *Chaetocnema arida* Foudras, det. A. S. Konstantinov, 2004 (2 BMNH); 1) London District, New Forest, Woking, Surrey, Chobham, Surrey, (150 BMNH).

***Chaetocnema aridula* (Gyllenhal)**

Fig. 12, Map 6

aridula Gyllenhal 1827:663 (type locality: Sweden: Västergötland, “Westrogothiae”; type depository: UUZM, lectotype designated here); as *Haltica (Striata)*

weisei Gerhardt 1906:238 (as variety of *aridula*; type locality: Poland, Legnica, “Hummel, Kreis Liegnitz”; type depository: unknown); Heikertinger 1951:212 (synonymized)

medvedevi Palij 1968:15 (type locality: Kyrgyzstan, “Tien-Shan, Issyk-Kul lake”; type depository: ZMAS). **New synonym**

Distribution: Algeria, Albania, Austria (Redtenbacher 1849), Azerbaijan (Lopatin 1977b), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina

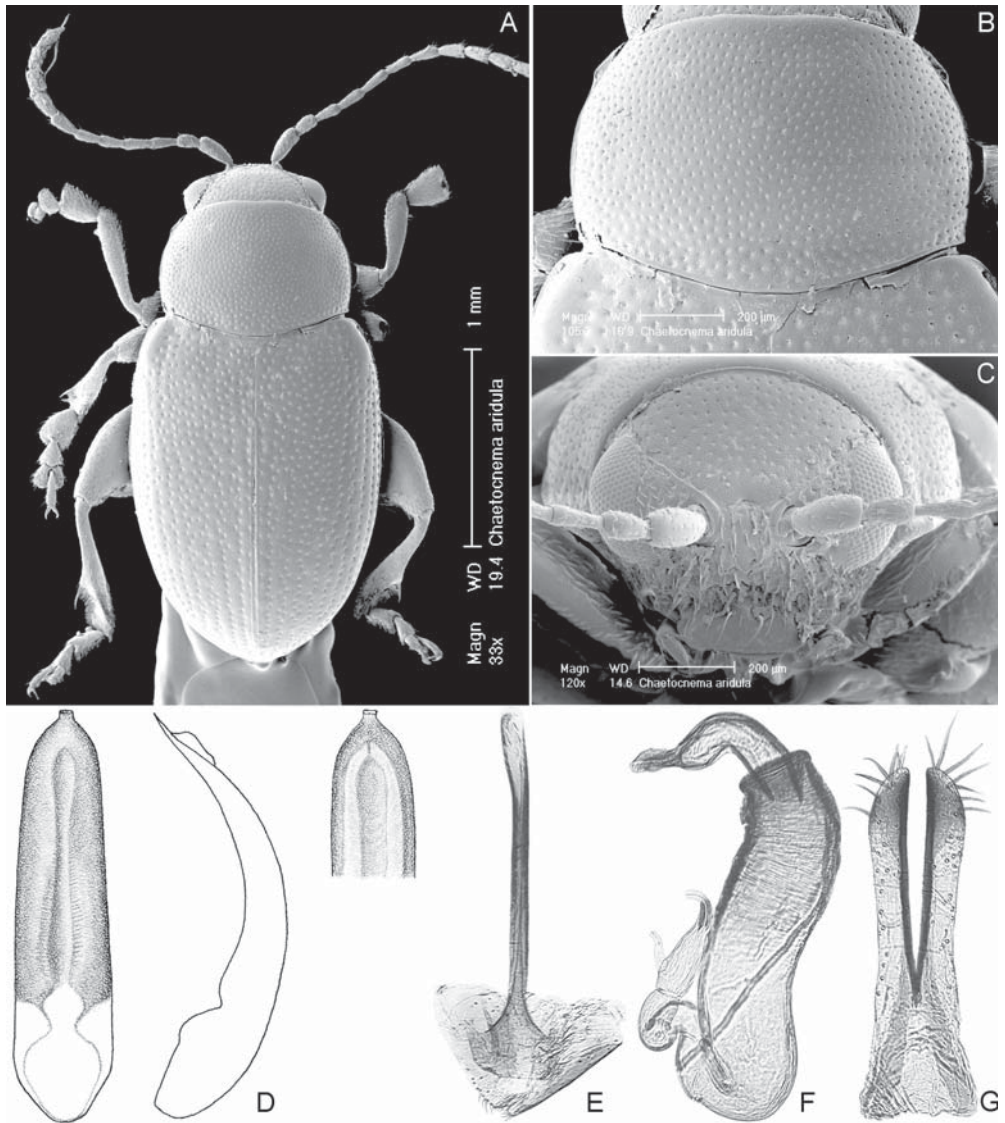
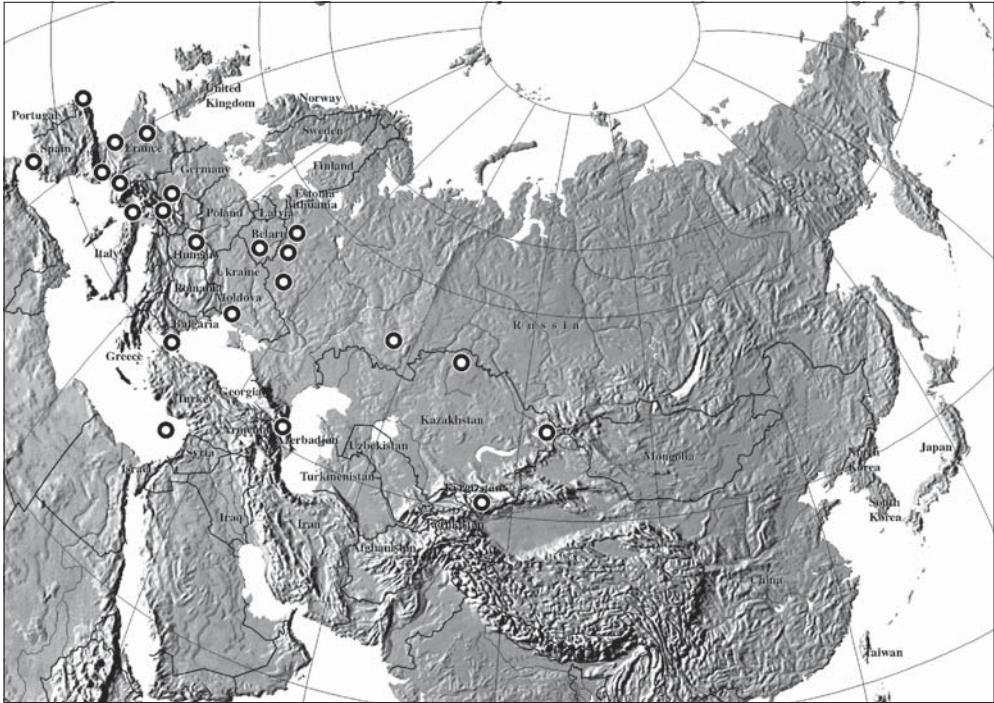


Figure 12. *Chaetocnema aridula*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

(Gruev 1979), Bulgaria (Gruev 1978, 1988b), Croatia, Czech Republic, Denmark (Hansen 1927), Egypt (Alfieri 1976), England (Allen 1976), Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Germany (Weise 1888), Greece (Gruev 1990a), Hungary (Vig 1996), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Kyrgyzstan (Palij 1968, Lopatin 1977b), Latvia (Pūtele 1971), Liechtenstein, Lithuania, Luxembourg, Mace-



Map 6. *Chaetocnema aridula*

donia (Gruev 1979), Malta, Montenegro (Gruev 1979), Netherlands (Leesberg 1881), Norway (Klefbeck & Sjöberg 1957), Poland (Bartkowska 1994), Portugal (Bastazo et al. 1993), Romania (Gruev et al. 1993), Russia (Daghestan, Karelia, Siberia) (Lopatin 1960, 1977b), Serbia (Gruev 1979), Slovakia, Slovenia, Spain (Bastazo et al. 1993), Sweden, Switzerland (Stierlin 1886), Turkey (Gruev & Kasap 1985), Ukraine (Crimea, Carpathians) (Konstantinov 1988).

Host plants: *Glyceria aquatica (spectabilis)*, *Agropyrum repens* (Heikertinger 1925); *Agropyrum repens*, *Panicum* sp., *Phalaris arundinacea*, *Poa trivialis*, *P. pratensis*, *Dactylis glomerata*, *Festuca* sp., *Bromus erectus*, *B. inermis* (Doguet 1994). *Triticum* spp., *Hordeum* spp., *Secale cereale*, *Avena sativa* (Palij 1961).

Description: Body length (excluding head) 2.21–2.47 mm; width 1.26–1.52 mm. Ratio of elytron length at suture to maximum width, 1.70–1.72. Ratio of pronotum width at base to length at middle, 1.41–1.43. Ratio of length of elytron at suture to length of pronotum at middle, 2.35–2.71. Ratio of width of both elytra at base to width of pronotum at base, 1.08–1.14. Ratio of maximum width of both elytra to maximum width of pronotum, 1.47–1.49.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 partly dark brown. Antennomere 2–3 partly dark brown, rarely completely yellow. Antennomere 4

partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia partly brown, rarely yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.50–1.71. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.19–1.23. First and second male protarsomere length to length ratio, 1.73–1.77. First and second male protarsomeres width to width ratio, 1.52–1.56. Length of metatibia to distance between denticle and metatibial apex 2.01–2.05. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.12–2.16. First male protarsomere maximum width to width at base ratio, 2.90–2.94. First and second male metatarsomere length to length ratio, 1.62–1.66. First and second male metatarsomere width to width ratio, 1.09–1.13. Third and fourth male metatarsomere length to length ratio, 1.83–1.87.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually, rarely abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral surface of aedeagus lateral to median groove in middle flat, horizontal. Ventral surface of aedeagus lateral to median groove basally convex. Ventral longitudinal groove in apical half of aedeagus well-developed with deep, obtuse margins or poorly developed. Ventral longitudinal groove in middle and basal half of aedeagus well-developed, deep, with sharp margins. Apical part of longitudinal groove as wide as basal; middle part narrower than basal and apical portions. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus;

absent on apical part. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight; broadly rounded at extreme anterior end. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema aridula* is one of the most common species in Eastern Europe. It can be separated from the other common species, *C. hortensis*, by the finer punctation of pronotum, with its lateral sides being more and evenly convex, and by the ventral groove of the aedeagus with transverse wrinkles (which are lacking in *C. hortensis*). Specimens from the Caucasus and Kyrgyzstan differ from the European specimens in having lighter colored antennae and legs, however their aedeagi are indistinguishable. Specimens from Belarus and the Smolensk region of Russia are particularly dark. Wing polymorphism, similar to that described for *Longitarsus* (Shute 1980), occurs in *C. aridula*. *Chaetocnema medvedevi* Palij is synonymized here with *C. aridula*. It has most features of the aedeagus indistinguishable from those of *C. aridula* from Belarus. However, specimens from Germany and the Smolensk region of Russia have the aedeagus wider at the apex, and more parallel-sided.

Type material: *Chaetocnema aridula*: Lectotype male: 1) b; 2) Uppsala Univ. Zool. Mus. Gyllenhals saml. TYP nr. 1392; 3) *Haltica aridula* Gyllenhal, 1827, det H-E Wanntorp 2008; 4) Lectotype *Chaetocnema aridula* Gyllenhal des. A. S. Konstantinov et al., 2009 (UUZM). Paralectotype, the same labels as lectotype except first label with letter a (1 UUZM).

Chaetocnema medvedevi: Paratype male: KYRGYZSTAN: 1) Issyk-Kul', Kurmenta, 9.VII.1963, 2) Paratypus *Chaetocnema medvedevi* Palij (1 ZSMC); Paratype male: 1) Turgen'-Aksu, Tien Shan, Palij, 11.VI.1963, 2) Paratypus *Chaetocnema medvedevi* Palij (2 ZMAS).

Material: AUSTRIA: 1) ? Nied. Oesterr. Klosterneburg, 10.1909 Krekich, 2) *Chaetocnema aridula*, Heikertinger det. (3 NHMW); 1) Austria inf. Dornbach, 2) *Chaetocnema aridula*, Heikertinger det. (3 NHMW); 1) Austria inf. Modling, 2) *Chaetocnema aridula*, Heikertinger det. (6 NHMW); 1) Bisamberg. A. i. [Bisamberg, lower Austria?] (1 BMNH); 1) Wien, Umgeb. Donau-auen (2 BMNH); 1) Wien, Umgeb., Donau-auen (1 BMNH); 1) Wien, Umgeb., Donau-Aue 2) *Chaetocnema aridula* Gyll. det. Heiktgr (1 USNM); AZERBAIJAN: 1) Az SSR, 3.V.1986, Gosmalyan, S, Saluk leg., 2) *Ch. aridula*

Gyll., det. Konstantinov (1 USNM); BELARUS: 1 female 1) Belarus': Vitebsk terr. Opsa env. 7.VII.1981 small swamp, leg. A. Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov, 2009 (1 USNM); 1 male, 4 females 1) Belarus': Vitebsk terr. Braslav reg. Chernyshki 9.VII.1981 Strusto lake shore, leg. A. Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov, 2009 (5 USNM); 1) Belarus': Minsk env. 54°00'00"N 27°17'00"E 21.VII.1979, meadows, leg. A. Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov, 2009 (7 USNM); male, 3 females 1) Belarus': Minsk obl. Env. of Minsk, "Svalka" 54°00'00"N 27°17'00"E 9.V.1980, leg. A. Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov, 2009 (4 USNM); 1) BSSR, Ivatsevichskii raion, 18.IV.1985, Zhukovets leg., 2) Barber trap, 3) *Chaetocnema aridula* Gyll. (2 USNM); CYPRUS: 1) Pera Pedi, Sept. 2, 1937, July 13, 1937, leg. G. A. Mavromoustakis (2 BMNH); FRANCE: 1) Cognac (3 BCPF); 1) Environs. du Paris (1 BMNH); 1) Larche, Basses-Alpes (3 BMNH); 1) Le Longereux (3 BCPF); 1) Meyrueis, August 20, 1988, leg. M. Bergeal (5 BCPF); 1) Montargis, leg. M. Taravellier (1 BCPF); 1) Vauchuse buoux, Luberon Mountains, 22 September 1975, leg. M. I. Russell (2 BMNH); 1) Vernet, Pyren-Orient, November-December (3 BMNH); GERMANY: 1) Ruthe (2 BMNH); 1) Kelheim/Ndby., 1.6.72, leg. Döberl, 2) *Chaetocnema aridula*, det. Döberl 1972 (1 USNM); 1) Niederbayern, Umg. Abensberg, 4.7.1977, leg. Döberl, 2) *Chaetocnema aridula*, det. Döberl 1978 (1 USNM); HUNGARY: 1) Hortobagy N. P. Puspokladany, Agotapuszta fuhalozas, 1975.VII.7-9, leg. Hamori, 2) *Chaetocnema aridula*, Gruev det. (3 ZSMC); 1) Hungaria, Kisvelence, Dr. Lenci 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov, 2009 (5 USNM); ITALY: 1) Courmayeur (1 BMNH); 1) Pre. St. Didier (1 BMNH); 1) Pre. St. Didier, N. Italy (2 BMNH); KAZAKHSTAN: 1) Sev. Kazakhstanskaya oblast', VII.1965, leg. V. Palij, 2) *Chaetocnema aridula*, Gruev det. (2 ZSMC); 1) Kazakhstan, 17.VII.1985, Dzhungarskii Alatau, env. Topolevka, leg. I. K. Lopatin, 2) *Chaetocnema aridula* (Gyll.), A. Baselga 2009 (2 USNM); KYRGYZSTAN: 1) Kirgizia, env. s. Kurmenta, 24.VI, 2) medvedevi (Lopatin handwriting) (1 USNM); 1) lake Issyk-Kul', Kurmenty, 9.VII.1963, 2) *Chaetocnema medvedevi* Palij, 3) *Chaetocnema medvedevi* Palij I.K. Lopatin det. 1980 (1 USNM); 1) north shore of Issyk-Kul', 25.VI.1962, 2) medvedevi Pal., 3) *Chaetocnema aridula* Gyll. Konstantinov det. (1 USNM); MALTA: 1) Malta (1 BMNH); RUSSIA: 1) Bashkiriya, 1967, leg. V. Palij, 2) *Chaetocnema aridula*, Gruev det. (1 ZSMC); 1) Kusrk, Streletskaya Step', 1970., 2) *Chaetocnema aridula*, Gruev det. (7 ZSMC); 1) Lipetskaya oblast, Donetskii raion, Donetskoe, Don river, 30.VIII.1970, leg. Gruev, 2) *Chaetocnema aridula*, Gruev det. (5 ZSMC); 1) Russia, Bryansk terr. Unecha, 23.VI.1981, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov (1 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 23.VII.1980, Skotinino, Ugra river, 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov (3 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 23.VII.1980, Skotinino, Ugra river, pasture, 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema aridula* (Gyllenhal) det. A.S. Konstantinov (2

USNM); 1) Smolensk oblast' Temkino, der. Skotinino, 3.VIII.1979 leg. Konstantinov, 2) *Chaetocnema aridula* Gyllenhal (1 USNM); 1) Ufimskii raion, Chishmy, 14.VIII.1926, 2) *Chaetocnema aridula* (Gyll.), det. A. S. Konstantinov, 2009 (1 ZMAS); SPAIN: 1) Gibraltar, November-December (3 BMNH); 1) Grenada, May, 1856, leg. H. Clark (1 BMNH); 1) A Coruña, Dodro, 26-IV-1998, leg. Baselga, 2) *Chaetocnema aridula* (Gyll.), Baselga det. (3 BASC); 1) A Coruña, Dodro, 30-VIII-1996, leg. Baselga, 2) *Chaetocnema aridula* (Gyll.), Baselga det. (1 BASC); 1) Lugo, Cospeito, 23-VIII-2001, leg. Baselga, 2) *Chaetocnema aridula* (Gyll.), Baselga det. (9 BASC); TURKEY: 1) Edirne, Turcia, 8.-13. VI 47, Exp. N. Mus. CSR, 2) *Chaetocnema aridula* (Gyll.), det. A. S. Konstantinov, 2009 (1 USNM); UKRAINE: 1) Odessa, 1968, leg. V. Palij, 2) *Chaetocnema aridula*, Gruév det. (3 ZSMC).

***Chaetocnema balanomorpha* (Boieldieu)**

Figs. 3C, 3D, 13, Map 7

balanomorpha Boieldieu 1859:481 (type locality: France, "Pyrénées"; type depository: MNHN; lectotype designated by Doguet 1989:191); as *Plectroscelis*

Distribution: France (Boieldieu 1859), Spain.

Host plants: unknown.

Description: Body length (excluding head) 2.01–2.23 mm; width 1.08–1.30 mm. Ratio of elytron length at suture to maximum width, 2.33–2.56. Ratio of pronotum width at base to length at middle, 1.30–1.33. Ratio of length of elytron at suture to length of pronotum at middle, 2.14–2.22. Ratio of width of both elytra at base to width of pronotum at base, 0.94–0.98. Ratio of maximum width of both elytra to maximum width of pronotum, 1.14–1.16.

Elytron greenish without yellow or blueish without yellow. Pronotum greenish or blueish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight, forming obtuse angle and notch. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.41–2.43. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic cal-

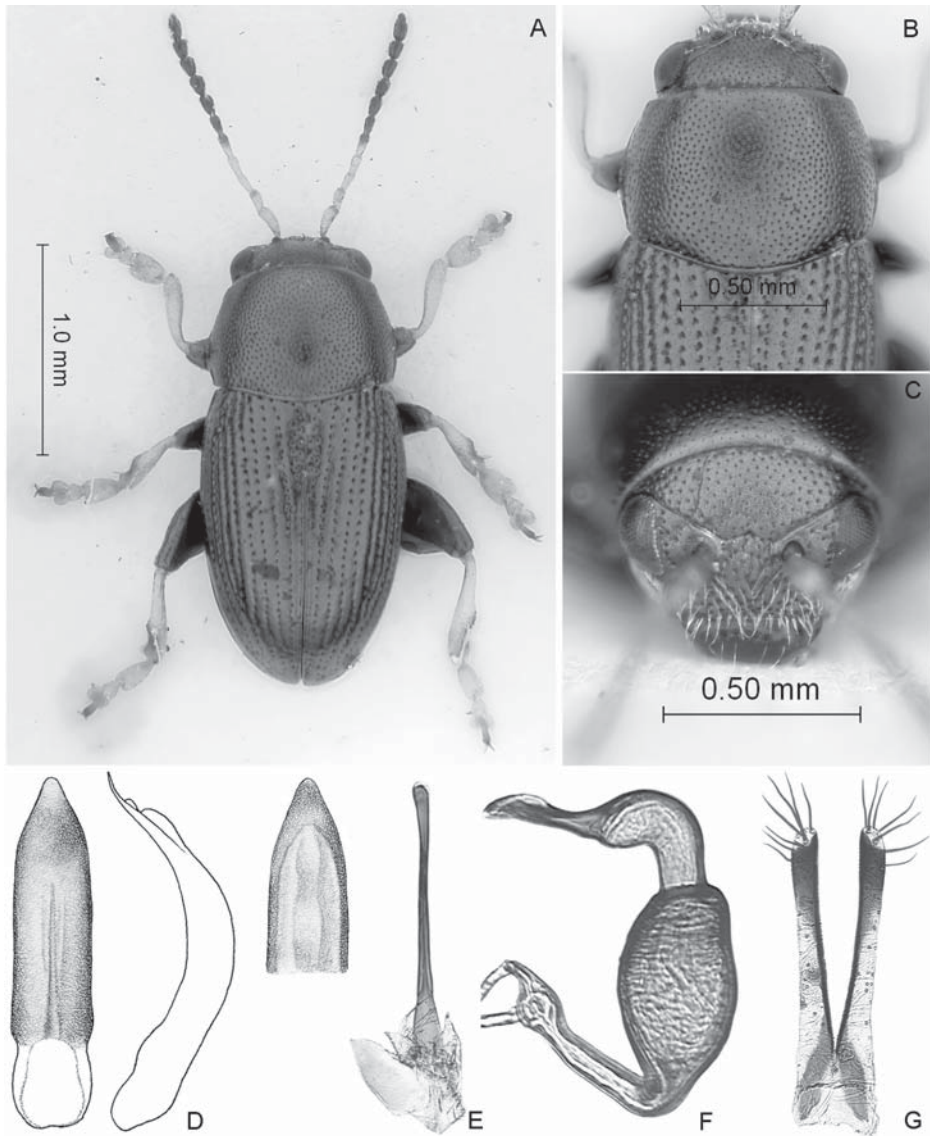
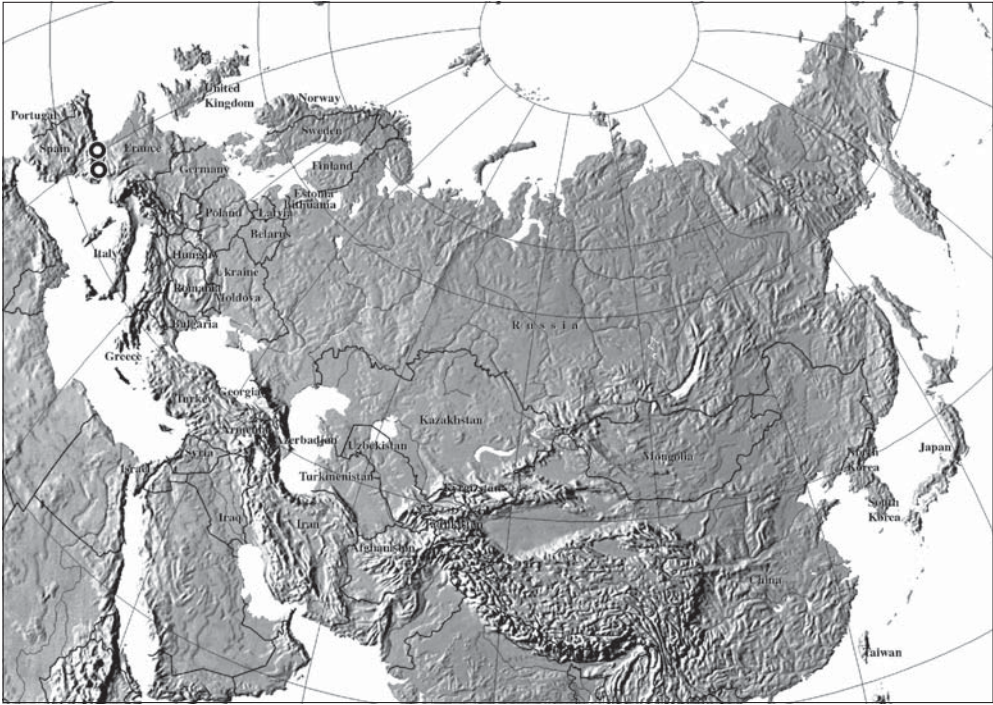


Figure 13. *Chaetocnema balanomorpha*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

losity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with sides parallel to each other. Single periscutellar row of regular punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus poorly developed.



Map 7. *Chaetocnema balanomorpha*

First male protarsomere length to width ratio, 1.23–1.27. First and second male protarsomere length to length ratio, 2.31–2.35. First and second male protarsomeres width to width ratio, 1.61–1.65. Length of metatibia to distance between denticle and metatibial apex 2.20–2.24. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.81–1.85. First male protarsomere maximum width to width at base ratio, 2.64–2.68. First and second male metatarsomere length to length ratio, 2.16–2.20. First and second male metatarsomere width to width ratio, 1.31–1.35. Third and fourth male metatarsomere length to length ratio, 1.43–1.47.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral surface of aedeagus lateral to median groove in middle flat, horizontal; convex basally. Ventral longitudinal groove in apical half of aedeagus absent. Ventral longitudinal groove in middle and basal half of aedeagus poorly developed, shallow, with obtuse margins (groove sometimes absent from basal half). Longitudinal groove at middle narrower than distance between groove and lateral

margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; strongly curved dorsally from lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus ensiform. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema balanomorpha* (like *C. angustula*) is another flightless Palearctic species with the base of the elytra barely wider than the base of the pronotum. They also share the aedeagus lacking a well-developed ventral groove with the apex bent dorsally in lateral view. Their vaginal palpi and spermathecae are also similar in having a straight receptacle, which is not much longer than the pump. *Chaetocnema balanomorpha* can be separated from *C. angustula* by the shape of the apex of the aedeagus which lacks a denticle in ventral view (it has a well-developed denticle in *C. angustula*).

Type material: *Chaetocnema balanomorpha*: Lectotype, male: 1) Pyrénées; 2) angustula Rosenh.; 3) *P. balanomorpha*; 4) Lectotype *Chaetocnema balanomorpha* Boield. S. Doguet des. 89 (MNHN).

Material: FRANCE: 1) Bilheres, Bois de Bergoueits, Rocher Lapique (1100-1200 m), July 1, 1996, leg. B. et M. Bergeal (18 BCPF); 1) Hautes-Pyrenees, Gavarnie (2000 m) vers col. Bouchero, July 5, 1978, leg. G. Tempère (1 BCPF); 1) Pyrenees Centrales, Col de Portet- d'Aspet 1100 m, 12.VII.75 G. Tempere, 2) *Chaetocnema balanomorpha*, Gruev det. (3 ZSMC); 1) F-64 Bilhères, 1.VII.1996, B. & M. Bergeal leg., 2) Bois de Bergoueits, Rocher Lapique, 1100-1200 m., 3) *Chaetocnema balanomorpha* Boield, M. Bergeal det 1996, 4) upper image, 3 Konstantinov (6 BCPF); 1) Pyrenees Atlantiques, Forest de Iraty, June 25, 1970, leg. P. Cantot (2 BCPF); Male, Female? 1) Gourzy (B-Pyr.) Hustache, 2) *Angustula*, 3) don. St. Cl. Deville, 4) *balanomorpha*, det. Heiktgr., 5) blank blue label, 6) 1953 Coll., Heikertinger (2 NHMB); SPAIN: 1) "Altos Pirineos", 2) *Chaetocnema balanomorpha* (Boield.), Baselga det. (4 MNCN).

***Chaetocnema basalis* Baly**

Fig. 14, Map 8

basalis Baly 1877b:310 (type locality: "India"; type depository: unknown)*parvula* Baly 1877b:310 (type locality: "Ceylon"; type depository: BMNH); Heikertinger 1951:214 (synonymized)*gestroi* Jacoby 1889:283 (type locality: Indonesia, "Isl. of Nias"; type depository: BMNH); Heikertinger 1951:214 (synonymized)*geniculata* Jacoby 1896:270 (type locality: "Burmah"; type depository: BMNH); Heikertinger 1951:214 (synonymized)

Distribution: Afghanistan (Scherer 1969), Bangladesh (Scherer 1969), Bhutan (Scherer 1979), China (Fukien, Tibet) (Chen 1934), India (Maulik 1926), Indonesia (Scherer 1969), Japan (Kimoto & Gressitt 1966), Myanmar (Shiple 1889), Pakistan (Kimoto 1972), Philippines (Scherer 1969), Sri Lanka (Maulik 1926), Taiwan (Chûjô 1935), Thailand (Scherer 1969), Vietnam (Chen 1934).

Host plants: *Oryza sativa terrestris* (Gressitt & Kimoto 1963); *Brachiaria distachya*, *Chrysopogon aciculatus*, *Dactyloctenium aegyptium*, *Digitaria ciliaris*, *Ischaemum rugosum*, *Paspalum conjugatum*, *Pennisetum polystachyon*, *Sorghum bicolor*, *Zea mays* (Barrion & Litsinger 1986); *Oryza sativa*, *Triticum vulgare*, *Crotolaria juncea*, *Brassica campestris*, *Solanum melongera* (Zaka-ur-Rab 1991).

Description: Body length (excluding head) 1.06–1.39 mm; width 0.65–0.95 mm. Ratio of elytron length at suture to maximum width, 2.09–2.11. Ratio of pronotum width at base to length at middle, 1.72–1.77. Ratio of length of elytron at suture to length of pronotum at middle, 2.57–2.58. Ratio of width of both elytra at base to width of pronotum at base, 1.16–1.17. Ratio of maximum width of both elytra to maximum width of pronotum, 1.41–1.43.

Elytron black, without metallic luster. Pronotum black, without metallic luster. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.49–1.51. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex lacking punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present throughout. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to

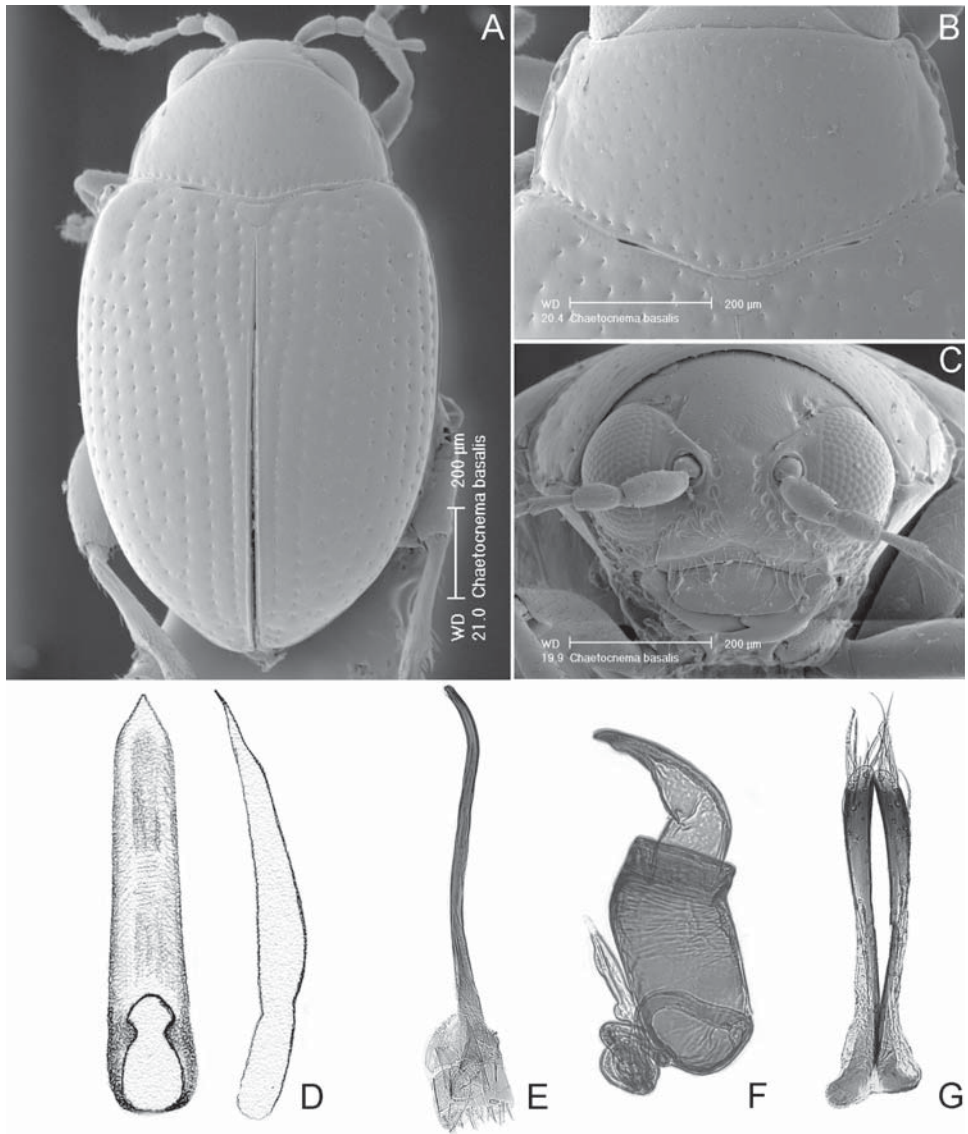
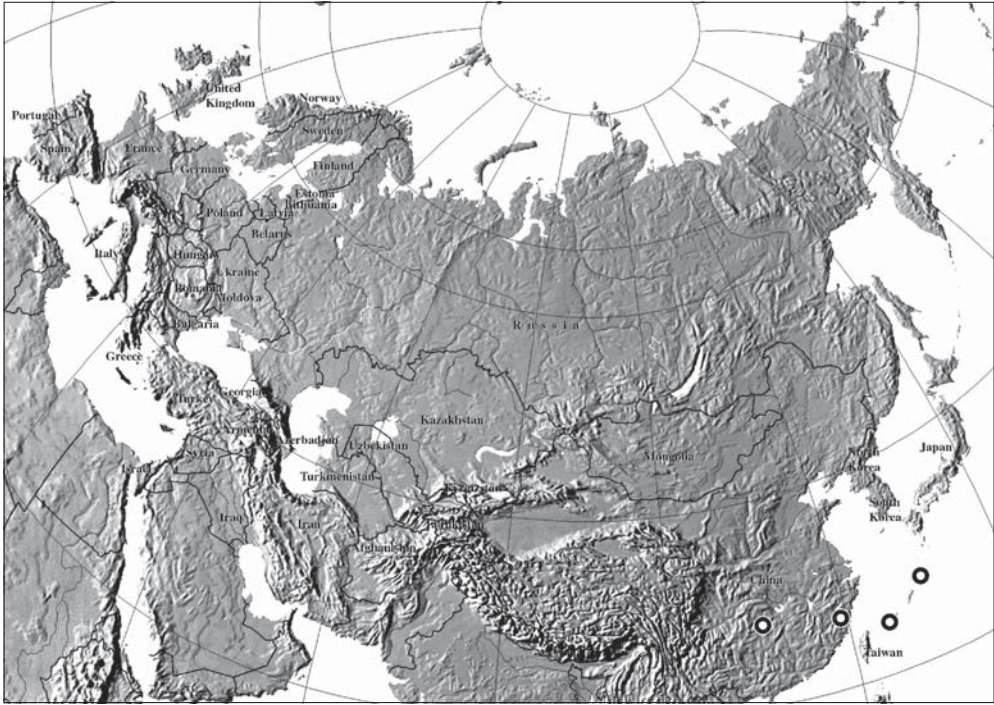


Figure 14. *Chaetocnema basalis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 6–10 times smaller than distance between them.



Map 8. *Chaetocnema basalis*

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.79–1.83. First and second male protarsomere length to length ratio, 1.40–1.44. First and second male protarsomeres width to width ratio, 0.98–1.02. Length of metatibia to distance between denticle and metatibial apex 2.53–2.57. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.09–3.13. First male protarsomere maximum width to width at base ratio, 1.58–1.62. First and second male metatarsomere length to length ratio, 1.53–1.57. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.07–1.22.

Apical third of aedeagus parallel-sided. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent at middle; poorly developed, with obtuse margins

at basal half. Apical part of longitudinal groove as wide as basal. Longitudinal groove at middle narrower than distance between groove and lateral margin. Apical denticle of aedeagus in ventral view poorly differentiated; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view nearly straight. Maximal curvature of aedeagus in lateral view situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum strongly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: We did not find any type material for *C. basalis* in the Natural History Museum, London (where it is most likely to be), therefore we base our concept of it on a male specimen from the Zoological Institute, St. Petersburg, Russia, with the label "H.L. Andrewes, Nilgiri Hills" identified as *C. basalis* by Bryant. We also checked that specimen against the original description (Baly 1877b) and found that it is in agreement with main characters mentioned in the description. *Chaetocnema basalis* can be easily separated from all other Palearctic species based on the shape of the aedeagus with a ventral longitudinal groove that is barely perceptible in the middle and the acute apex lacking a denticle. Although Medvedev (1993:49) suggested to synonymize *C. basalis* with *C. nigrica* Motschulsky, 1858, we think that the type material of both species needs to be re-examined before this decision can be implemented.

Material: CHINA: 1) Fukien, S. China, Kienyang City, T. C. Maa, 13.VIII.1940, 2) *Chaetocnema basalis*, Gressitt & Kimoto det. (1 ZSMC); 1) Guizhou, Guilin, Yaoshan, Sept. 24, 1980, 2) *Chaetocnema basalis*, Gruев det. (1 BMNH); INDIA: 1) H. L. Andrewes, Nilgiri Hills, 2) blank red label, 3) Andrewes Bequest., B. M. 1922-221., 4) *Chaetocnema basalis* Baly, Det. G. E. Bryant. (1 ZMAS); JAPAN: 1) Amani-Oshima I., Mt. Yuwan, 3km to Nishinakama, 19-20.VII.1963, 2) C. M. Yoshimoto, Collector, 3) U.S.-Japan Coop. Sci. Program, 4) *Chaetocnema (Tlanoma) basalis* Baly, Gressitt & Kimoto det. 1964 (1 USNM); 1) Ryukyu Is., Ishigaki I., XII-15-20-'52, G. E. Bohart, 2) *C. basalis* (1 USNM); VIETNAM: 1) Song Dinh, Annam 10.VIII, 2) *Chaetocnema basalis* Baly (2 ZMAS).

***Chaetocnema belka*, new species**

Fig. 15, Map 9

Distribution: China**Host plants:** unknown.

Description: Body length (excluding head) 1.72 mm; width 1.08 mm. Ratio of elytron length at suture to maximum width, 2.44. Ratio of pronotum width at base to length at middle, 1.33. Ratio of length of elytron at suture to length of pronotum at middle, 1.72. Ratio of width of both elytra at base to width of pronotum at base, 1.03. Ratio of maximum width of both elytra to maximum width of pronotum, 1.26.

Elytron and pronotum black, without metallic luster. Antennomere 1 completely yellow. Antennomeres 2–4 completely yellow or partly dark brown. Antennomere 5 completely brown. Protibia yellow. Mesotibia partly brown. Metatibia partly or completely brown. Pro-, meso-, metafemur brown.

Head opisthognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus obcordate, relatively deep, well-defined. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.83. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum evenly convex, without longitudinal impressions. Base of pronotum without deep row of large punctures. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second to sixth rows of punctures at base of elytron base regular. Elytral humeral callus poorly developed.

Ratio of length of metatibia to distance between denticle and metatibial apex, 2.14. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view.

Spermathecal pump much shorter than receptacle; attached to middle of receptacle top. Spermathecal receptacle sinuate. Apex of spermathecal pump flattened. Maximum width of receptacle situated apically with basal portion distinctly narrower. Posterior sclerotization of tignum gradually narrowing, narrower than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of middle of vaginal palpus (before apex) slightly narrowing from base, then becoming nearly parallel-sided. Anterior sclerotization of vaginal palpus nearly straight, slightly widening anteriorly; broadly

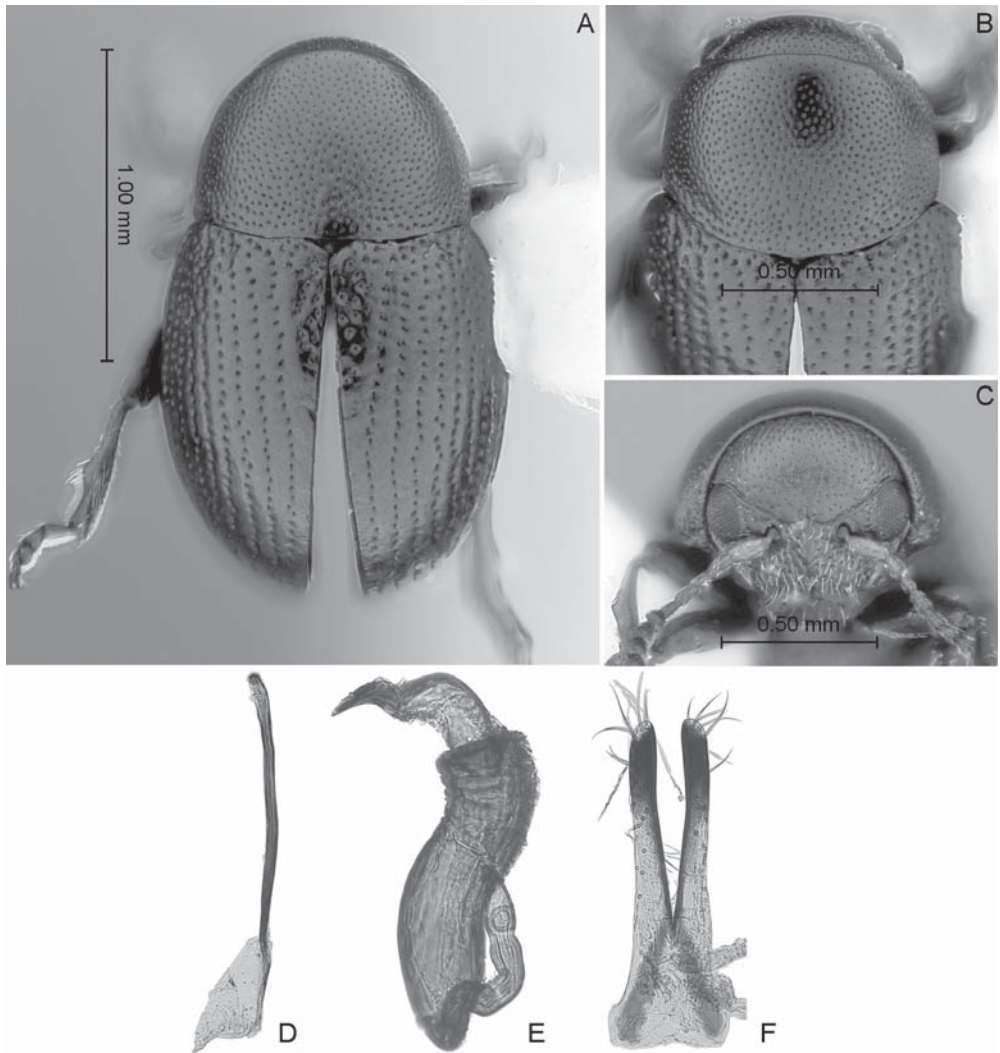
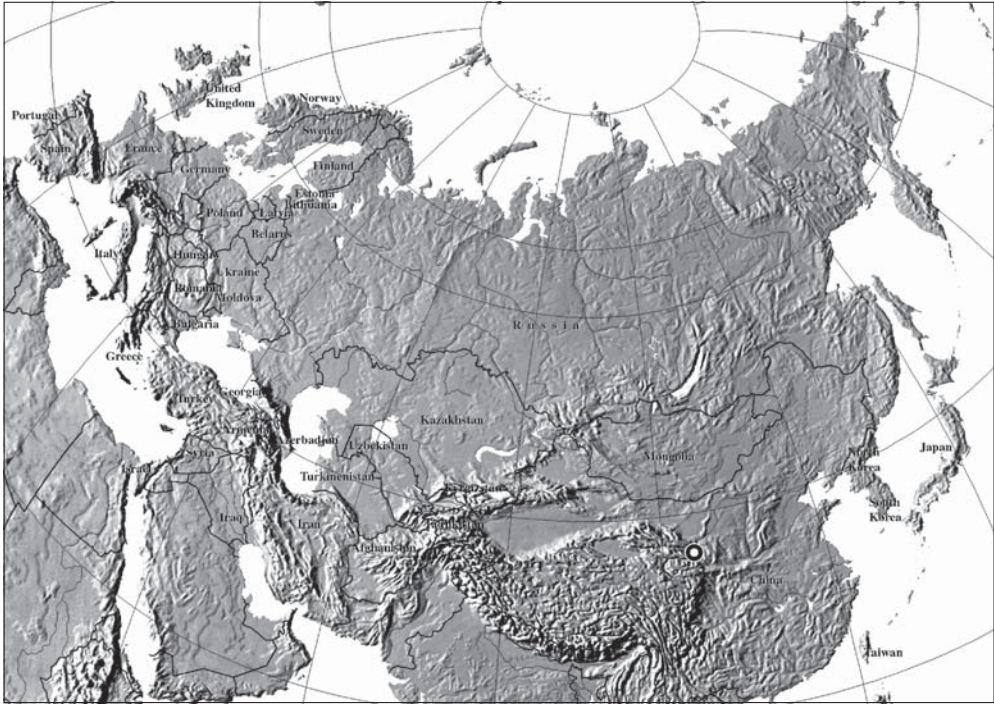


Figure 15. *Chaetocnema belka*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, tignum; E, spermatheca; F, vaginal palpi.

rounded at extreme anterior end. Length of posterior sclerotization greater than width. Ratio of width of posterior sclerotization to width of anterior sclerotization about equal.

Remarks: *Chaetocnema belka* is the only Asian flightless *Chaetocnema* species that is known. It is unique among the Palearctic and Oriental species known to us in having an opisthognathous head and a long and convex pronotum in lateral view.

Etymology: The specific epithet is a noun in apposition derived from the names of I. Belousov and I. Kabak who collected this remarkable beetle.



Map 9. *Chaetocnema belka*

Type material: *Chaetocnema belka*: Holotype, female: 1) China, SE Gansu, 17 km S of Lujing 34 11 57 N / 104 31 44 E, 34 10 28 N / 104 31 26 E, 3475–3510 m, 20.06.2005, Belousov & Kabak 2) Holotype *Chaetocnema belka* Konstantinov et al. 2009 (1 USNM).

***Chaetocnema bella* (Baly)**

Fig. 16, Map 10

bella Baly 1877a:595 (type locality: “China, Kin Kiang”; type depository: BMNH; lectotype designated here); as *Plectroscelis*

Distribution: China (Szechuan, Hupeh, Kiangsi, Fukien) (Chen 1939), Myanmar, Vietnam (Chen 1934).

Host plants: unknown.

Description: Body length (excluding head) 2.00–2.06 mm; width 1.26–1.30 mm. Ratio of elytron length at suture to maximum width, 2.31–2.39. Ratio of pronotum width at base to length at middle, 1.45–1.60. Ratio of length of elytron at suture to length of pronotum at middle, 2.60–2.66. Ratio of width of both elytra at base to width

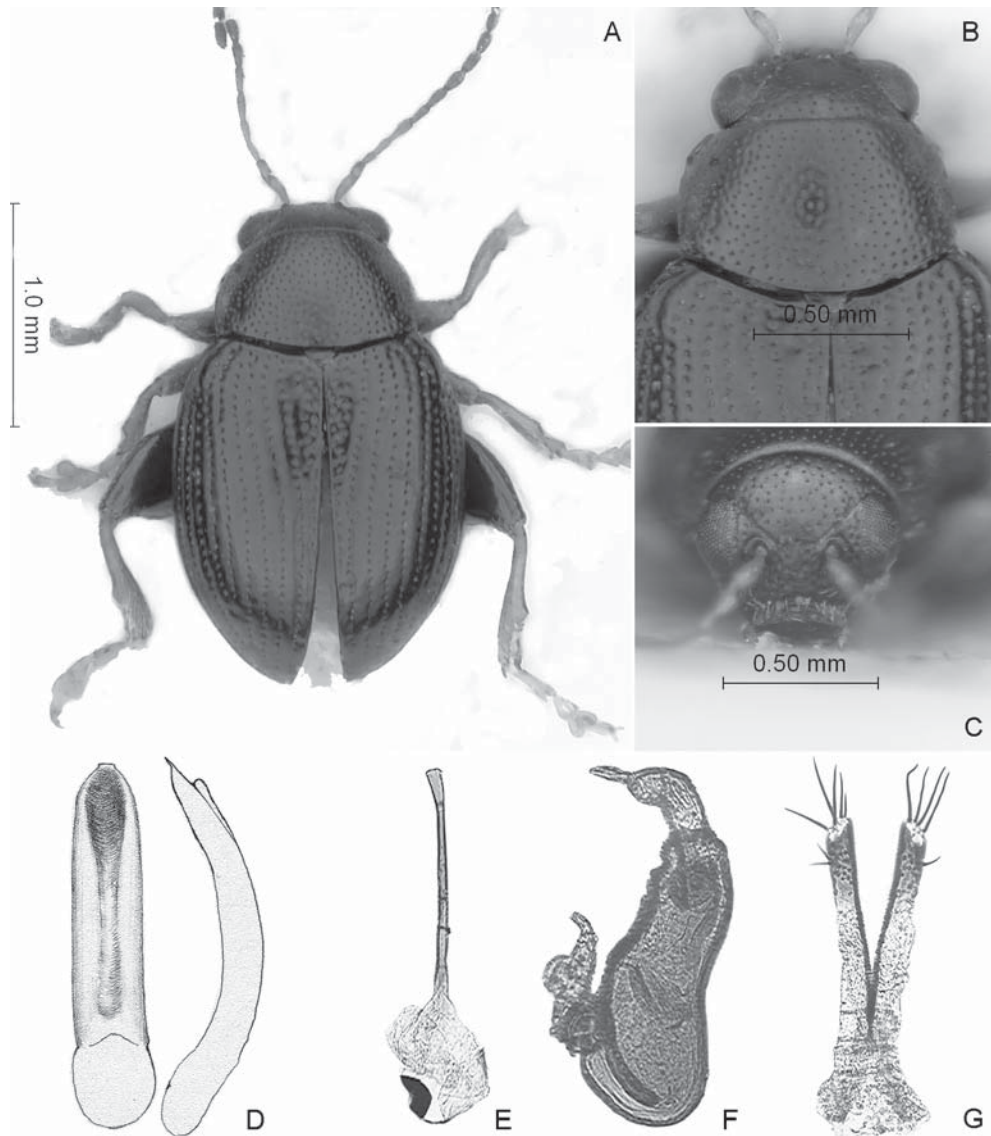
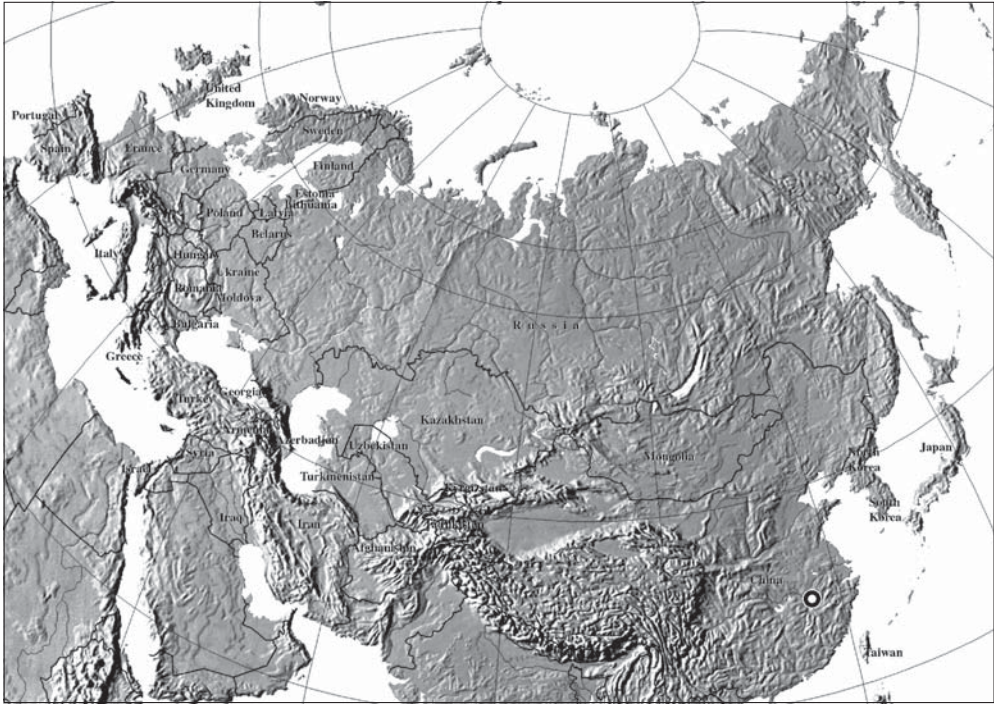


Figure 16. *Chaetocnema bella*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

of pronotum at base, 1.15–1.17. Ratio of maximum width of both elytra to maximum width of pronotum, 1.42–1.44.

Elytron blueish without yellow. Pronotum greenish or blueish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur light brown.



Map 10. *Chaetocnema bella*

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus wide and deep with vertical walls, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.93–2.95. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.85–1.89. First and second male protarsomere length to length ratio, 1.48–1.52. First and second male protarsomeres

width to width ratio, 1.21–1.25. Length of metatibia to distance between denticle and metatibial apex 2.55–2.59. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.81–2.85. First male protarsomere maximum width to width at base ratio, 2.31–2.35. First and second male metatarsomere length to length ratio, 1.68–1.72. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.67–1.71.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half, middle, and basal half of aedeagus poorly developed, shallow, with obtuse margins. Apical part of longitudinal groove wider than basal. Middle part of longitudinal groove as wide as basal, narrower than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, approximately parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly; slightly and evenly curved along length with extreme anterior end of sclerotization indeterminate. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: Gruev & Döberl (1997) incorrectly cited the year of the description as 1874 for this species. The lectotype of *C. bella* is a female so we compared its genitalia and spermatheca with those of a specimen from Tenasserim and found that they are nearly identical, except for the hump on the internal side of the spermatheca being more pronounced in the Tenasserim specimen. The male genitalia of the Tenasserim specimen are illustrated (Fig. 16). The aedeagus of *C. bella* is similar to the aedeagus of *C. klapperichi* in having the ventral groove narrowing from base to apex. However the aedeagus of *C. bella* is much thicker in lateral view than the aedeagus of *C. klapperichi*.

Type material: *Chaetocnema bella*: Lectotype female: 1) [Reverse side specimen card: China, Lewis], 2) Type, H.T., 3) Baly Coll., 4) *Plectroscelis bella* Baly, China, [back-side

of label has notes - illegible: 595, Type], 5) *C. bella* Baly, BM, 6) *Chaetocnema bella* Baly, HT, BM. No. 77, 7) Konstantinov; 8) Lectotype *Chaetocnema bella* Baly des. A. S. Konstantinov et al. 2009 (BMNH). Paralectotype female: 1) [Reverse side specimen card] China, Leine[?illegible], 2) Baly Coll., 3) Paralectotype *Chaetocnema bella* (Baly) des. A.S. Konstantinov 2009 (1 BMNH).

Material: MYANMAR: 1) Mus. Pragense, Tenasserim, Coll. Helfer, 2) *bella* Baly, I. Lopatin det., 19 (2 USNM).

Chaetocnema bergeali, new species

Fig. 17, Map 11

Distribution: France

Host plants: unknown.

Description: Body length (excluding head) 2.10 mm; width 1.19 mm. Ratio of elytron length at suture to maximum width, 2.51. Ratio of pronotum width at base to length at middle, 1.24. Ratio of length of elytron at suture to length of pronotum at middle, 2.18. Ratio of width of both elytra at base to width of pronotum at base, 1.19. Ratio of maximum width of both elytra to maximum width of pronotum, 1.27.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur light brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.50. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.30. First and second male protarsomere length to length ratio, 1.70. First and second male protarsomeres width to width ratio, 1.30. Length of metatibia to distance between denticle and metatibial apex 2.19. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to

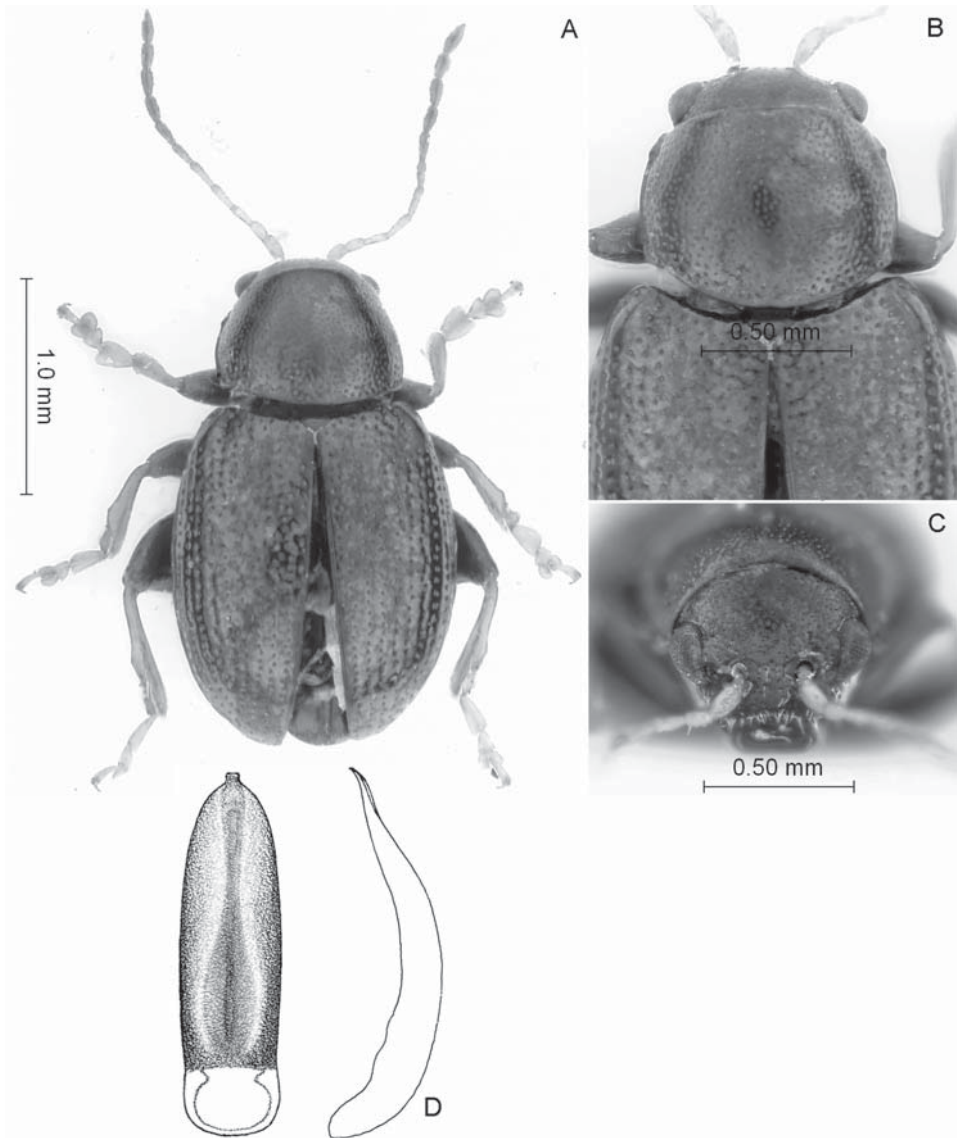
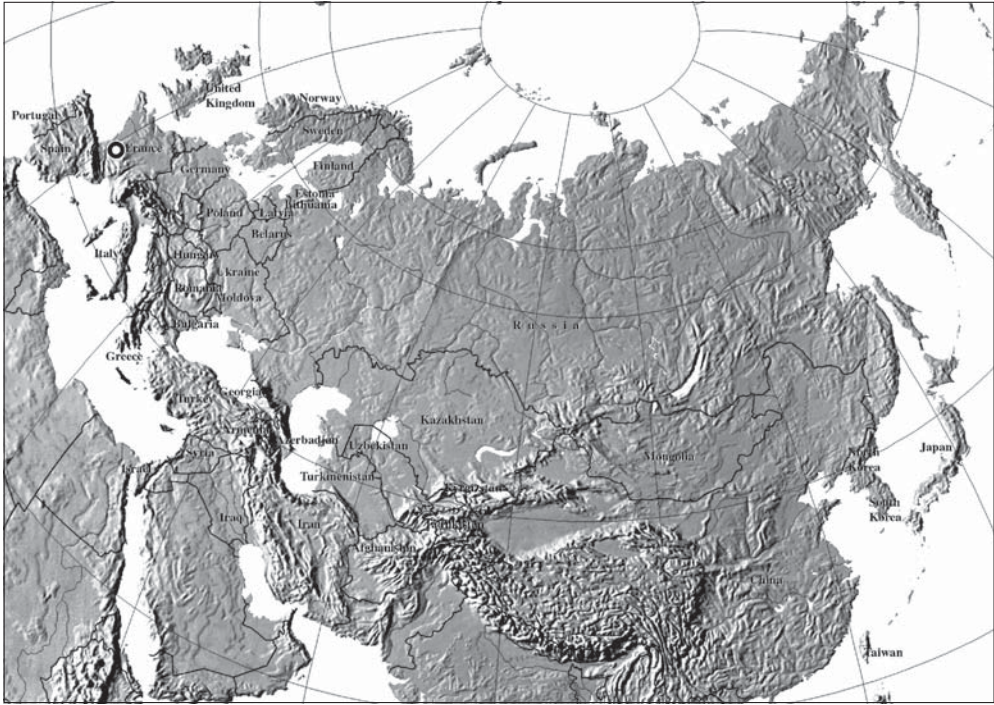


Figure 17. *Chaetocnema bergeali*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus ventral and lateral.

large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.10. First male protarsomere maximum width to width at base ratio, 2.42. First and second male metatarsomere length to length ratio, 2.00. First and second male metatarsomere width to width ratio, 1.20. Third and fourth male metatarsomere length to length ratio, 1.81.



Map 11. *Chaetocnema bergeali*

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove flat, horizontal apically and at middle; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp or obtuse margins in basal half. Apical and middle part of longitudinal groove subequal in width; narrower than basal. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present. Minute transverse wrinkles on apical part of ventral side of aedeagus absent. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Remarks: *Chaetocnema bergeali* was previously identified as *C. subcoerulea*. The type of *C. subcoerulea* has been lost (Doguet 1994), however we examined specimens of this species collected at the type locality, England. They are markedly different from *C. bergeali* by a few external and internal features: apical part of aedeagus in ventral view narrowing abruptly (it is narrowing gradually in *C. subcoerulea*); tip of aedeagus bent

ventrally (it is bent dorsally in *C. subcoerulea*); and ventral longitudinal groove near base wider than near apex (it is wider apically than basally in *C. subcoerulea*). Since M. Bergeal collected the holotype of this species, he later collected additional specimens from the same place. Unfortunately all of them turned out to be *C. subcoerulea*.

Etymology: The name is a patronym dedicated to Michel Bergeal, who collected the only known specimen.

Type material: *Chaetocnema bergeali*: Holotype, male: 1) 19. Bugeat, 28.V.1986, M. Bergeal, 2) Holotype *Chaetocnema bergeali* Konstantinov et al. 2009. (1 BCPF currently at USNM).

***Chaetocnema bicolorata* Kimoto**

Fig. 18, Map 12

bicolorata Kimoto 1971:3 (type locality: Japan, "Yunomata, Ohata-machi, Shimokita Pen. Aomori Pref."; type depository: KUEC)

Distribution: Japan (Kimoto 1971), South Korea (Takizawa 1985).

Host plants: unknown.

Description: Body length (excluding head) 1.83 mm; width 1.20 mm. Ratio of elytron length at suture to maximum width, 2.35. Ratio of pronotum width at base to length at middle, 1.50. Ratio of length of elytron at suture to length of pronotum at middle, 2.78. Ratio of width of both elytra at base to width of pronotum at base, 1.13. Ratio of maximum width of both elytra to maximum width of pronotum, 1.46.

Elytron black, without metallic luster. Pronotum bronzyish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur light brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.00. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 3–5 punctures near eye.

Base of pronotum with two short impressions visible only near basal margin. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

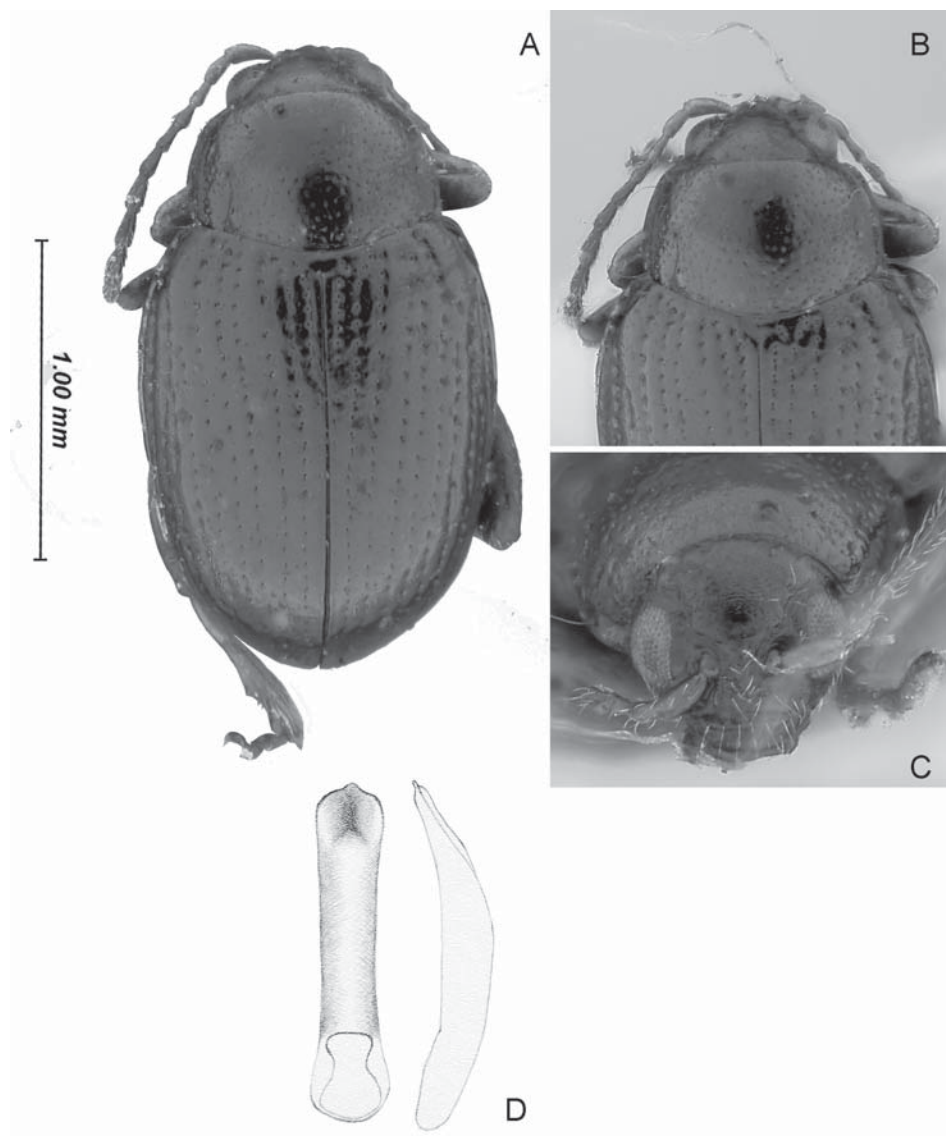
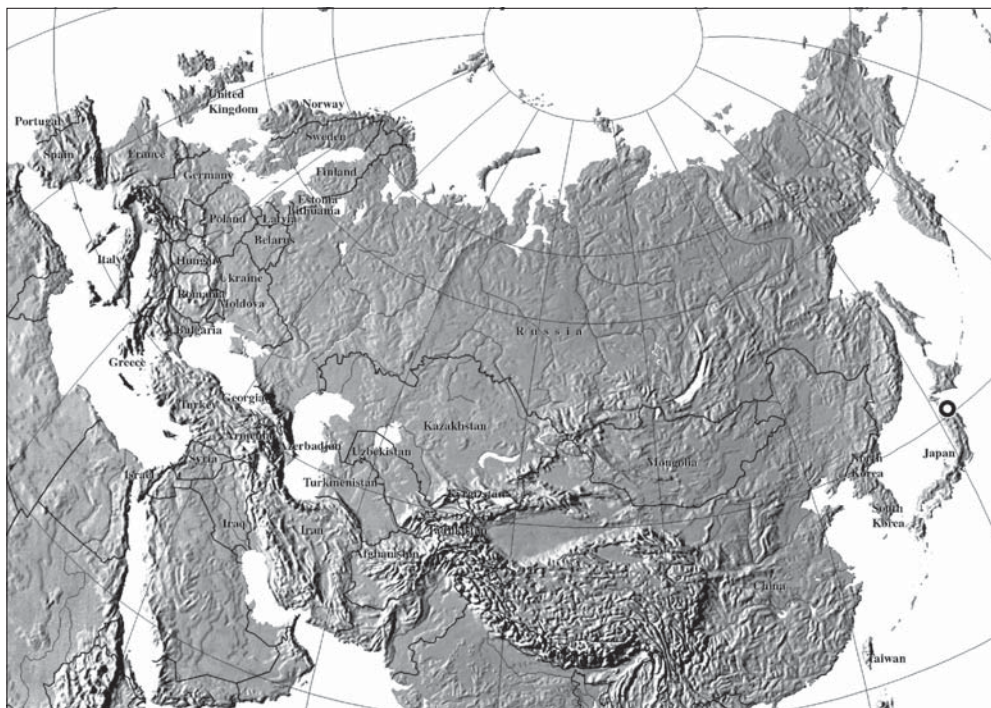


Figure 18. *Chaetocnema bicolorata*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.80. First and second male protarsomere length to length ratio, 1.63. First and second male protarsomeres width



Map 12. *Chaetocnema bicolorata*

to width ratio, 1.00. Length of metatibia to distance between denticle and metatibial apex 1.66. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.88. First male protarsomere maximum width to width at base ratio, 1.66. First and second male metatarsomere length to length ratio, 1.55. First and second male metatarsomere width to width ratio, 0.87. Third and fourth male metatarsomere length to length ratio, 1.66.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening compared to width just before apical declivity smaller. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically convex. Ventral longitudinal groove in apical half and middle of aedeagus absent. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved. Maximal curvature of aedeagus in lateral view situated apically.

Remarks: *Chaetocnema bicolorata* was previously identified as *C. koreana* (Kimoto 1971). However both species are very different and have completely different aedeagi.

Chaetocnema bicolorata is very similar to *C. kimotoi*. These species can be separated from each other by the following characters: in *C. bicolorata* pronotum and elytron are different in color, elytron black without metallic luster, pronotum bronzish (in *C. kimotoi* both pronotum and elytron are blueish); basal antennomeres and legs of *C. bicolorata* are lighter than those of *C. kimotoi*; suprafrontal sulcus deep laterally, but absent in middle (it is deep laterally and shallow in middle in *C. kimotoi*); ventral side of aedeagus convex before apex, apex with relatively deep, wide impression (in *C. kimotoi* ventral side of aedeagus flattened or slightly concave before apex, apex flat or slightly impressed). Both *C. bicolorata* and *C. kimotoi* are similar to *C. concinna* and *C. picipes* (the latter also occurs in the Far East), but they can be easily separated with the help of the key.

Type material: *Chaetocnema bicolorata*: Holotype, male: 1) (Honshu), Yunomata, Oohata-machi, Shimokita Pen, 30.VII. 1956, K. Morimoto; 2) *Chaetocnema bicolorata* Kimoto, s. sp.; 3) Holotype; 4) (yellow label with Japanese handwriting) (1 KUEC).

***Chaetocnema breviscula* (Faldermann)**

Fig. 19, Map 13

breviscula Faldermann 1837:349 (type locality: "Transcaucasica"; type depository: type lost); as *Plectroscelis*

turhalus Iriboz 1934:84 (type locality: Turkey, Samsun, Turhal and Geyve; type depository: type lost). **New synonym**

Distribution: Afghanistan (Gruev 1988a), Armenia (Gruev & Döberl 1997), Azerbaijan, Belarus (Lopatin 1986), Bulgaria (Gruev 1988b), China (Gruev 1981, Gruev & Döberl 1997), Georgia, Greece (Heikertinger 1951, Gruev 1990a), Hungary (Kaszab 1962), Iran, Iraq (Gruev 1995b), Israel (Furth 1985), Jordan (Gruev & Döberl 1997), Kazakhstan (Lopatin 1984), Korea (Gruev 1990c), Moldova, North Korea, Mongolia (Lopatin 1975), Romania (Gruev et al. 1993), Russia (Altai) (Lopatin 1960), (Caucasus) (Konstantinov 1988), Slovakia (Čížek 2006), Tajikistan (Lopatin & Tadjibaev 1972), Turkey, Turkmenistan (Gruev & Döberl 1997), Ukraine.

Host plants: Chenopodiaceae, *Beta vulgaris* (Palij 1961, Lopatin 1984). *Salsola kali*, *Atriplex halimus* (Peyerimhoff 1911).

Description: Body length (excluding head) 1.56–1.94 mm; width 0.94–1.18 mm. Ratio of elytron length at suture to maximum width, 2.52–2.66. Ratio of pronotum width at base to length at middle, 1.57–1.69. Ratio of length of elytron at suture to length of pronotum at middle, 3.00–3.19. Ratio of width of both elytra at base to width of pronotum at base, 1.16–1.17. Ratio of maximum width of both elytra to maximum width of pronotum, 1.36–1.50.

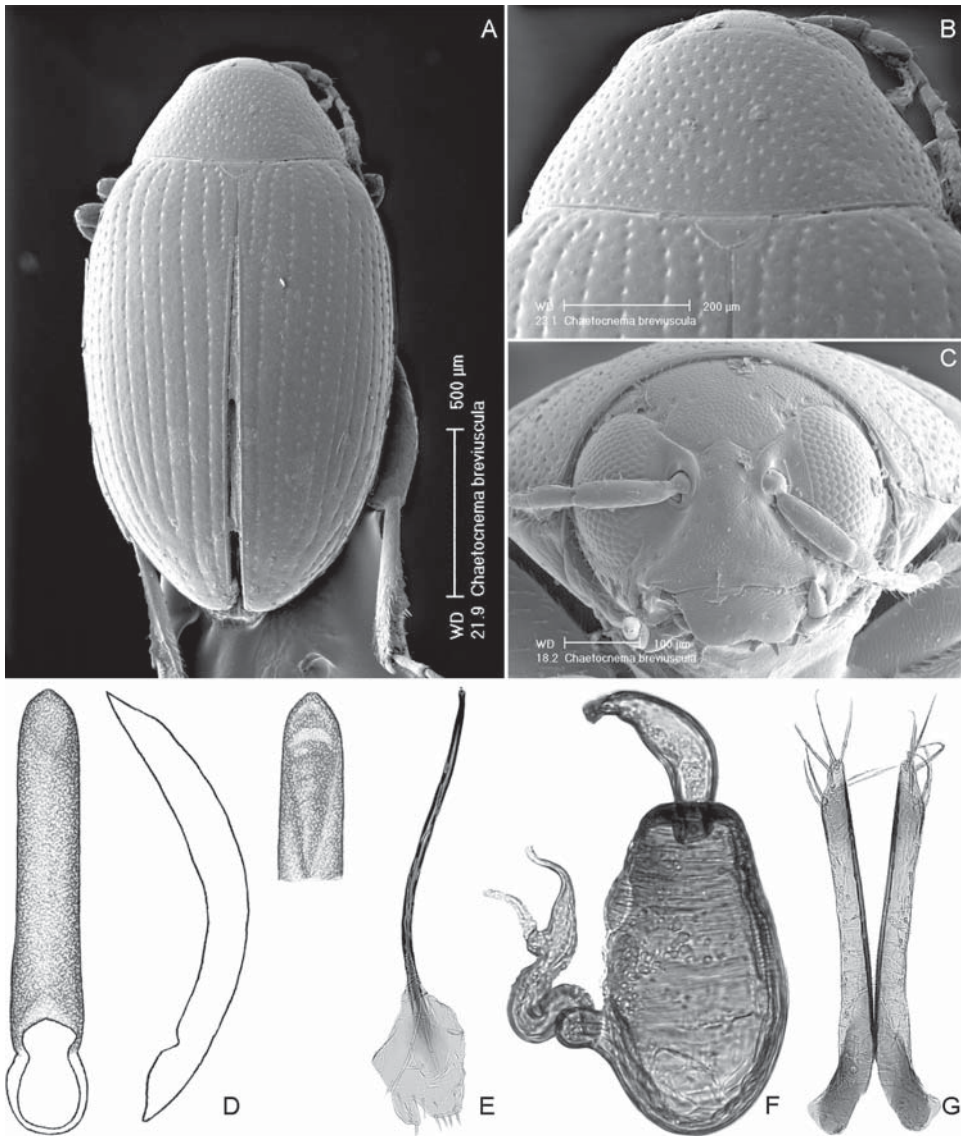
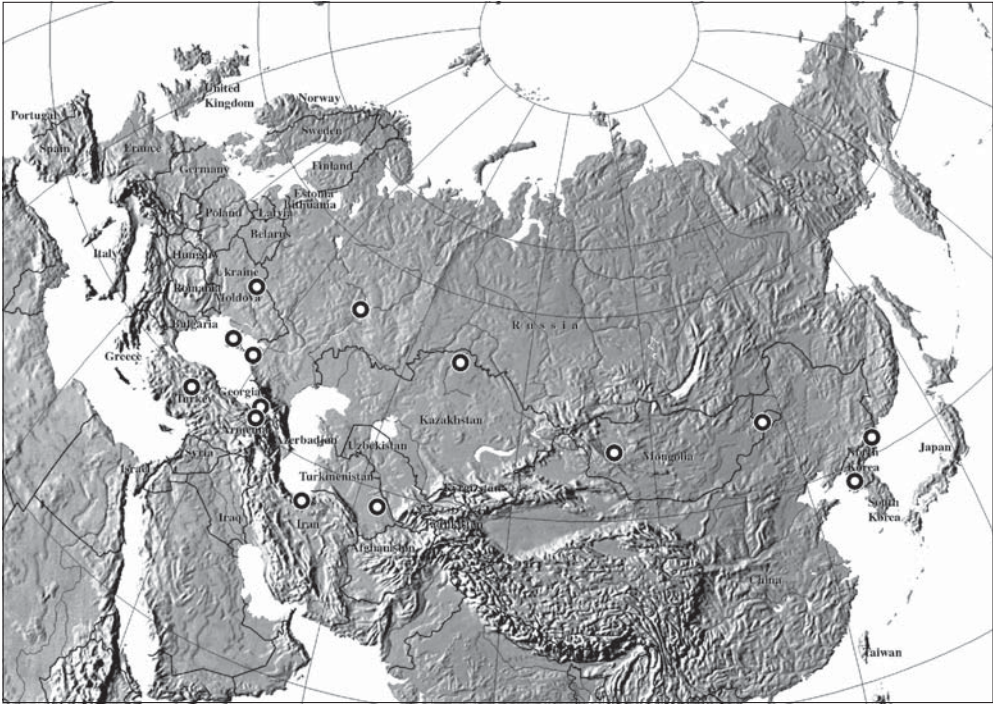


Figure 19. *Chaetocnema breviuscula*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Elytron bronzish without yellow, rarely copperish without yellow. Pronotum copperish, rarely bronzish. Antennomere 1–5 completely yellow. Pro-, mesotibia yellow. Metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, retuse.



Map 13. *Chaetocnema breviscula*

Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.10–1.12. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 8–10 or 3–5 punctures near eye.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 2.01–2.03. First and second male protarsomere length to length ratio, 1.38–1.41. First and second male protarsomeres width to width ratio, 1.06–1.07. Length of metatibia to distance between denticle and metatibial apex 2.75–2.79. Large lateral denticle on metatibia sharp. Metatibial serra-

tion proximal to large lateral denticle present, sharp. Metatibia proximal to denticle in dorsal view concave. First male metatarsomere length to width ratio, 3.98–4.08. First male protarsomere maximum width to width at base ratio, 1.53–1.61. First and second male metatarsomere length to length ratio, 1.78–1.84. First and second male metatarsomere width to width ratio, 0.97–1.02. Third and fourth male metatarsomere length to length ratio, 1.89–1.92.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum strongly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or greater.

Remarks: The type of *C. breviuscula*, as other flea beetle species of Faldermann, is lost. According to Motschulsky (1846) the material used by Faldermann was collected in Armenia and western Iran near Khvoy.

A traditional view on distinctive features of *C. breviuscula* and *C. tibialis* considers two characters: the number of punctures near the eye and the shape of the aedeagus in ventral view. According to this view, *C. tibialis* has 8 to 10 punctures near the eye and the apex of the aedeagus is bent in lateral view and *C. breviuscula* has 3 to 5 punctures near the eye and the apex of the aedeagus is straight in lateral view. Avanesova (1965) analyzed male genitalia and external characters of about 100 specimens collected in the southern part of Russia, Ukraine, Middle Asia, and Caucasus. She reported a number of specimens with intermediate characters (8 punctures and straight genitalia and 3 punctures and bent genitalia) and concluded that *C. breviuscula* and *C. tibialis* represent a single species, with two subspecies which produce a number of intermediate forms in the area of intergradation.

Our observations confirm that a number of punctures near the eye is highly variable and does not correlate with the genitalic characters. It varies within populations and even in a single specimen (i.e. a male from Taman' Peninsula (southern Russia) has 6 punctures near its left eye and 10 near its right eye). However, such specimens have identical aedeagi to the typical *breviuscula*, which is straight in lateral view. The same is true for two males collected in Georgia near the Kura river. Both have straight *breviuscula* type aedeagi, but one has 3 punctures near the eye and another one has 6 punctures near the left eye and 5 near the right one. A population from Iran near Bandra-e Shah contains specimens with both 3 punctures and straight aedeagi and with 8 punctures and bent aedeagi. A population sampled near Tuz Lake in central Turkey contains specimens with bent aedeagi and 6 punctures near the eye and specimens with straight aedeagi and 5 or 6 punctures near the eye. If we plot the distribution of these forms on the map, it becomes clear that true *C. tibialis* occurs from Western Europe to Kazakhstan. In Western Europe it is the only species in this group. *Chaetocnema breviscula* has an extensive range that covers almost all the Palearctic Region except most of Europe.

Our observations undoubtedly confirm that *C. breviscula* and *C. tibialis* are distinct species, but they cannot be identified based on the number of punctures near the eyes. In addition to these two species and *C. delarouzei* and *C. scheffleri*, we recognize one more species that is described below (*C. lubischevi* sp. nov.). All these species can be best recognized by the shape of the aedeagus, proportions of the body, and some small details of punctation of pronotum and elytra. In *C. breviscula*, the aedeagus is generally cylindrical along its length with the apex abruptly cut in lateral view, with its tip directed straight forward, the ventral side has a very short impression situated only at the apex, and its tip narrowing abruptly in ventral view (it is nearly as thick in *C. tibialis* and sharply bent ventrally in lateral view, with a relatively long and well recognized ventral impression; in *C. delarouzei* the aedeagus is very similar in lateral view, but its tip is oval, without a denticle in ventral view; in *C. scheffleri*, the ventral groove occupies the entire length of the aedeagus and the tip is bent ventrally; and in *C. lubischevi*, the aedeagus is much flatter apically than basally in lateral view, and its tip narrows gradually in ventral view).

The type material of *C. turhalus* Iriboz could not be found and we based our concept of this species on the original description (Iriboz 1934). *Chaetocnema turhalus* fits well within the species limits of *C. breviscula* with which we here synonymize it.

Material: ARMENIA: 1) 1300m, 12.VIII.1975, leg. T. Vasarhelyi, 2) *Chaetocnema breviscula*, Gruev det. (1 ZSMC); GEORGIA: 1) Georgia, Ahaldaba, 22.VII.1983, Konstantinov A., 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2009 (5 USNM); 1) Rustavi, poima Kura river, 28.VII.1983, Konstantinov A., 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2009 (8 USNM); IRAN: 1) N Iran, C. Elburz, Gazanak, Haraz Chay, 1400 m, 20-21. 7. 70, 2) Loc. no. 63, Exp. Nat. Mus. Praha (2 USNM); KAZAKHSTAN: 1) Sev. Kazakhstanskaya oblast', VII.1965, leg. V. Palij, 2) *Chaetocnema breviscula*, Gruev det. (2 ZSMC); MONGOLIA: 1) Mongolia East

Aimak, 40 km SW of lake Sangin-Dalai-Nur, 25.VII.1971, Kozlov., 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2009 (2 ZMAS); 1) Mongolia Gobi Altai Aimak, Scharga 1.IX.1977, leg. G. Molnar, 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2009 (3 USNM); NORTH KOREA: 1) Dzikha-ri, sudl. Chongdzin, 9.VI.1975, Josifov, 2) *Chaetocnema breviscula*, Gruev det. (31 ZSMC); 1) Nampho, 13.IX.1986, leg. B. Gruev, 2) *Chaetocnema breviscula*, Gruev det. (5 ZSMC); RUSSIA: 1) Russia, Krasnodar krai, Taman' penin. 12km., S. Taman' "Volna", Salsola kali 15.VI.2000, M. Volkovitsh & M. Cristofaro (1 USNM); 1) Russia, Krasnodar reg., Taman' Pen., env. of Goluitskoe, 31.V.1999, 45°16'20"N 37°22'52"E, leg. A. Konstantinov, 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2009 (1 USNM); 1) Ulyanovsk, ostr. Seredysh, 19.VIII.1951, Al. Lubischew, 2) *Chaetocnema breviscula* (Fald.), det. A. Lubischew, 2) *Chaetocnema breviscula* (Fald.), det. A. S. Konstantinov, 2004 (1 USNM); TURKEY: 1) Turkey, 34 km N., Aksaray, 38 56'00"N, 33 33'00"E 18.VI.1999, saline habitat, leg. A. Konstantinov, 2) *Chaetocnema*, 5-punctures, 1-straight, det. A. S. Konstantinov, 2004 (74 USNM); TURKMENISTAN: 1) Tedzen, March 20, 1992, leg. Snizek (1 BCPF); 1) Bucharia, Repetek, 4.1900, Coll. Hauser., 2) *Chaetocnema breviscula*, Heikertinger det. (3 NHMW); 1) Bucharia, Repetek, coll. Hauser., 2) *Chaetocnema breviscula*, Heikertinger det. (2 NHMW); 1) Bucharia, Repetek, coll. J. Fodor, 2) *Chaetocnema breviscula*, Gruev det. (1 ZSMC); 1) Transkaspian (1 BMNH); 1) Turkmenistan (rest illegible), 9 May 1989, leg. U. Heinig (4 BCPF); 1) Transkaspia, Saramsakli, 2) BLANK green label, 3) *breviscula*, Penispröp., 4) 1953 Coll., Heikertinger (1 NHMB); UKRAINE: 1) Crimea, VI.1965, leg. V. Palij, 2) *Chaetocnema breviscula*, Gruev det. (2 ZSMC); 1) Poltava, May 14, 1923 (1 BMNH).

***Chaetocnema chlorophana* (Duftschmid)**

Fig. 20, Map 14

- chlorophana* Duftschmid 1825:286 (type locality: Austria, "österreichische Fauna" [partim?]; type lost *teste* Doguet 1994); as *Haltica*
- amoena* Weise 1886:756 (as variety of *chlorophana*; type locality: not given; type depository: ZMHB); Heikertinger (1951:210)
- kolbei* Weise 1886:756 (as variety of *chlorophana*; type locality: not given; type depository: ZMHB); Heikertinger (1951:210)
- laeta* Weise 1886:756 (as variety of *chlorophana*; type locality: Austria, "Wien"; type depository: ZMHB); Heikertinger 1951:210 (synonymized)
- syriaca* Demaison 1896:13 (type locality: "Syrie, Akbès"; type depository: MNHN); Heikertinger 1951:210 (synonymized); as *Choetocnema* [sic]

Distribution: Albania, Austria (Redtenbacher 1849), Belgium (Derenne 1963), Bulgaria (Gruev 1988b), Croatia (Gruev 1992), Czech Republic (Čížek 2006), France

(Doguet et al. 1996), Germany, Greece (Mohr 1965, Gruev 1990a), Hungary (Vig 1996), Iraq (Gruev 1995b), Israel (Furth 1985), Italy (Biondi 1990a), Luxembourg, Romania (Gruev et al. 1993), Russia (Caucasus) (Medvedev 1970), (European part) (Konstantinov 1988), Serbia (Gruev 1992), Slovakia (Mohr 1966), Slovenia (Gruev & Döberl 1997), Syria, Tunisia, Turkey (Gruev 1992), Ukraine.

Host plants: *Calamagrostis epigeos* (Heikertinger 1925); *Agrostis*, *Dactylis glomerata* (Heikertinger 1951); *Calamagrostis arundinacea* (Nonveiller 1978); *Carex vulpina*, *Dactylis glomerata*, *Festuca pratensis*, *Alopecurus pratensis*, *Juncus*, *Molinia coerulea*, *Scirpus holoschoenus* (Nonveiller 1978); *Cyperus longus*, *Cyperus* spp., *Carex stenophylla* (Furth 1985); Poaceae, Cyperaceae, Juncaceae (Biondi 1990a).

Description: Body length (excluding head) 2.54–3.11 mm; width 1.28–1.83 mm. Ratio of elytron length at suture to maximum width, 2.72–3.00. Ratio of pronotum width at base to length at middle, 1.79–1.85. Ratio of length of elytron at suture to length of pronotum at middle, 3.25–3.29. Ratio of width of both elytra at base to width of pronotum at base, 1.06–1.09. Ratio of maximum width of both elytra to maximum width of pronotum, 1.20–1.29.

Elytron greenish without yellow, blueish without yellow, rarely bronzish without yellow or copperish without yellow. Pronotum greenish, blueish, rarely bronzish or copperish. Antennomere 1–2 partly dark brown, rarely completely yellow. Antennomere 3 partly brown, rarely completely yellow. Antennomere 4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.81–0.87. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.22–1.28. First and second male protarsomere length to length ratio, 1.21–1.28. First and second male protarsomeres

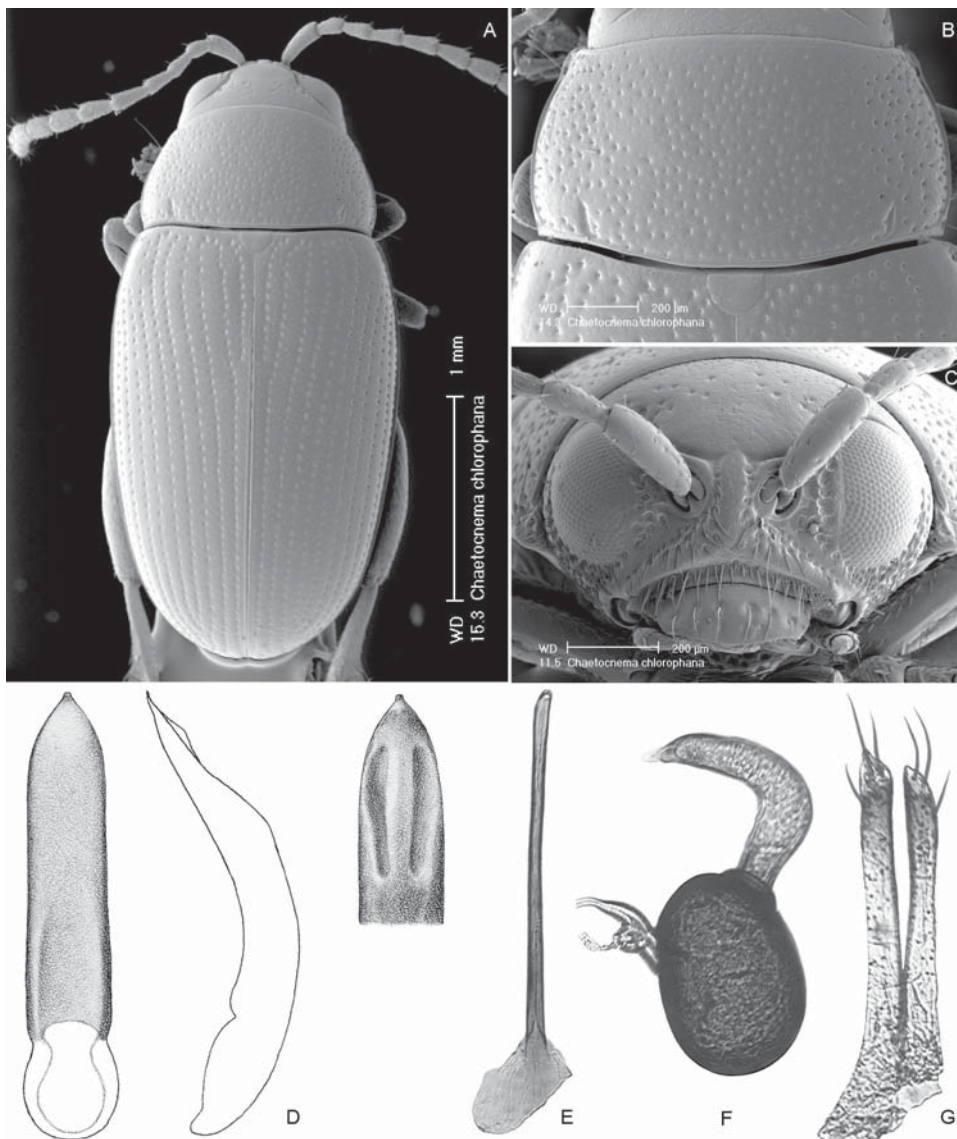
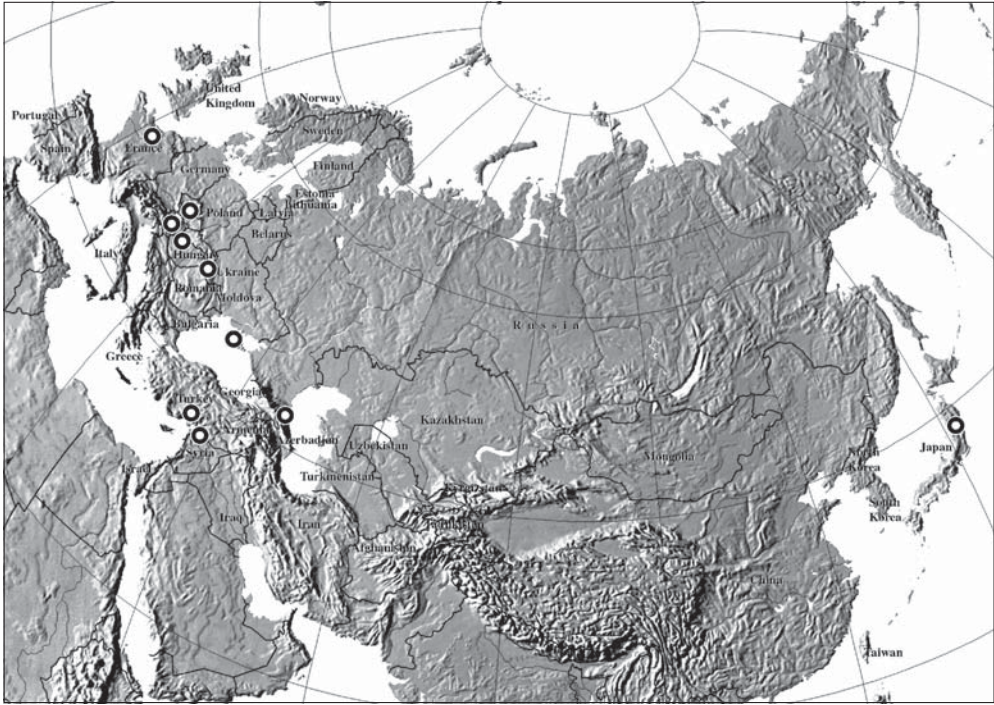


Figure 20. *Chaetocnema chlorophana*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

width to width ratio, 1.12–1.18. Length of metatibia to distance between denticle and metatibial apex 3.01–3.08. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.34–2.42. First male protarsomere maximum width to width at base ratio, 2.63–2.68. First and second male



Map 14. *Chaetocnema chlorophana*

metatarsomere length to length ratio, 1.61–1.67. First and second male metatarsomere width to width ratio, 1.13–1.19. Third and fourth male metatarsomere length to length ratio, 1.19–1.25.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus absent; poorly developed with obtuse margins in basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to side of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotiza-

tion of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded or subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex or slightly narrowing from base; more or less parallel-sided. Length of posterior sclerotization greater than width.

Remarks: *Chaetocnema chlorophana*, along with *C. pelagica*, can be easily separated from most other species based on a variety of features. The main distinguishing characters of the aedeagus are as follows: the lateral sides are parallel to each other; the ventral groove is shallow and wide and present only near base; the apex is very narrow with a small knob.

Material: AUSTRIA: 1) ? Modling, 2) *Chaetocnema chlorophana*, Heikertinger det. (12 NHMW); 1) Gglb. 1890, Rekawinkel, 2) *Chaetocnema chlorophana*, Heikertinger det. (12 NHMW); 1) Rekawinkel bei Wien, 2) *Chaetocnema chlorophana*, Heikertinger det. (2 NHMW); 1) Wein (3 BMNH); 1) Mödling, 2) *Chaet. chlorophana*, det. Heiktgr., 3) Collectio Kaufmann, 4) Coll. Mus. Vindob. (3 NHMW); CZECH REPUBLIC: 1) Moravia: m. Vranov, August 11-13, 1993, leg. H. Studnickova (1 BCPF); 1) Moravia: Musov, July, 1991, leg. Kopecky (1 BCPF); FRANCE: 1) Marais du Cerisaie (Forest de Rambouillet), April 18, 1984, leg. M. Bergeal (40 BCPF); 1) Moigny, Ft. St. Germain, Ft. Notre Dame, March-September, leg. M. Bergeal (10 BCPF); HUNGARY: 1) Bukki N. P. Miskolo, Nagy-mezo, 850m, Lolio-Cynosuretum, fuhalozas 1984.VII.19, leg. Adam et Hamori, 2) *Chaetocnema chlorophana*, Gruev det. (6 ZSMC); 1) Hortobagy N. P. Egyek, Ohati erdo fuhalozas, 1975.V.6, leg. Draskovits, 2) *Chaetocnema chlorophana*, Gruev det. (9 ZSMC); 1) Mariabesnyo, Hung Dr. Fodor, coll. Dr. J. Fodor, 2) *Chaetocnema chlorophana*, Gruev det. (6 ZSMC); RUSSIA: 1) Daghestan, 20 km Konahkent, 1000 m 16.VII.1985, 2) *Chaetocnema chlorophana* Dft., No23 (1 USNM); Male 1) Novo-Mikhailov, 24.VI.1982, A. Konstantinov, 2) *Chaetocnema chlorophana* Duft. (4 USNM); UKRAINE: 1) Zakarpatskaya obl. Toaskaya gora, 25.VIII.55, leg. Palij, 2) *Chaetocnema chlorophana*, Gruev det. (1 ZSMC); UKRAINE (CRIMEA): 1) Gelendzhik, s. Markhat, 9.VI-54, 2) Ch. (*Tlanoma*) *chlorophana* Dft., I. Lopatin det., 1964 (1 USNM).

***Chaetocnema compressa* (Letzner)**

Fig. 21, Map 15

compressa Letzner 1847:85 (Type locality: Silesia [see Letzner 1892:416]; type depository: ZMHB); as *Haltica* (*Plectroscelis*)

tarda; Bach 1859:160 (proposed as junior synonym, unavailable under Article 11.6)

tarda Foudras 1860:224 (not Motschulsky 1845a; type locality: "Allemagne"; type depository: MNHN); Allard 1860:564 (synonymized)

Distribution: Austria (Redtenbacher 1858), Belarus (Lopatin 1986), Bulgaria (Gruev 1992), Czech Republic, France (Foudras 1860), Germany (Weise 1886), Greece (Gruev

1990a), Hungary, Kazakhstan (Lopatin 1977b), Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (European part) (Konstantinov 1988), Serbia (Gruev 1992), Slovakia (Mohr 1966), Switzerland, Ukraine (Carpathians) (Konstantinov 1988).

Host plants: *Carduus nutans* (Everts 1903); *Poa pratensis* (Nonveiller 1960).

Description: Body length (excluding head) 1.83–2.06 mm; width 0.94–1.11 mm. Ratio of elytron length at suture to maximum width, 2.42–2.55. Ratio of pronotum width at base to length at middle, 1.33–1.41. Ratio of length of elytron at suture to length of pronotum at middle, 1.96–2.13. Ratio of width of both elytra at base to width of pronotum at base, 1.04–1.06. Ratio of maximum width of both elytra to maximum width of pronotum, 1.16–1.18.

Elytron black, without metallic luster, rarely blueish without yellow. Pronotum black, without metallic luster, rarely blueish. Antennomere 1 completely brown. Antennomere 2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 3.08–3.10. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 6–10 times smaller than distance between them.

Elytra with sides parallel to each other. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.48–1.52. First and second male protarsomere length to length ratio, 1.07–1.11. First and second male protarsomeres width to width ratio, 1.04–1.08. Length of metatibia to distance between denticle and metatibial apex 2.10–2.14. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.48–2.52. First male protarsomere maximum width to width at base ratio, 1.78–1.82. First and second male metatarsomere length to length ratio, 1.31–1.35. First and second male metatarsomere width to width ratio, 1.05–1.09. Third and fourth male metatarsomere length to length ratio, 1.45–1.49.

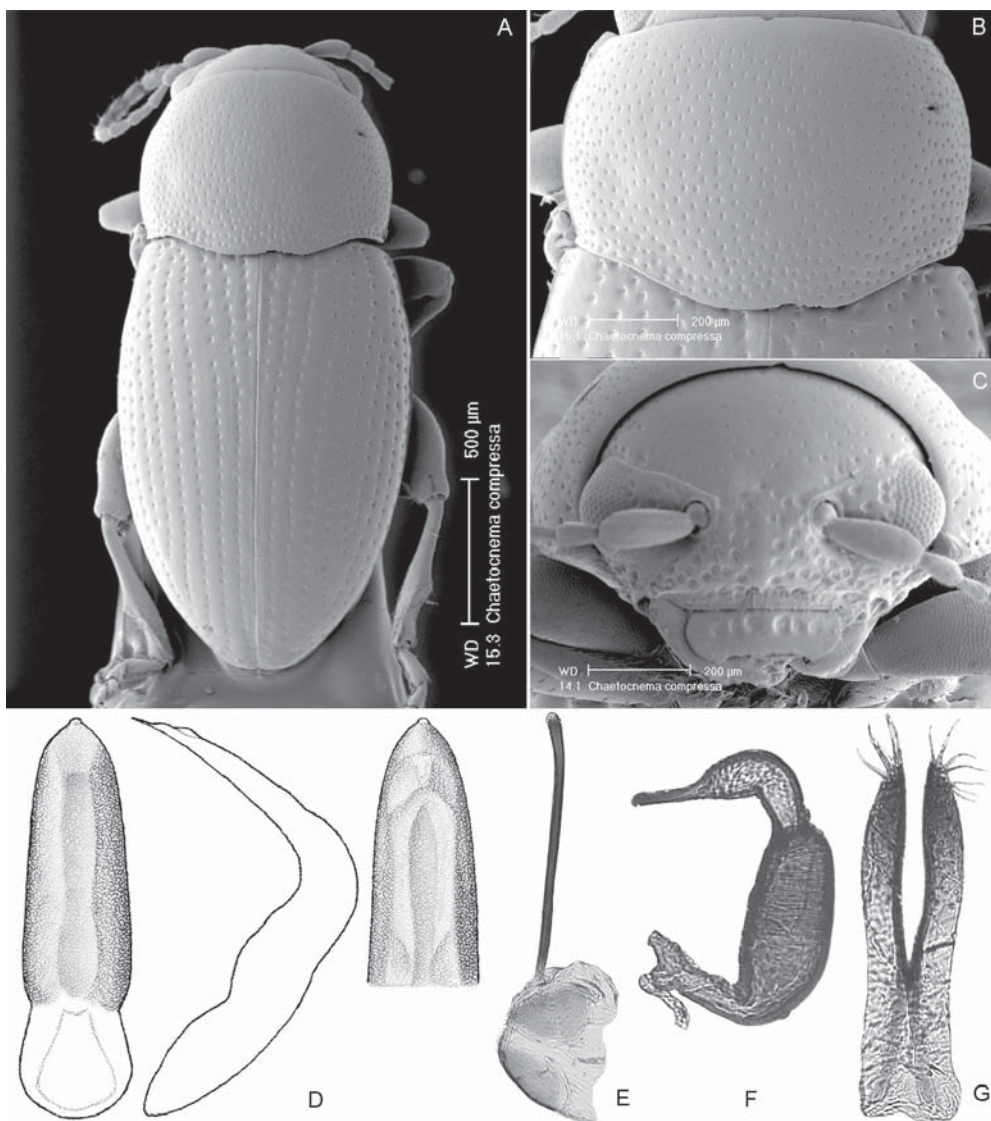
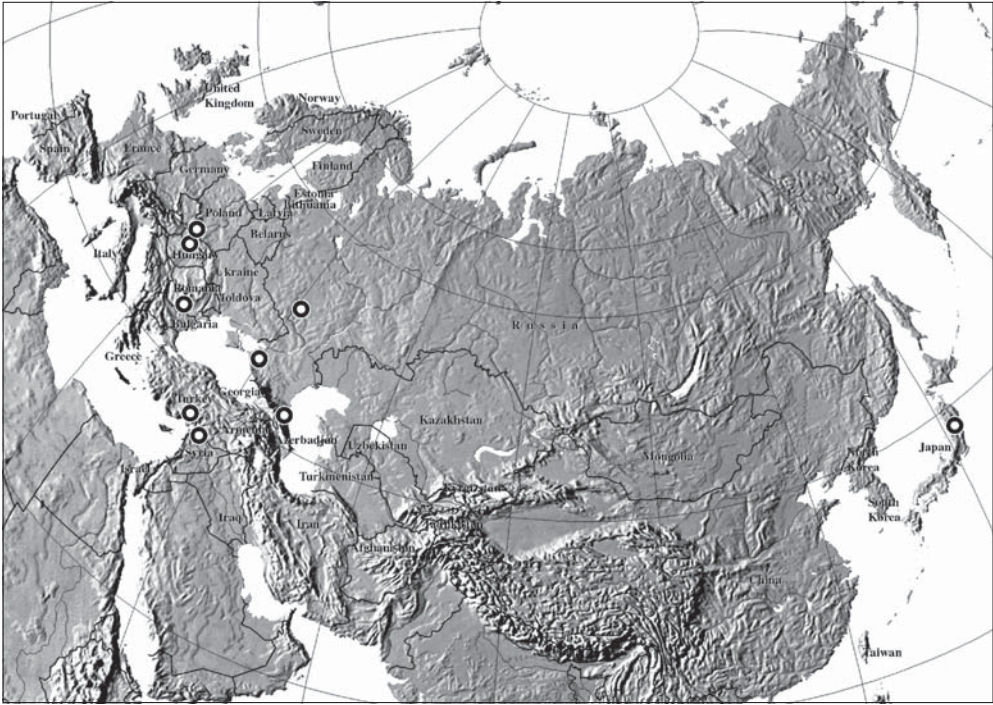


Figure 21. *Chaetocnema compressa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with obtuse margins in basal half. Apical, middle, and basal part of longitudinal groove of



Map 15. *Chaetocnema compressa*

equal width. Width of longitudinal groove at middle subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view abruptly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus elongately, acutely deltoid. Midpart of vaginal palpus (before apex) parallel-sided at base, abruptly narrowing towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema compressa* is unique among Palearctic *Chaetocnema*. It has an uncommon, slightly swollen pronotum with evenly convex lateral sides being

widest in the middle, nearly completely dark appendages, frons covered with fine punctures, and a very faint suprafrontal sulcus. Its aedeagus in lateral view is sharply bent in the middle.

Material: HUNGARY: 1) Hortobagy N.P. Ujszentmargita, Margitai erdo, liget, fuhalo, 1975.IV.21-22, leg. Hamon, 2) *Chaetocnema compressa*, Gruev det. (3 ZSMC); POLAND: 1) Moravia, Bilowitz, Dr. Fleischer, 2) *compressa*, ab. *semimetallescory*, m., 3) ab. *semimetallesc.* Fleischer, Cotype, 4) *compressa* ab., det. Heiktgr., 5) 1953 Coll., Heikertinger (1 NHMB); ROMANIA: Male 1) Roumanie, Comana Vlasca, A. L. Montandon, 2) Brooklyn Museum, Collection 1929, 3) *Chaetocnema compressa* Letzn. (6 USNM); 1) Roumanie, Comana Vlasca, A. L. Montandon, 2) *Chaetocnema compressa*, 3) *compressa*, det. Heiktgr., 4) blank blue label, 5) 1953 Coll., Heikertinger (1 NHMB); RUSSIA: 1) Boronezh oblast' Ramon', VI.1956, leg. V. Palij, 2) *Chaetocnema compressa*, Gruev det. (1 ZSMC); 1) Krasnodarski krai, st. Kaluzhskaya, 30.IV.1973, Korotyaev, 2) *C. compressa* Ltzn., det. Konstantinov (1 ZMAS).

***Chaetocnema concinna* (Marsham)**

Fig. 22, Map 16

concinna Marsham 1802:196 (type locality: England [from title of work]; type depository: unknown); as *Chrysomela*
dentipes Koch 1803:38 (type locality: "Departemente vom Donnersberge..." [from title of work]; type depository: unknown); as *Haltica*; Heikertinger 1951:211 (synonymized)
lewisii Chûjô 1942:31 (type locality: "Sapporo, Hakkaido, Japan"; type depository: TAIT); Gressitt & Kimoto 1963:782 (synonymized)
semirufescens Pic 1909:155 (as variety of *semicaerulea*; type locality: "Orsières, Valais"; type depository: MNHN); Heikertinger 1951:211 (synonymized)

Distribution: Albania (Gruev 1992), Armenia, Azerbaijan, Austria (Redtenbacher 1858), Belarus (Lopatin 1986), Bosnia and Herzegovina (Gruev 1992), Bulgaria (Gruev 1988b), Canada (introduced; White 1996), Croatia (Gruev 1979), Czech Republic, Denmark (Hansen 1927), England (Stephens 1839), Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Georgia (Gruev & Döberl 1997), Germany (Weise 1886), Hungary (Gruev 1992), Ireland (Anderson et al. 1997), Israel (Furth 1985), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Latvia (Pütele 1971), Liechtenstein, Lithuania, Luxembourg, Macedonia (Gruev 1992), Moldova, Montenegro (Gruev 1979), Morocco (Jolivet 1967), Netherlands (Leesberg 1881), Norway (Klefbeck & Sjöberg 1957), Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (Iablokoff-Khznorian 1968) (Caucasus) (Konstantinov 1988), Serbia (Gruev 1979), Slovakia, Slovenia (Gruev 1992), Spain (Biondi 1990c), Sweden (Gruev & Döberl 1997), Switzerland (Stierlin 1886), Turkey (Gruev & Kasap 1985), Turkmenistan

(Lubischev 1963), Ukraine (Crimea, Carpathians) (Konstantinov 1988), United States (introduced; White 1996).

Host plants: *Brassica rapa*, *Urtica*, *Humulus lupulus* (Bargagli 1878); *Rumex maritimus*, *R. obtusifolius*, *R. silvester*, *R. crispus*, *R. acetosa*, *R. hydrolaphum*, *Polygonum amphibium*, *P. lapathifolium*, *P. persicaria*, *P. mite*, *P. aviculare*, *P. hydropiper* (Heikertinger 1925; Jolivet 1967); *Rheum officinale*, *Rumex crispus*, *Polygonum aviculare* (Nonveiller 1960); *Rheum rhaponticum*, *Fagopyrum tataricum*, *Beta vulgaris* (Fogato & Leonardi 1980); Polygonaceae, Chenopodaceae (Biondi 1990a); *Polygonum cuspidatum*, *Rumex arifolius*, *R. acetosa*, *Atriplex* (Doguet 1994).

Description: Body length (excluding head) 2.03–2.34 mm; width 1.12–1.22 mm. Ratio of elytron length at suture to maximum width, 2.56–2.61. Ratio of pronotum width at base to length at middle, 1.62–1.68. Ratio of length of elytron at suture to length of pronotum at middle, 3.00–3.03. Ratio of width of both elytra at base to width of pronotum at base, 1.15–1.21. Ratio of maximum width of both elytra to maximum width of pronotum, 1.41–1.48.

Elytron bronzish without yellow, rarely greenish without yellow. Pronotum bronzish, rarely greenish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint or deep laterally, shallow in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.00–1.04. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.54–1.59. First and second male protarsomere length to length ratio, 1.79–1.83. First and second male protarsomeres width to width ratio, 1.31–1.35. Length of metatibia to distance between denticle and metatibial apex 2.60–2.65. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle

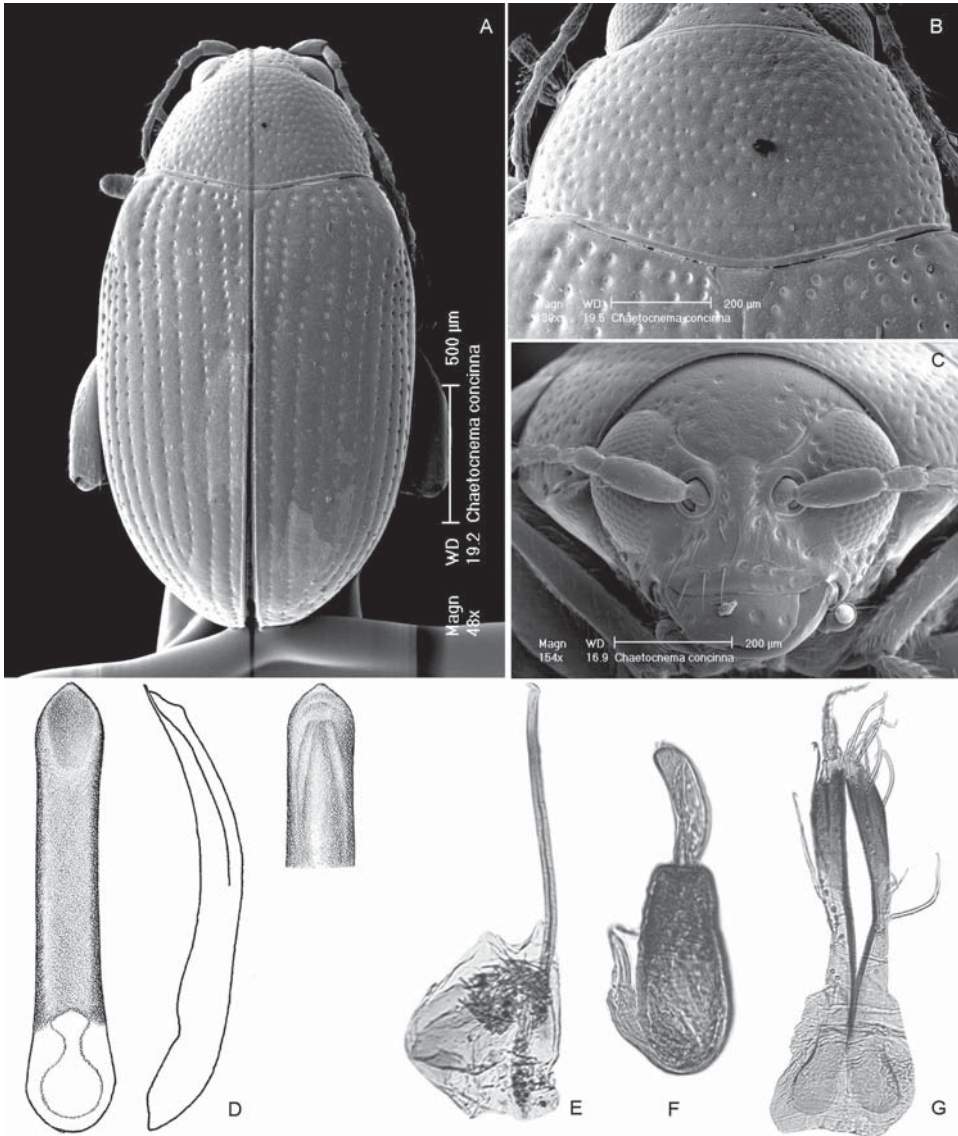
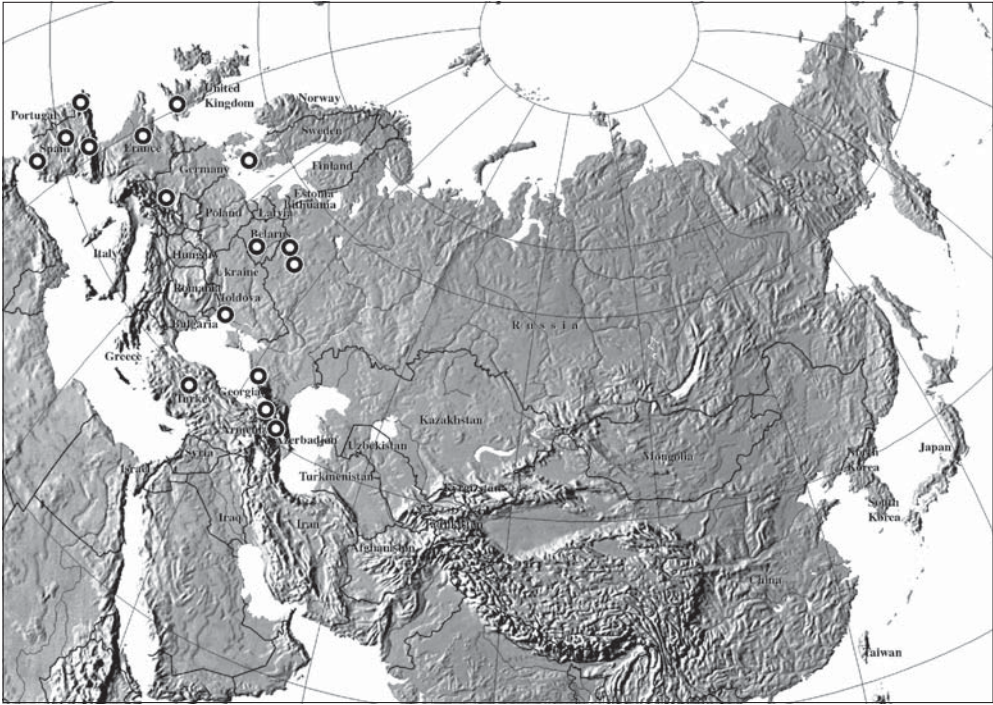


Figure 22. *Chaetocnema concinna*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

convex in dorsal view. First male metatarsomere length to width ratio, 2.87–2.96. First male protarsomere maximum width to width at base ratio, 2.15–2.21. First and second male metatarsomere length to length ratio, 1.81–1.85. First and second male metatarsomere width to width ratio, 1.00–1.05. Third and fourth male metatarsomere length to length ratio, 1.64–1.69.



Map 16. *Chaetocnema concinna*

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening compared to width just before apical declivity smaller. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute, transverse wrinkles absent from basal and apical parts of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum arrow shaped, not much wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly;

slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization smaller than width of anterior sclerotization.

Remarks: The type material of *C. concinna* has not been found. Booth & Owen (1997) compared this species with *C. picipes* Stephens and mentioned that there is no Marsham specimen of *C. concinna* in the Stephens collection in the Natural History Museum in London (BMNH). However, Doguet (1994, p. 480) mentions a male lectotype being in the BMNH. Also unresolved is the fate of the type material of *H. dentipes* (Koch), assumed to be a junior synonym of *C. concinna* by Heikertinger (1951). It should be noted that *H. dentipes* is not available under the authorship of Olivier, as implied by Heikertinger (1951). Olivier (1808, p. 711) referred to Koch (1803) [as Sturm, Entom. Helf. [sic] 2, p. 38, no. 18]. *Haltica dentipes* sensu Olivier [= *Plectroscelis chlorophana* Duftschmid 1825, teste Heikertinger (1951)] is a subsequent usage of *H. dentipes* Koch.

We agree with Lubischev (1963) on distinguishing characters and distribution of *C. concinna*, *C. picipes*, and *C. heptapotamica*. The main characters are the shape of the apical part of the aedeagus (dilate in *C. concinna* and *C. heptapotamica* and parallel-sided in *C. picipes*) and the shape of the first male protarsomere (smaller in *C. heptapotamica* compared to *C. concinna* and *C. picipes*). As for the distribution, *C. concinna* is much more common in Europe than in the Asian part of the Palearctic. The most eastern specimen known to us was collected in Turkmenistan. Therefore it seems that records of *C. concinna* from Russian Far East, Mongolia, China, and Korea indeed belong to either *C. picipes* or *C. kimotoi*. Therefore we remove *C. chalceola* Jacoby from synonymy to *C. concinna* and place it into synonymy of *C. picipes*. The aedeagus of *C. kimotoi* is generally similar to the aedeagus of *C. concinna*, but it is thicker in lateral view, without well-developed impression on the apex and with a better developed apical denticle with a flat apex. We also confirm that *C. concinna* was introduced into the United States and Canada.

Material: ARMENIA: 1) Armenia: Near Khashab, Sweeping at 1500 m in wet prairie: 39°51.65'N, 44°56.25'E, May 28, 1999, Steven W. Lingafelter, Coll., 2) *Chaetocnema concinna* (Marsh.), A. Baselga 2009 (21 USNM); AZERBAIJAN: 1) Az. SSR, 18.V.1986, Lenkoran', Konstantinov A., 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (2 USNM); 1) Az. SSR, 18.V.1986, Lerik, Konstantinov A., 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (2 USNM); BELARUS: 1) Belarus': Minsk env., Minskoe more, 5.V.1982, 54°00'00"N 27°17'00"E, dry swamp, irrigat. canal, leg. A. Konstantinov, 2) *Chaetocnema concinna*, det. A. S. Konstantinov, 2004 (45 USNM); 1) Belarus: Gomel terr. Turov env. 23.VI.1980 52°04'00"N 27°44'00"E, Beloe fish farm, leg. A. Konstantinov, 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (1 USNM); 1) Belarus': Minsk env. "Svalka", 9.V.1980 54°00'00"N 27°17'00"E, wet to dry meadow, leg. A. Konstantinov, 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (1 USNM); 1) Belarus': Minsk env. Minskoe more, 7.IX.1980 54°00'00"N

27°17'00"E, dry meadow, swamp, leg. A. Konstantinov, 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (1 USNM); FRANCE: 1) Forest Rambouillet, Chantemesle, Mesnil St. Pere, Glivevoisin, Bugeat, Dompierre sur Avre, Ft. Notre Dame, Etg. St. Quentin, April - June, leg. M. Bergeal (20 BCPF); GEORGIA: 1) Abhazia, Pshu, 18.VII.1984, meadow, Konstantinov A., 2) *Chaetocnema concinna* (Marsh.) det. Konstantinov, A. 1986 (1 USNM); 1) Georgia, Surami, 25.VII.1983, pasture, Konstantinov A., 2) *Chaetocnema concinna* (Marsh.) det. Konstantinov, A. 1986 (3 USNM); GERMANY: 1) Niederbayern, Umg. Abensberg, 28.8.1976, leg. Döberl, 2) *Chaetocnema concinna*, det. Döberl 1978 (3 USNM); RUSSIA: 1) Kaluga (South Russia), 1916, leg. N. I. Sacharrov (2 BMNH); 1) Tula (South Russia), 1916, leg. N. I. Sacharrov (2 BMNH); 1) [Caucasus] Krasnaya Polyana 8.VI.1984, Konstantinov A., 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (1 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino, 26.VII.1981, Skotinino, dry hill, 55°04'50"N 35°00'18"E leg. A. Konstantinov, 2) *Chaetocnema concinna* (Marsham) det. A.S. Konstantinov (1 USNM); SPAIN: 1) "Andalucía", 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 MNCN); 1) A Coruña, Bertamiráns, 30-IV-1997, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) A Coruña, Corrubedo, Vixán, 18-IV-1996, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 02-V-1997, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 05-VIII-1996, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 29-IV-1997, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (8 BASC); 1) A Coruña, Oleiros, Nos, 11-X-1997, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) A Coruña, Sobrado, 21-VI-1998, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (4 BASC); 1) Lugo, Cospeito, 04-VII-2001, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (11 BASC); 1) Lugo, O Incio, Toldaos, 22-VIII-1999, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); 1) Lugo, Portomarín, León, 12-IV-1992, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (2 BASC); 1) Madrid, Escorial, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (2 MNCN); 1) Navarra, Falces, 06-X-1996, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (6 BASC); 1) Ourense, Laza, Camba, 09-VII-2003, leg. Baselga, 2) *Chaetocnema concinna* (Marsh.), Baselga det. (1 BASC); SWEDEN: 1) Ring Sjo, June 12, 1938 (1 BMNH); TURKEY: 1) Turkey: Road 38-54 between Mustafapasa & Cemil, 5-10 km S. Mustafapasa, sweeping around pond, 15 June 1999: Lingafelter, 2) *Chaetocnema concinna* (Marsh.), A. Baselga 2009 (14 USNM); UKRAINE: 1) Mayaki, right bank of Dnepr, 21.VII.50, 2) *Chaetocnema concinna*, 2) pencil label *Chaetocnema concinna* No. 29 (1 USNM); UNITED KINGDOM: 1) Surrey, Dorset (West Bexington), Kent (Dartford), Shoreham, South Wales, Awbridge, Hants (Gonum lapathifolium), Farnham (200 BMNH); USA: 1) Oregon, Marion Co., 3 mi E Mt. Angel, 1 October 2004, J. Bernard, J. Todd, 2) feeding on leaves of strawberry, 3) *Chaetocnema concinna* (Marsham), det. A. S. Konstantinov, 2004 (1 USNM).

***Chaetocnema concinnicollis* (Baly)**

Fig. 23, Map 17

concinnicollis Baly 1874:208 (type locality: Japan, "Nagasaki"; type depository: BMNH); as *Plectroscelis*

philoxena Baly 1877a:595 (type locality: China, "Kin Kiang"; type depository: BMNH); as *Plectroscelis*; Heikertinger 1951:215 (synonymized)

kaibarensis Madar 1960:48 (as subspecies of *concinnicollis*; type locality: "Kaibara, Hikami-gun, Hyogo Pref., Honshu, Japan"; type depository: not given); Kimoto and Takizawa 1994: 320 (synonymized)

Distribution: China (Chen 1934, Gruev 1981), India (Takizawa 1983), Japan (Chûjô & Kimoto 1961), Nepal (Scherer 1969), North Korea (Gruev 1990b, 1994), Russia (Primorsky Krai) (Gruev & Döberl 1997), Saudi Arabia (Doguet 1979), Taiwan (Chûjô 1935), Thailand (Chûjô 1961), Vietnam (Scherer 1969).

Host plants: *Raphanus sativa acanthiformis* (Gressitt & Kimoto 1963); *Digitaria adscendens* (Ohno & Hirano 1970).

Description: Body length (excluding head) 1.60–1.84 mm; width 0.95–1.13 mm. Ratio of elytron length at suture to maximum width, 2.11–2.20. Ratio of pronotum width at base to length at middle, 1.38–1.42. Ratio of length of elytron at suture to length of pronotum at middle, 2.48–2.70. Ratio of width of both elytra at base to width of pronotum at base, 1.19–1.23. Ratio of maximum width of both elytra to maximum width of pronotum, 1.41–1.44.

Elytron bronzish without yellow or copperish without yellow. Pronotum bronzish or copperish. Antennomere 1–2 completely yellow. Antennomere 3–4 completely yellow, rarely partly brown. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown, rarely brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.87–2.00. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures larger than distance between them.

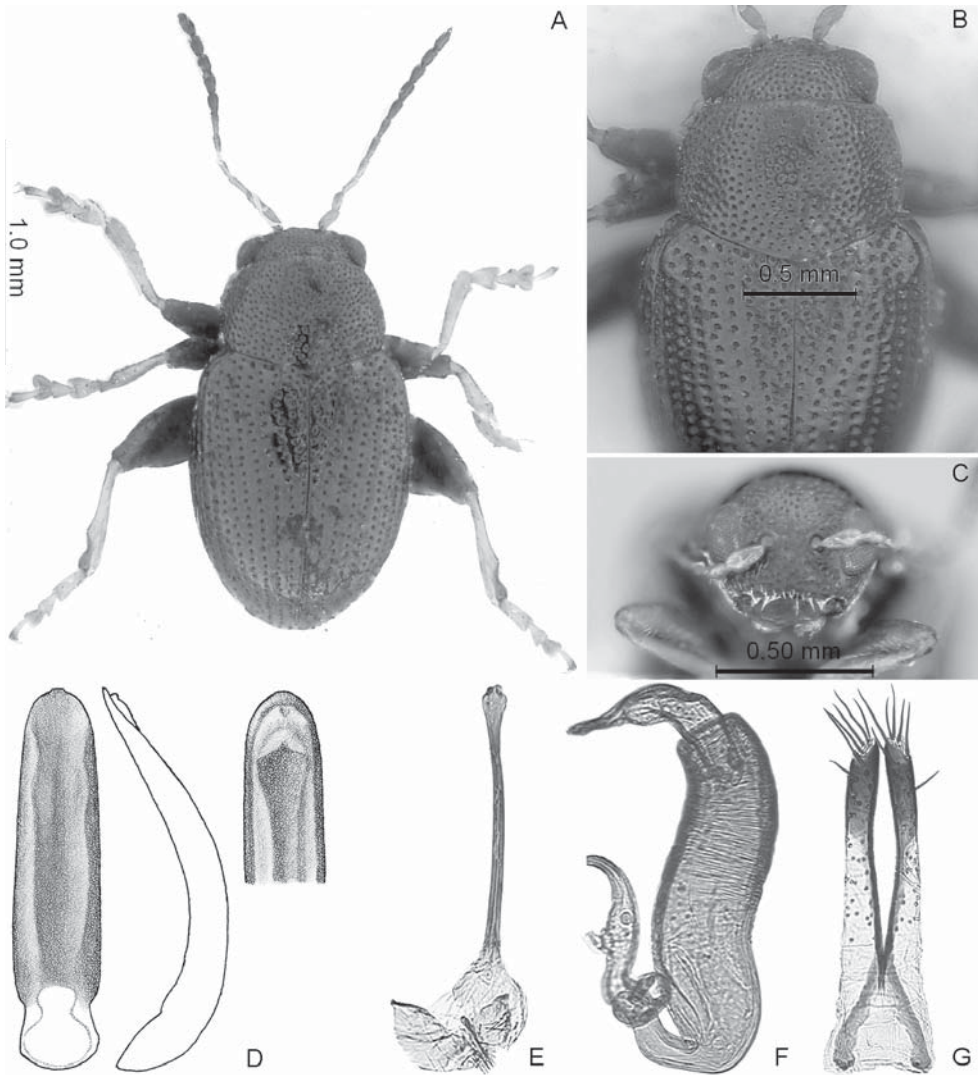
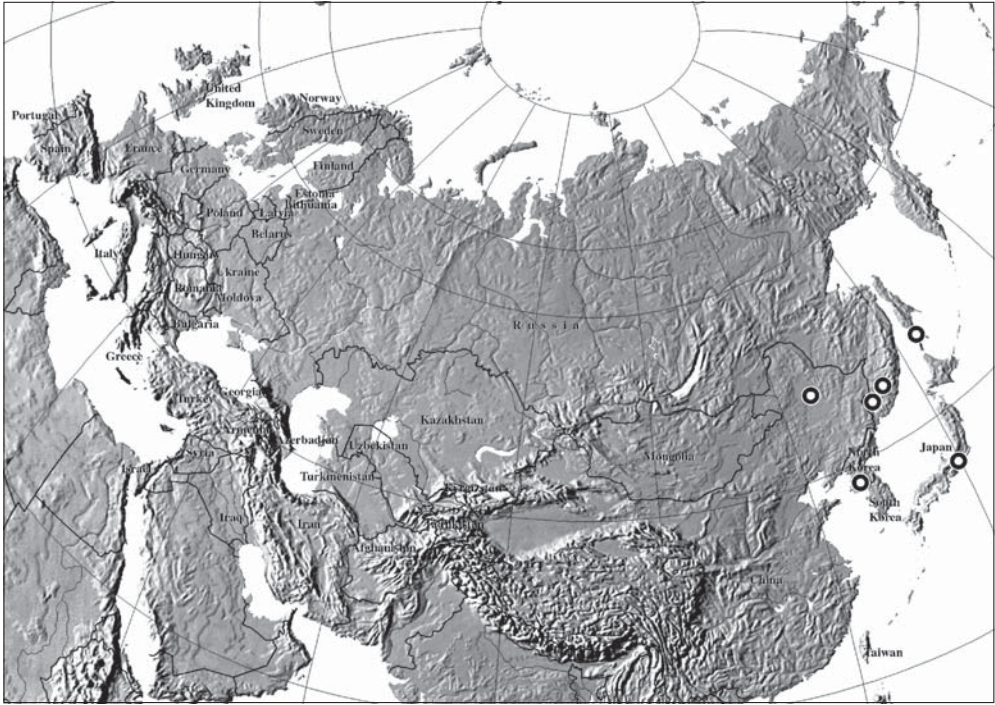


Figure 23. *Chaetocnema concinnicollis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.15–1.21. First and second male protarsomere length to length ratio, 1.21–1.36. First and second male protarsomeres width to width ratio, 1.27–1.33. Length of metatibia to distance between denticle and



Map 17. *Chaetocnema concinnicollis*

metatibial apex 2.25–2.29. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.40–2.45. First male protarsomere maximum width to width at base ratio, 2.12–2.16. First and second male metatarsomere length to length ratio, 1.11–1.15. First and second male metatarsomere width to width ratio, 0.98–1.03. Third and fourth male metatarsomere length to length ratio, 1.72–1.77.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically and basally convex. Ventral longitudinal groove in apical half, middle, and basal half of aedeagus well-developed with sharp margins; deep in apical half and middle. Apical part of longitudinal groove wider than basal; middle part narrower than basal and apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, short, flat on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: We based our concept of *C. concinnicollis* on specimens from the Russian Far East, which correspond well with the characters mentioned in the original description. *Chaetocnema concinnicollis* can be separated from all Palearctic species by the shape of the aedeagus which has a wide ventral groove with sinusoidal sides and a flat and very short apical denticle.

Chûjô's (1951:42) misspelling of *C. concinnicollis*, as *C. coccinelloides*, was cited by Gruev & Döberl (1997:82) as an available name, this time misspelled as *C. coccinelliformis*. Because these names are associated with references to an available name, they are not nomenclaturally available themselves.

Material: CHINA: 1) Harbin, Heilungjiang, May 29, 1966, May 5, 1966, September 19, 1965, leg. P. M. Hammond (4 BMNH); 1) Insufficient Data, leg. Baly (1 BMNH); 1) 3310 [fan-shaped blue label], 2) N. China: P. M. Hammond., B. M. 1967-215., 3) Heilungkiang, Harbin, 19.9.65., P. M. Hammond, 4) *Chaetocnema concinnicollis* Baly, det. B. Gruev (2 BMNH); JAPAN: 1) Idzu, July 1910, leg. S. Akiyama (1 BMNH); 1) Insufficient Data, 1910, leg. Baly (1 BMNH); 1) [Mingur = Illegible], 2) Japan., G. Lewis, 1910-320., 3) *Plectroscelis concinnicollis* Baly, 4) *C. concinnicollis* Baly, BM, 5) 6 Konstantinov, habitus and pronotum im. (1 BMNH); NORTH KOREA: 1) Kaesong, Mts. Pakyon, 20 km NE from Kaesong, 11.IX.1971, No 261, leg. S. Horvatovich, et J. Papp, 2) *Chaetocnema concinnicollis*, Gruev det. (1 ZSMC); 1) Tesson, 35 km SE Pyongyan, water basin, 4.VII.1977, No.343 - netting in grasses, Dely & Draskovits, 2) *Chaetocnema concinnicollis*, Gruev det. (6 ZSMC); RUSSIA: 1) Primorskij Krai, July 28, 1990, leg. Boukal (8 BCPF); 1) Russia: Sakhalin Island, 20 km S Yuzhno-Saghalinsk, St. Aniva, 15.VIII.1992, A. S. Konstantinov (1 USNM); 1) Russia: Saghalin Island, 30 km S Vuzhno-Saghalinsk, Dachnoe, 16.VIII.1992, A. S. Konstantinov (3 USNM); 1) Russia: Russia Far East, Ussurijsk Reserve d. Kondratenovka, 21.VIII.1992, A. S. Konstantinov (1 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 22.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema concinnicollis* (Baly), A. Baselga 2009 (18 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 20.VIII.1992, A. S. Konstantinov (8 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kondratenovka, 25.VIII.1992, A.

S. Konstantinov (3 USNM); 1) Russia: Russian Far East, Ussurijsk Territory Kamen-Rybolov Region, Khanke Lake, 25-26.VIII.1992, A. S. Konstantinov (12 USNM); 1) Russia: Russian Far East, Ussurijsk Territory Kamen-Rybolov Region, Khanka Lake, 9.VIII.1992, A. S. Konstantinov (4 USNM); 1) Russia: Russian Far East, Ussurijsk Territory, env. Kamen-Rybolov d. Parkhomenko, 28.VIII.1992, A. S. Konstantinov (2 USNM); 1) Ussurijsky nat. park, Kamenushka, 22.VIII.1992, A. Konstantinov leg. (1 USNM); 1) Primor'je, Khanka lake, Kamen' Rybolov, 10.VIII.1975, Lelei, 2) *Chaetocnema concinnicollis* Baly, det. I. Lopatin, 1976 (1 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 24.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema concinnicollis* (Baly), A. Baselga 2009 (7 USNM); 1) Voroshilov, Ussur. 15.VI.31, T. Samojlov, 2) 7 Konstantinov, face image [1 specimen - Male] (2 USNM).

***Chaetocnema conducta* (Motschulsky)**

Figs. 4, 24, Map 18

conducta Motschulsky 1838:180 (type locality: "Arménie"; type lost); as *Haltica foudrasi* Bauduér 1874:clxiii (type locality: not given; type depository: unknown); as *Plectroscelis*; Heikertinger & Csiki 1940:381 (synonymized)
ahngeri Jacobson 1901:139 (type locality: Turkmenistan, "Merw"; type depository: unknown); Heikertinger & Csiki 1940:381 (synonymized)

Distribution: Albania (Gruev 1992), Algeria (Peyerimhoff 1915), Armenia (Heikertinger 1951), Austria (Redtenbacher 1874), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1988b), Croatia (Gruev 1979), Czech Republic (Čížek 2006), Egypt (Alfieri 1976), Ethiopia (Scherer 1979), England, France (Doguet 1994), Greece (Gruev 1990a), Germany (Weise 1886), Hungary (Vig 1996), Iran (Rapilly 1978), Israel (Furth 1985), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Kenya (Scherer 1963), Kyrgyzstan, Macedonia, Moldova, Montenegro (Gruev 1979), Morocco (Jolivet 1967), Portugal, Romania (Gruev et al. 1993), Russia (Lopatin 1960) (Caucasus) (Konstantinov 1988), Serbia (Gruev 1979), Slovakia (Mohr 1966), Slovenia (Gruev 1979), Spain (Bastazo et al. 1993), Switzerland (Stierlin 1886), Syria (Gruev & Döberl 1997), Tajikistan (Lopatin & Tadjibaev 1972), Tanzania, Tunisia, Turkey (Gruev & Kasap 1985), Turkmenistan (Heikertinger 1951), Ukraine (Crimea) (Konstantinov 1988), Serbia.

Host plants: *Eleocharis palustris* (Peyerimhoff 1915); *Carex* sp. (Lopatin 1977b); *Carex vulpina* (Nonveiller 1978); *Carex panicea*, *C. melanostachya*, *C. pallescens*, *Scirpus maritimus*, *Agrostis alba*, *A. tenuis* (Fogato & Leonardi 1980); *Juncus acutus* (Tölg 1938); *Zea mays* (Martelli 1938, Müller 1949-1953); Cyperaceae, Juncaceae, Poaceae (Biondi 1990a); *Carex* (Jolivet 1967); *Cyperus* (Furth 1985).

Description: Body length (excluding head) 1.58–2.08 mm; width 0.91–1.28 mm. Ratio of elytron length at suture to maximum width, 2.57–2.84. Ratio of pronotum

width at base to length at middle, 1.89–1.95. Ratio of length of elytron at suture to length of pronotum at middle, 3.24–3.31. Ratio of width of both elytra at base to width of pronotum at base, 1.09–1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.19–1.32.

Elytron yellow with dark stripe along suture, occupying one or two interspaces near base. Pronotum bronzish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex, rarely wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.76–1.85. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present throughout. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.05–1.08. First and second male protarsomere length to length ratio, 1.41–1.43. First and second male protarsomeres width to width ratio, 1.11–1.19. Length of metatibia to distance between denticle and metatibial apex 2.45–2.51. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.71–2.81. First male protarsomere maximum width to width at base ratio, 1.79–1.83. First and second male metatarsomere length to length ratio, 1.72–1.82. First and second male metatarsomere width to width ratio, 1.00–1.04. Third and fourth male metatarsomere length to length ratio, 1.66–1.69.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove absent from aedeagus. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view sinusoidal near apex. Maximal curvature of aedeagus in lateral view situated medially.

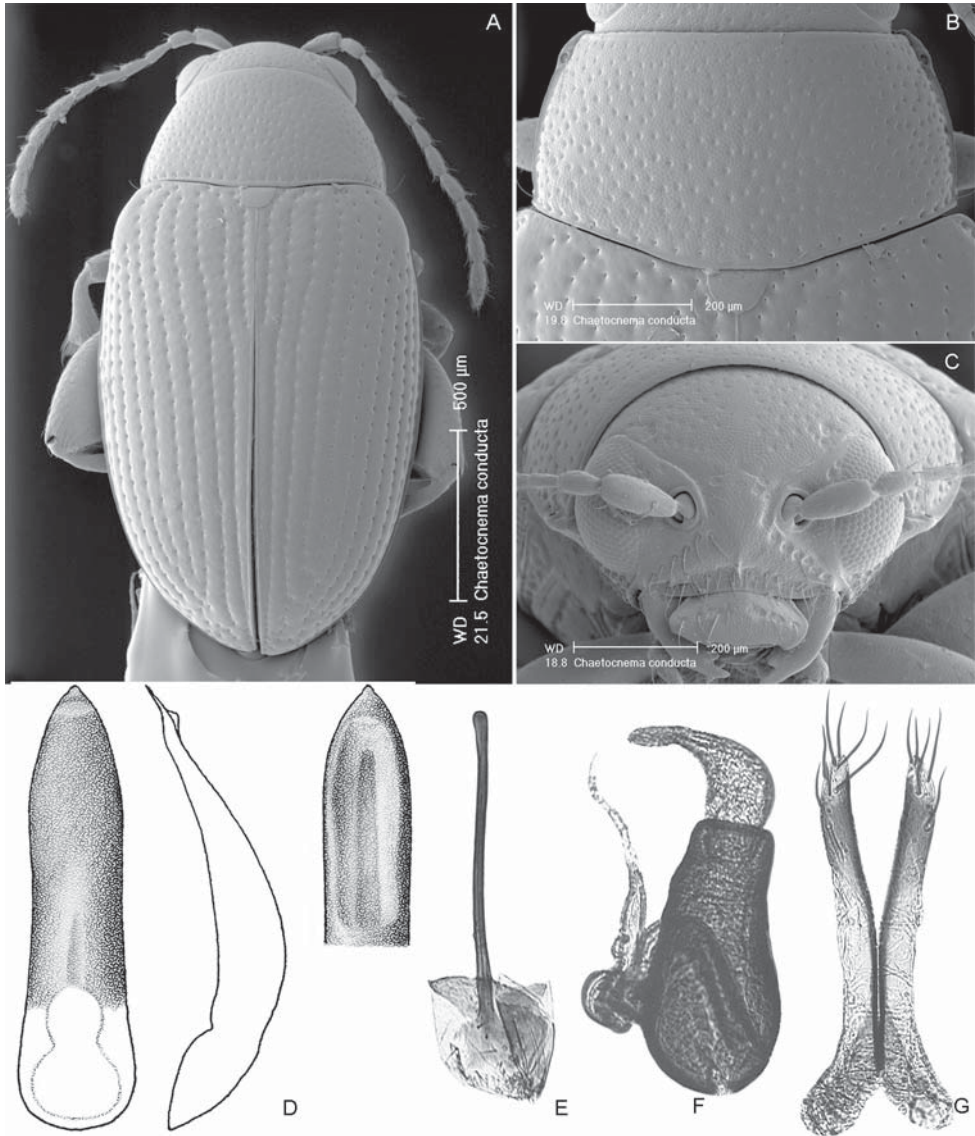
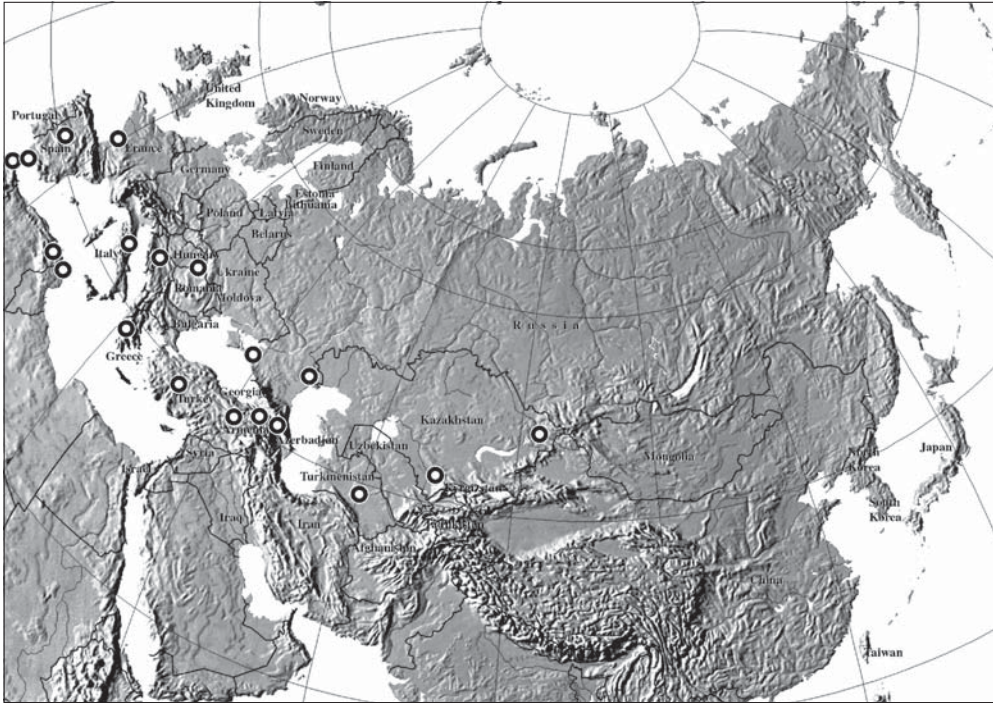


Figure 24. *Chaetocnema conducta*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle straight basally, bent apically. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum slightly curved. Anterior



Map 18. *Chaetocnema conducta*

sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: In the absence of type material, we base our concept of *C. conducta* on specimens from Azerbaijan. Bauduér (1874) proposed *C. foudrasi* as a new name for supposedly misidentified *C. conducta* mentioned in an undisclosed reference to Alard and Foudras. *Chaetocnema conducta* is similar to *C. depressa*, *C. nebulosa*, and *C. orientalis* in having yellow on their elytra. It can be separated from all three species by the aedeagus that has a very narrow ventral groove that is present only basally.

Material: ALGERIA: 1) Azazga, Kabylie (1 BMNH); 1) Oued Mafrag, Annaba, leg. M. Bergeal (18 BCPF); ARMENIA: 1) Armenia: Near Khashab, Sweeping at 1500 m in wet prairie: 39°51'65"N, 44°56'25"E, May 28, 1999, Steven W. Lingafelter, Coll., 2) *Chaetocnema conducta* (Motsch.), det. A. S. Konstantinov, 2009 (6 USNM); 1) Armenia: Zangezur mountains, 1500-1900 m, vil. Khashab 27.V.1999, 39°51'65"N, 44°56'26"E, leg. A. Konstantinov, 2) *Chaetocnema conducta* (Motsch.), det. A. S.

Konstantinov, 2009 (25 USNM); 1) Armenia: Zangezur mountains, 1925 m sub alp. meadow Lusashakh 27.V.1999, 39°51'65"N 44°56'26"E, leg. A. Konstantinov (1 USNM); 1) Dzhervezh, 15.V.1988, Konstantinov (1 USNM); AZERBAIJAN: 1) Az SSR, Lerik, 9.V.1986, Konstantinov leg., 2) *Chaetocnema conducta* Motsch., det. Konstantinov, 1986 (1 USNM); 1) Azerbaidjan: 40 S. Lerik, Talysh Mountains, 14.V.1986 mountain forest, 38°46'31"N 048°24'55"E, leg. Konstantinov & Pisanenko, 2) *Chaetocnema conducta* (Motsch.), det. A. S. Konstantinov, 2009 (4 USNM); FRANCE: 1) Gironde: Le Teichmarais, May 26, 1963, leg. Tempere (15 BCPF); GREECE: 1) Epire: Korytiani, June 7, 1997, leg. B. & M. Bergeal (5 BCPF); 1) Corfu, V. d. Ropa, 2) lg. Winkler, 3) *Chaetocn. conducta* Motsch. (1 USNM); HUNGARY: 1) Hortobagy N.P. Egyek, Ohat 1974.VI.26, Pusztakocsi mocsarak, leg. Mahunka L. et Mahunka S., 2) *Chaetocnema conducta*, Gruev det. (2 ZSMC); 1) Hortobagy N.P. Ujszentmargita, Margitai erdo, fuhalozva 1975.IV.7-7, leg. Draskovits, 2) *Chaetocnema conducta*, Gruev det. (2 ZSMC); ITALY: 1) Umbrien: Castellucio (1400 m), August, 1997, leg. M. Langer (8 BCPF); KAZAKHSTAN: 1) Taranly-kul, distr. Saisson [Zaisan] (1 BMNH); Male (at least 1 of 6). 1) Kazakhstan: 60 km N. Chimkent Karatau mts., Chayan 25.V.1990, leg. A. Konstantinov (6 USNM); Male 1) khr. Karatau, Chayan, 25.V.1990, leg. Konstantinov (2 USNM); MOROCCO: 1) Tangier (5 BMNH); RUSSIA: 1) Astrakhan', 7.V.1928, Entom. obsch. (9 USNM); 1) Russia, Krasnodar reg., Taman Pen, env. of Golubitskoe, 31.V.1999, 45°16'20"N 37°22'52"E, leg. A. Konstantinov (8 USNM); 1) Russia, Krasnodar reg., Taman Pen., env. of Golubitskoe, 31.V.1999, 45°16'20"N 37°22'52"E, leg. A. Konstantinov (2 USNM); 1) Russia: 5km W. Golubitskaya on Azov Sea Peninsula, 45°19.89'N, 37°13.44'E, Sweeping: May 31, 1999, Steven W. Lingafelter, coll., 2) *Chaetocnema*, Det. S. W. Lingafelter (1 USNM); 1) Russia: Korzhevskoe env., Krasnodar Region: 31 May, 1999: 45°12.71'N 37°45.16'E: Sweeping, Steven Lingafelter, Coll. (1 USNM); 1) Russia: Korzhevskoe env., Krasnodar Region: 31 May, 1999: 45°12.71'N 37°45.16'E: Sweeping, Steven Lingafelter, Coll., 2) *Chaetocnema conducta* (Motschulsky), Det. S. W. Lingafelter 2004 (1 USNM); Male (at least 1 of 2). 1) Russia: 5km W. Golubitskaya on Azov Sea Peninsula, 45°19.89'N, 37°13.44'E, Sweeping: May 31, 1999, Steven W. Lingafelter, coll. (2 USNM); Male (at least 1 of 2). 1) Russia: Krasnodar Region, Temryuk District: 15m, 45°16.59'N, 37°23.51'E, Sweeping: May 31, 1999, Steven W. Lingafelter (2 USNM); 1) Russia, Krasnodar reg., Taman' Pen. env. of Temryuk, Military Hill, 31.V.1999, leg. A. Konstantinov (3 USNM); SERBIA: 1) Serbia, Morovic, July 7, 1958, leg. R. L. Coe (1 BMNH); SPAIN: 1) Algeciras, July, November, December (3 BMNH); 1) Madrid, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (1 MNCN); 1) Madrid, Aranjuez, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (5 MNCN); 1) Madrid, Canal, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (1 MNCN); 1) Madrid, Lucero, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (1 MNCN); 1) Segovia, Villacastín, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (1 MNCN); 1) Toledo, Quero, 2) *Chaetocnema conducta* (Motsch.), Baselga det. (1 MNCN); SUDAN: 1) Sennar, 2) *Chaetocnema conducta*, Furth det. (4 BMNH); TUNISIA: 1) Tabarka, Kairouan, April

1994, leg. Daniellson (4 BCPF); TURKEY: 1) Turkey. 10 km SW Erzurum 08.VI.1999, 1900 m, subalpine meadow, leg. A. Konstantinov (4 USNM); 1) Turkey. 5 km N Askale, 07.VI.1999, pass 1500 m, fields along river, leg. A. Konstantinov (6 USNM); 1) Turkey. 8 km S Askale, 07.VI.1999, pass 1600 m, 39°56'79N 40°45'88E, leg. A. Konstantinov, 2) *Chaetocnema conducta* (Motsch.), det. A. S. Konstantinov, 2009 (4 USNM); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov (16 USNM); 1) Turkey: 5 km NW Askale, Road to Erzurum: 1700 m, 39°56.48'N, 40°35.80'E, June 7, 1999: Lingafelter, 2) *Chaetocnema conducta* (Motschulsky), Det. S. W. Lingafelter 2004 (1 USNM); TURKMENISTAN (?): 1) Turkestan, Staudinger, 2) *conducta* m. schmalem Nahtsaum, det. Heiktgr., 3) 1953 Coll., Heikertinger (1 NHMB); 1) Turkestan, Reitter Leder., 2) blank blue label, 3) Ahngeri, Penisrøp, 4) *conducta* mit der Type der Ahngeri verglichen und, det. Heiktgr., identisch befunden., 5) 1953 Coll., Heikertinger (1 NHMB).

***Chaetocnema confusa* (Boheman)**

Fig. 25, Map 19

confusa Boheman 1851:234 (type locality: "Westerby", Sweden "Oelandia"; type depository: unknown); as *Plectroscelis*

Distribution: Austria (Redtenbacher 1874), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina, Croatia (Gruev 1992), Denmark (Hansen 1927), England (Fowler 1890), France (Doguet 1994), Germany (Stein & Weise 1877), Greece (Gruev 1990a), Hungary (Mohr 1966), Italy (Biondi 1990a), Latvia (Pūtele 1971), Luxembourg, Netherlands (Leesberg 1881), Poland (Bartkowska 1994), Russia (north of the European part) (Konstantinov 1988), Serbia (Gruev 1992), Slovakia (Mohr 1966), Spain (Baselga & Novoa 2006), Sweden (Boheman 1851), Switzerland, Ukraine (Crimea) (Konstantinov 1988), Turkey.

Host plants: *Carex panicea*, *C. pallescens* (Fogato & Leonardi 1980); Cyperaceae, Juncaceae (Biondi 1990a); *Juncus* (Doguet 1994).

Description: Body length (excluding head) 1.91–2.43 mm; width 1.13–1.43 mm. Ratio of elytron length at suture to maximum width, 2.30–2.64. Ratio of pronotum width at base to length at middle, 1.33–1.34. Ratio of length of elytron at suture to length of pronotum at middle, 2.10–2.39. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.19. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31–1.64.

Elytron bronzish without yellow, black, without metallic luster, rarely blueish without yellow. Pronotum bronzish, black, without metallic luster, rarely blueish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

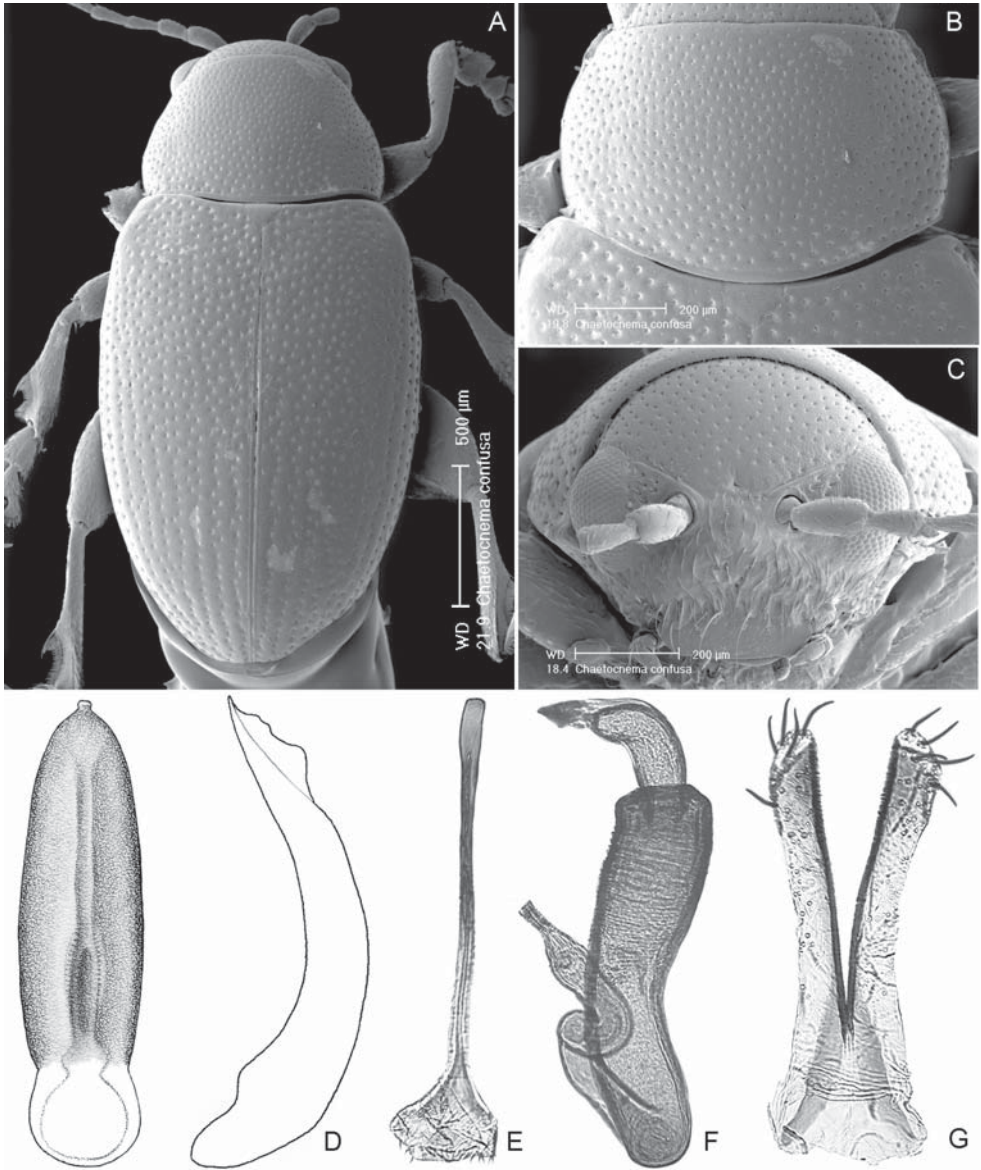
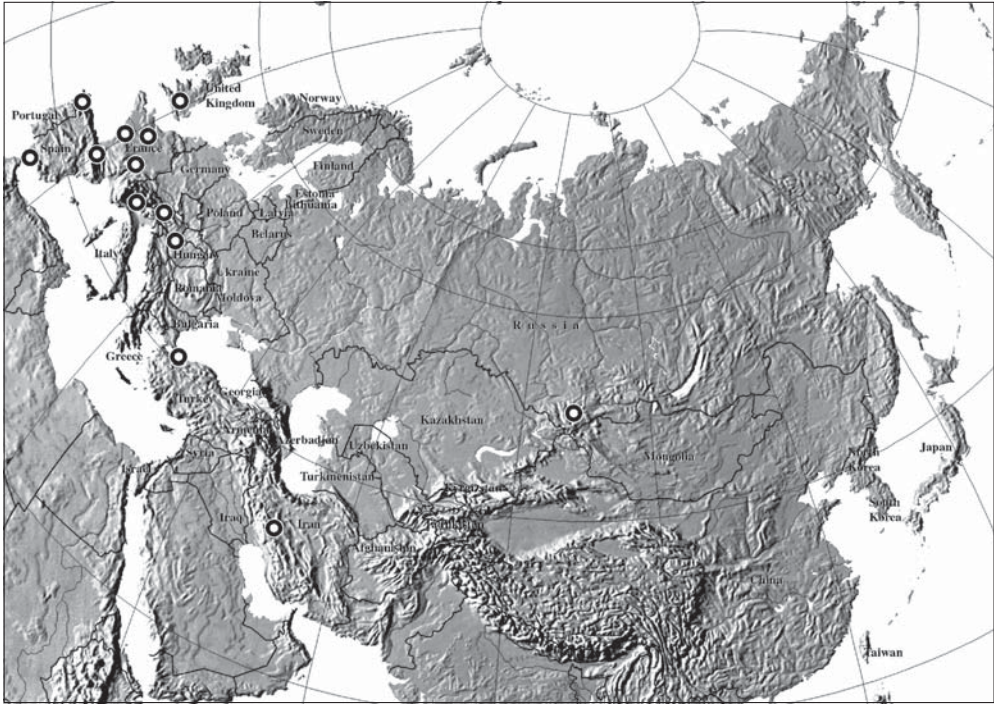


Figure 25. *Chaetocnema confusa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.50–2.56. Frons evenly covered with



Map 19. *Chaetocnema confusa*

relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.22–1.27. First and second male protarsomere length to length ratio, 1.33–1.46. First and second male protarsomeres width to width ratio, 1.30–1.45. Length of metatibia to distance between denticle and metatibial apex 2.38–2.43. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.00–2.15. First male protarsomere

maximum width to width at base ratio, 2.69–2.73. First and second male metatarsomere length to length ratio, 1.56–1.59. First and second male metatarsomere width to width ratio, 1.10–1.21. Third and fourth male metatarsomere length to length ratio, 1.54–1.70.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically convex; flat, oblique at middle; basally convex. Ventral longitudinal groove at base, middle, and apex of aedeagus well-developed, deep, with sharp margins. Apical part of longitudinal groove narrower than basal; middle part narrower than basal, as wide as apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent from apical part. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection or widening into amorphous sclerotization. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus ensiform; slightly and evenly curved along length. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema confusa* can be separated from other Palearctic species by the unusual shape of the aedeagus with convex lateral sides (in ventral view) and a ventral groove that is very narrow (many times narrower than the distance between the side of the groove and the side of the aedeagus).

Material: AUSTRIA: 1) ? Nussdorfer Moor bei Salzburg, 2) *Chaetocnema confusa*, Heikertinger det. (2 NHMW); FRANCE: 1) Bilheres, Plateau du Benou, June 30, 1996, leg. B. et M. Bergeal (4 BCPF); 1) Chatel de Neuvre, May 26, 1987, leg. M. Bergeal (1 BCPF); 1) Guethay, Basses Pyrenn. (1 BMNH); 1) Marais du Cerisaie, November 1, 1987, leg. M. Bergeal (1 BCPF); 1) Rambouillet, July 1984, leg. M. Bergeal (4 BCPF); 1) Sidiailles, May 1986, leg. M. Bergeal (1 BCPF); 1) St. Christophe, May 11, 1986, leg. M. Bergeal (1 BCPF); 1) Limoges, Bugeat de Viam, March, April, May 1988, leg. M. Bergeal (8 BCPF); 1) Limoges, Bugeat, L'Echameil, November 1, 1987, leg. M. Bergeal (1 BCPF); 1) Limoges, Bugeat, l'Echamp, April 28, 1989, leg. M. Bergeal (4 BCPF); 1) Limoges, Bugeat, May 28, 1986, leg. M. Bergeal (1 BCPF); HUNGARY: 1) Kiskunsagi N.P. Kiskoros, Szuscierdo, mocsaras ter fuhalozas 1978.VII.10, leg. Toth, 2) *Chaetocnema confusa*, Gruev det. (1

ZSMC); IRAN: 1) S, 2) SW Iran, Zagross Mts, Sisakht, 2400 m, 13.-15. 6. 1973, 3) Loc. no. 240, Exped. Nat. Mus. Praha, 4) *Chaetocnema confusa* Boh., det. I. Lopatin, 1988 (1 USNM); ITALY: 1) Vedano Olona, Varese VI.64., Italia A. Olexa, 2) *Chaet. confusa*, J. Král det. 83 (2 USNM); RUSSIA: 1) Chuya km 516 Mezhtuerik, Altai, 7.VII.1966, 2) *Ch. confusa* Boh. (2 JKHC); SPAIN: 1) Gibraltar, leg. J. J. Walker (3 BMNH); 1) A Coruña, Dodro, 30-VIII-1996, leg. Baselga, 2) *Chaetocnema confusa* (Bohem.), Baselga det. (1 BASC); 1) Ourense, A Mezquita-A Canda, 13-V-2000, leg. Baselga, 2) *Chaetocnema confusa* (Bohem.), Baselga det. (3 BASC); 1) Ourense, A Mezquita-A Canda, 16-VII-2000, leg. Baselga, 2) *Chaetocnema confusa* (Bohem.), Baselga det. (1 BASC); 1) Pontevedra, Pontearreas-Prado, 09-V-1999, leg. Baselga, 2) *Chaetocnema confusa* (Bohem.), Baselga det. (4 BASC); TURKEY: 1) Constantinople [Istanbul], April, 1902 (1 BMNH); 1) Maltepe, April, 1902 (1 BMNH); UNITED KINGDOM: 1) Sussex, Tilgate, Wimbledon, Surrey, Chobham, Surrey, New Forest, Berks (Windsor Forest) (150 BMNH).

***Chaetocnema costulata* (Motschulsky)**

Fig. 26, Map 20

costulata Motschulsky 1860:234 (type locality: Russia, Siberia, "Daourie"; type depository: unknown); as *Plectroscelis*.

sonkulica Palij 1968:19 (type locality: Kyrgyzstan, Son-Kulj Lake, Inner Tien-Shan; type repository: unknown). **New synonym**

Distribution: Afghanistan (Gruev 1982, 1988a), China (Inner Mongolia: Amdo; Kansu; Kirin: Harbin) (Král 1967b), Korea (Gruev 1980), Mongolia (Král 1965), Kyrgyzstan (Palij 1968), Russia (Irkutsk Distr., Sayan Mts., Transbaikalia, Buriatia, Tuva, Yakutia, Dauria, Maritime Prov., Kamchatka, Amurland, Sakhalin) (Motschulsky 1860).

Host plants: unknown.

Description: Body length (excluding head) 2.00–2.63 mm; width 1.13–1.41 mm. Ratio of elytron length at suture to maximum width, 2.51–2.61. Ratio of pronotum width at base to length at middle, 1.28–1.37. Ratio of length of elytron at suture to length of pronotum at middle, 2.51–2.53. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.13. Ratio of maximum width of both elytra to maximum width of pronotum, 1.36–1.53.

Elytron bronzyish without yellow. Pronotum bronzyish. Antennomere 1–2 completely yellow, rarely partly dark brown. Antennomere 3–4 completely yellow, rarely partly brown. Antennomere 5 partly brown, rarely completely brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of

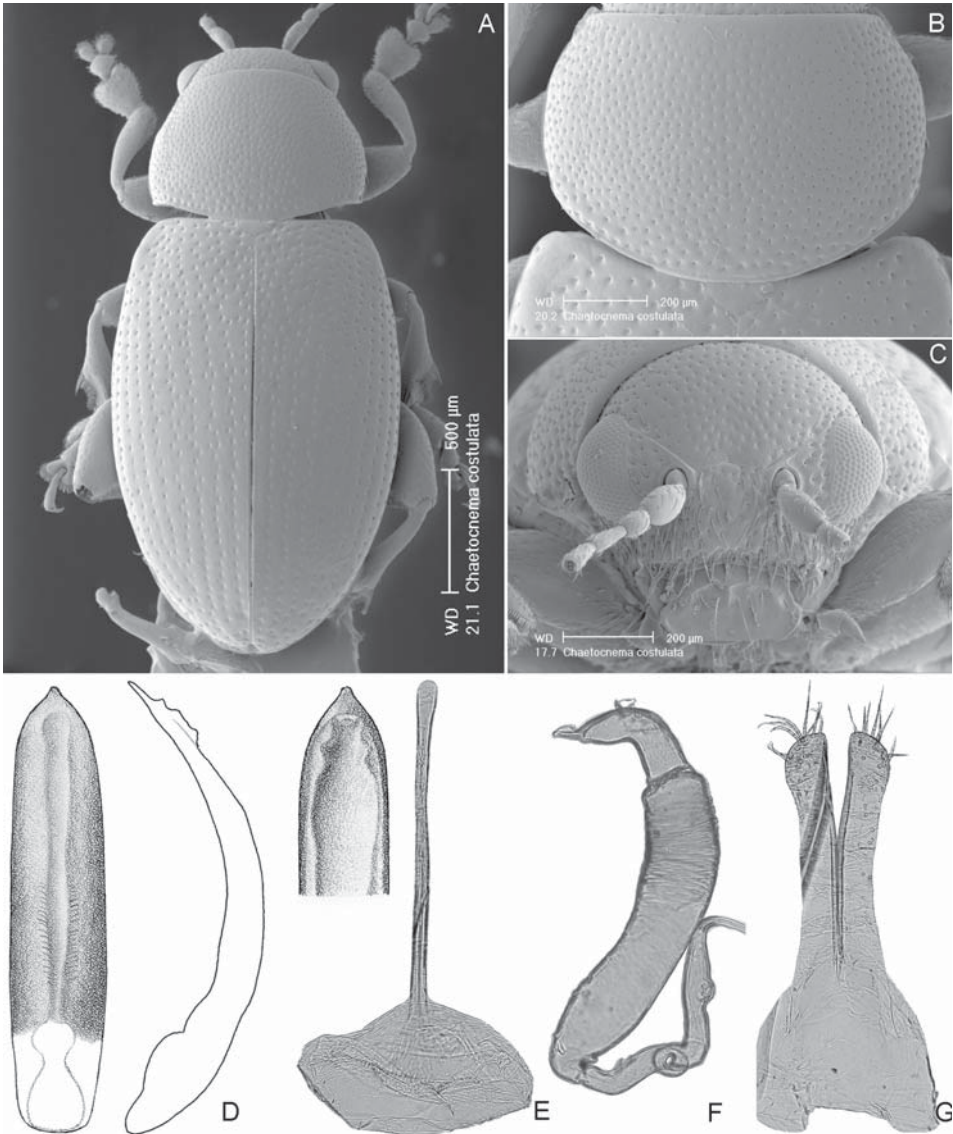
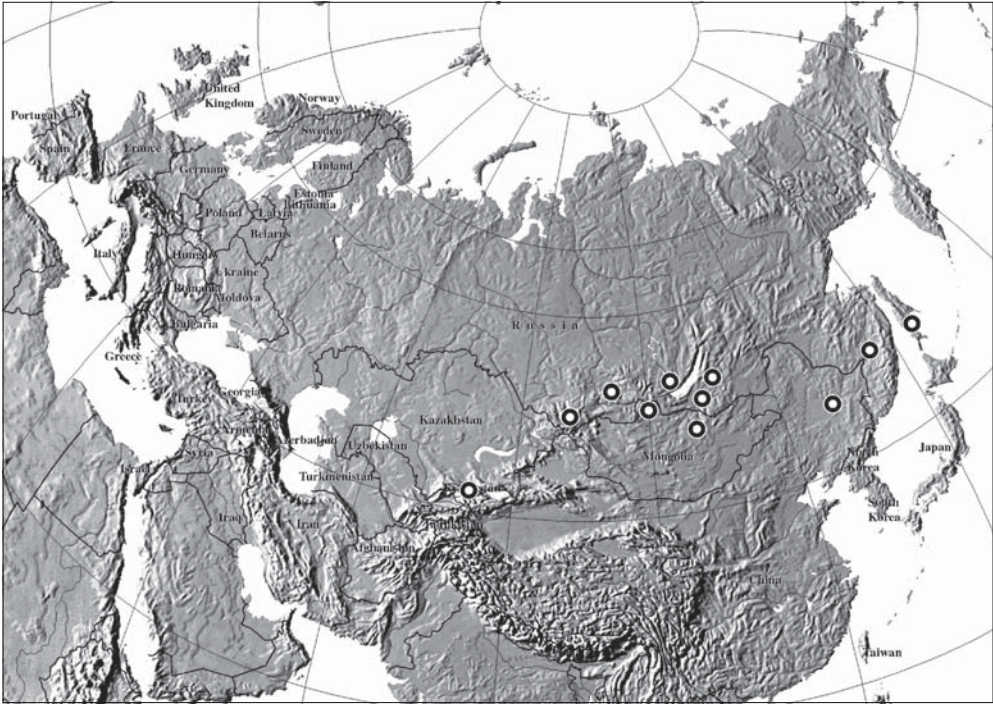


Figure 26. *Chaetocnema costulata*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

antennal socket (including surrounding ridge), 2.22–2.33. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without



Map 20. *Chaetocnema costulata*

longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through fifth rows of punctures confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.09–1.14. First and second male protarsomere length to length ratio, 1.43–1.63. First and second male protarsomeres width to width ratio, 1.37–1.43. Length of metatibia to distance between denticle and metatibial apex 2.22–2.28. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.18–2.24. First male protarsomere maximum width to width at base ratio, 3.96–4.04. First and second male metatarsomere length to length ratio, 1.56–1.60. First and second male metatarsomere width to width ratio, 1.25–1.29. Third and fourth male metatarsomere length to length ratio, 1.88–1.96.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually, rarely abruptly. Ventral surface of aedeagus lateral to median groove apically and medially flat, horizontal; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; basally well-developed, with sharp margins. Apical and middle part of longitudinal groove as wide as basal; middle part narrower than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, narrow, flat on top; straight in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent from apical part. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus ensiform. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization about as great as width. Width of posterior sclerotization smaller than width of anterior sclerotization.

Remarks: Among Palearctic species, *C. costulata* is very similar to *C. aridula*. The only character that can be used to separate these two species is the shape of the denticle on the apex of the aedeagus. The denticle is narrow in *C. costulata* and wide in *C. aridula*.

According to the original description (Palij 1968), the only known holotype of *C. sonkulica* was deposited in the collection of the Institute of Zoology of the Ukrainian Academy of Sciences. However it is not there (V. Korneev personal communication). In the absence of the type material, we based our concept of *C. sonkulica* on the original description. It fits very well with *C. costulata* with which we here synonymize it.

Material: CHINA: 1) Heilongjiang, Sept. 12, 1980 (1 BMNH); MONGOLIA: 1) Chentejsky ajmak del Moron-gol, July 1985, leg. B. Malec (2 BCPF); 1) Mongolia, Chovsgol aimak, am see Tunamal nuur, 25 km SW von Somon Scharga, 1950 m m, Exp. Dr. Z. Kaszab, 1968, 2) Nr 996, 21.VI-15.VII. 1968, 3) *costulata* Motsch., det. J. Kral, 4) *Chaetocnema costulata* (Motsch.), det. A. S. Konstantinov, 2009 (1 USNM); RUSSIA: 1) Altai, Aktas, August 10-17, 1993, leg. Snizek (4 BCPF); 1) Khabarovsk, June 1974, leg. Schimanovsk (1 BCPF); 1) Transbaikal, Siberia, no data (3 BMNH); 1) Bur.-Mongol. ASSR, Tamir, 27.VIII.1928, F. Luk'yanovich, 2) *Chaetocnema costulata* Motsc, I.K. Lopatin det. 1968 (1 ZMAS); 1) Tuva, Tandinskii r-on, pos. Bai-Khak, 14.VII.1959, N.

N.Filippov, 2) *Chaetocnema costulata* Motsch, A. Lubischew det. (1 ZMAS); 1) isl. Saghlin, 16.VIII.92, Dachnoe, Konstantinov (1 USNM); 1) Russia: Altai, env. Kosh-Agach, 21.V.1989, S. Saluk, 2) *Chaetocnema costulata* (Motsch.), det. A. S. Konstantinov, 2009 (2 USNM); 1) Russia: Altai, env. Kosh-Agach, 25.V.1989, A. Pisanenko, 2) *Chaetocnema costulata* (Motsch.), A. Baselga 2009 (29 USNM); 1) Russia: Itkutsk, 11.vii.1998, A. S. Konstantinov, 2) *Chaetocnema costulata* (Motsch.), A. Baselga 2009 (13 USNM); 1) Werchne-Udinsk, Trsbaikal. Mandl, 2) BLANK green label, 3) *Chaetocn. costulata* Motsch., 1. Tarsenglied schwächer er-weitert!!, 4) 1953 Coll., Heikertinger (1 NHMB).

***Chaetocnema coyei* (Allard)**

Figs. 5, 27, Map 21

coyei Allard 1864:659 (type locality: Syria, "Kab-Elias (grotte d'Élie)"; type depository: MNHN; lectotype designated here); as *Plectroscelis*

metallica Weise 1886:751 (as variety of *coyei*; type locality: not given; type depository: ZMHB; Heikertinger 1951:210 (synonymized)

delagrangei Pic 1909:138 (type locality: "Syrie"; type depository: MNHN); Heikertinger 1951:210 (synonymized)

Distribution: Albania (Gruev 1992), Armenia, Azerbaijan, Bulgaria (Gruev 1992), Croatia (Gruev 1992), Greece (Doguet 1988, Gruev 1990a), Cyprus (Biondi 1994, Gruev 1995b), Iran (Rapilly 1978), Iraq (Gruev 1995a), Israel (Furth 1985), Jordan, Romania (Gruev et al. 1993), Russia, Serbia, Syria, Turkey (Gruev & Kasap 1985), Ukraine (Crimea).

Host plants: *Scirpus maritimus*, *Carex vulpina* (Tölg 1938); *Cyperus longus*, *Cyperus* spp., *Scirpus* sp., *Carex divisa*, *C. otrubae*, *Hordeum bulbosum* (Furth 1985); *Bolboschoenus*, *Carex* (Biondi 1994); *Onopordum* (Gruev & Kasap 1985).

Description: Body length (excluding head) 2.61–3.32 mm; width 1.38–1.86 mm. Ratio of elytron length at suture to maximum width, 2.56–2.59. Ratio of pronotum width at base to length at middle, 1.68–1.83. Ratio of length of elytron at suture to length of pronotum at middle, 2.08–2.09. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.19. Ratio of maximum width of both elytra to maximum width of pronotum, 1.21–1.29.

Elytron bronzy without yellow, greenish without yellow, rarely blueish without yellow or copperish without yellow. Pronotum bronzy, greenish, rarely blueish or copperish. Antennomere 1 completely yellow, rarely partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metafemur yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of

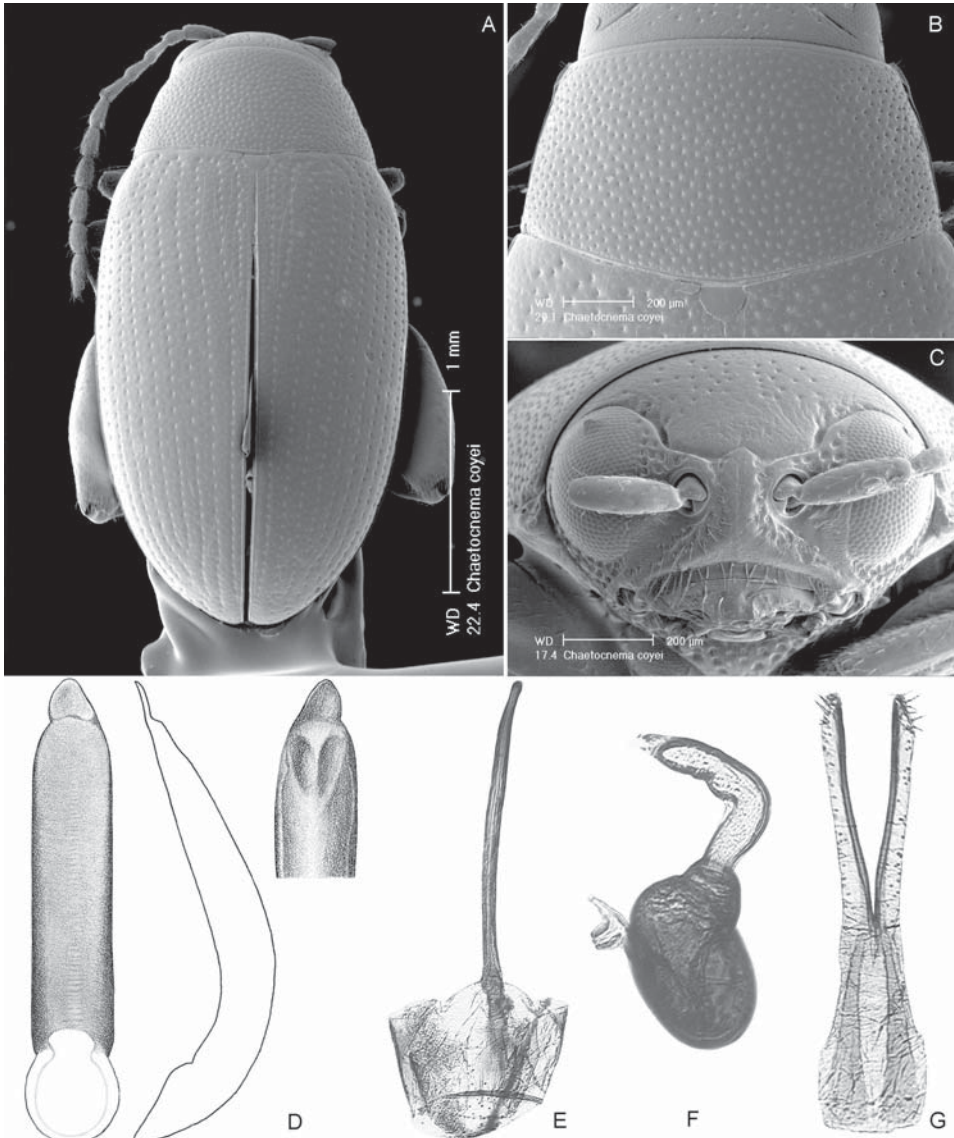
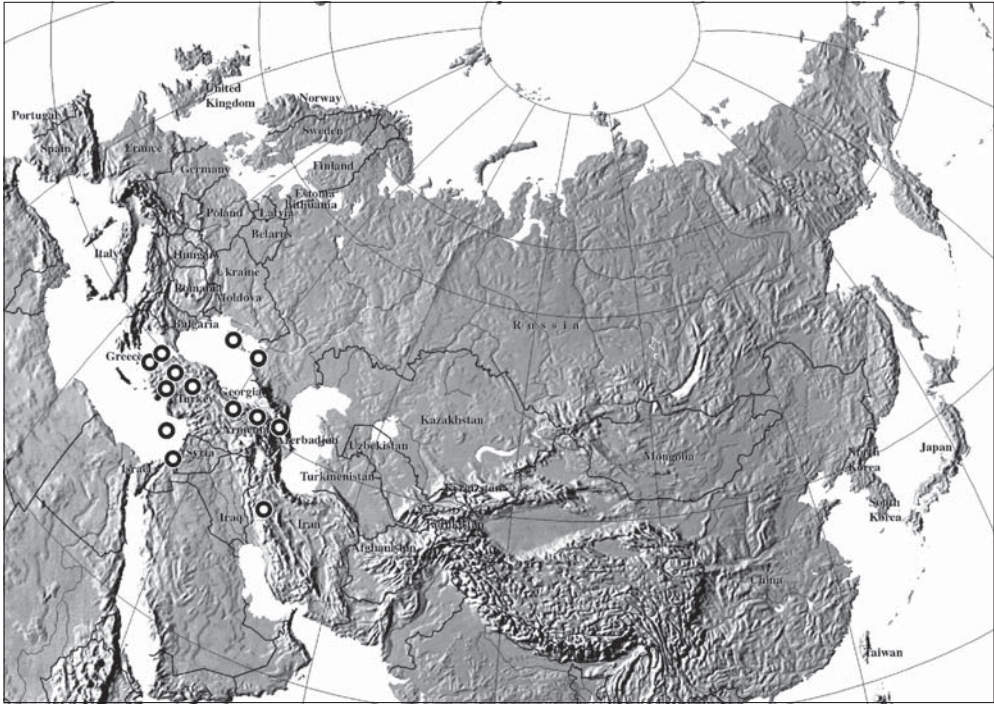


Figure 27. *Chaetocnema coyei*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

antennal socket (including surrounding ridge), 1.50–1.77. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without



Map 21. *Chaetocnema coyei*

longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum nearly straight, converging anteriorly. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with sides parallel to each other. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.69–1.75. First and second male protarsomere length to length ratio, 1.50–1.75. First and second male protarsomeres width to width ratio, 1.03–1.25. Length of metatibia to distance between denticle and metatibial apex 2.58–2.62. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.53–2.58. First male protarsomere maximum width to width at base ratio, 2.00–2.04. First and second male metatarsomere length to length ratio, 1.71–1.75. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.50–1.69.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove absent from aedeagus. Apical denticle of aedeagus in ventral view asymmetrical; slightly curved ventrally in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; present on apical part, narrower than those on basal part. Aedeagus in lateral view evenly and slightly curved. Maximal curvature of aedeagus in lateral view situated basally.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to side of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided at base, abruptly narrowing towards apex. Anterior sclerotization of vaginal palpus strongly widening anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Posterior sclerotization narrower than that of anterior.

Remarks: The lectotype of *Chaetocnema coyei* is the only specimen in the Allard collection at the MNHN. Despite the fact that it has two lectotype labels, the designation was not published. Also, the lectotype labels do not have any names on them, so who placed them on this specimen is unknown. The lectotype lacks both antennae and most of the legs, except for metafemora and left metatibia. The color of the lectotype dorsum is dark bronze. In most of the specimens collected in the Caucasus the dorsum is metallic green or blueish. Bronze specimens from Echmiadzin are closest in color to the lectotype, but they are a little lighter. *Chaetocnema coyei* has a unique aedeagus with the apex asymmetrical.

Type material: *Chaetocnema coyei*: Lectotype male: 1) coyei All., Kab. Elias Syria, 2) Ex musaeo Allard, 1899, 3) Museum Paris, ex Coll. R. Oberthur, Allard, 4) Lectotype, 5) Lectotype *Chaetocnema coyei* Allard, des. A. Konstantinov and S. Lingafelter, 2003 (MNHN).

Material: ARMENIA: 1) Etshmiadzin [Etchmiadzin], leg. V. Eichler (1 BMNH); 1) Armenia: Aragatz mt., Antarat vil. Amberd castle, 29.V.1999 2200 m, 40°21'00"N 44°16'00"E, leg. A. Konstantinov (4 USNM); 1) Armenia: env. of Aragatz, above Byurakan 29.V.1999, 2000m, slopes, leg. A. Konstantinov (1 USNM); 1) Armenia: Zangezur mountains, 1925 m sub alp. meadow Lusashakh 27.V.1999, 39°51'65"N 44°56'26E, leg. A. Konstantinov (3 USNM); 1) Armenia: Near Khashab, Sweeping at 1500 m in wet Prairie: 39°51.65'N, 44°56.25'E, May 28, 1999, Steven W. Lingafelter, Coll., 2) *Chaetocnema coyei* (Allard), Det. S. Lingafelter, 2004 (12 USNM); 1) Armenia: Aragatz environs, Amberd

Fortress: 2000m, 40°15'00"N 44°16'40"E, 29 May 1999, sweeping, Steven W. Lingafelter, 2) *Chaetocnema*, det. S. W. Lingafelter, 3) *Chaetocnema coyei* (All.), A. Baselga 2009 (1 USNM); 1) Armenia: Zangezur mountains, 1925m sub alp. meadow Lusashakh 28.V.1999, 39°51'65"N 44°56'26E, leg. A. Konstantinov, 2) *Chaetocnema coyei* (All.), A. Baselga 2009 (9 USNM); AZERBAIJAN: 1) Dorzaband, Lenkor. r. Talysh, Bel'tischev, 21-26.VIII.1926 (1 ZMAS); 1) Azerb SSR, Lerik, 8.V.1986, Konstantinov, A., 2) *Ch. coyei* All., det. Konstantinov, 1986 (2 USNM); CYPRUS: 1) Limassol, July 2, 1939 (1 BMNH); 1) Mandria, July 16, 1937, leg. G. Mavromoustakis (2 BMNH); 1) Papho Dist., nr. Ponayea (3000 ft.), Nov. 24, 1946, leg. G. Mavromoustakis (1 BMNH); IRAN: 1) N. Iran, 880 m, 8 km NW Malavi, 9.-10. 4 1977, 2) Loc. no. 283, Exped. Nat. Mus. Praha, 3) *Chaetocnema* (*Tlanoma*) *coyei* All., det. I. Lopatin, 1988 (1 USNM); ISRAEL: 1) Golan: Qusbiye, 15 December 1972, leg. D. G. Furth (1 BCPF); RUSSIA: 1) Kaluga (South Russia), 1916, leg. N. I. Sacharov (1 BMNH); 1) pos. Enem, Kranodarskii krai, 24.IV.1980 B. Korotyaev, 2) *Chaetocnema coyei* All., det. I. Lopatin, 1982 (1 ZMAS); 1) Russia: Korzhevskoe env., Krasnodar Region: 31 May 1999: 45°12.71'N, 37°45.16'E: Sweeping, Steven Lingafelter, Coll. (1 USNM); TURKEY: 1) [Izmir] Smyrna, Dr. Kruper, collect. Hauser., 2) *Chaetocnema coyei*, Heikertinger det. (1 NHMW); 1) Ankara: Haynana, June 8, 1989, leg. H. Hebauer (1 BCPF); 1) Chanak [Çanakkale] (1 BMNH); 1) Isparta: Hoyran Golu--Rive Ouest (1160 m), May 14, 1998, leg. B. & M. Bergeal (3 BCPF); 1) Turkey. 5 km N Askale, 07.VI.1999, pass 1500 m, fiels along river, leg. A. Konstantinov (3 USNM); 1) Turkey. 8 km S Askale, 07.VI.1999, pass 1600 m, 39°56'79N 40°45'88E, leg. A. Konstantinov (4 USNM); 1) Turkey: Road 38-54 between Mustafapasa & Cemil, 5-10 km S. Mustafapasa, sweeping around pond, 15 June 1999: Lingafelter, 2) *Chaetocnema coyei* (Allard), Det. S. W. Lingafelter (13 USNM); 1) Turkey: Cappadocia, env. Yeshilihivsar, 16.VI.1999, wet swamp, leg. A. Konstantinov (6 USNM); 1) TR-(Isparta) Hoyran Gölü, Rive Ouest, 1160 m., B. & M. Bergeal leg. 14 V 1998, 2) *Chaetocnema coyei* Allard, M. Bergeal det. 1998, 3) collbergealversailles (2 NHMW); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov, 2) *Chaetocnema coyei* (All.), A. Baselga 2009 (8 USNM); 1) Turkey: Cappadocia, env. Urgüp, Mustafapasha, 16.VI.1999, dry swamp, leg. A. Konstantinov, 2) *Chaetocnema coyei* (All.), A. Baselga 2009 (17 USNM); UKRAINE: 1) Crimea, VI.1965, leg. V. Palij, 2) *Chaetocnema coyei*, Gruiev det. (2 ZSMC).

***Chaetocnema cylindrica* (Baly)**

Fig. 28, Map 22

cylindrica Baly 1874:208 (type locality: Japan, "Nagasaki"; type depository: BMNH; lectotype designated here); as *Plectroscelis*

Distribution: China (Gressitt & Kimoto 1963), Japan (Chûjô & Kimoto 1961), Korea.

Host plants: *Triticum aestivum* (Gressitt & Kimoto 1963).

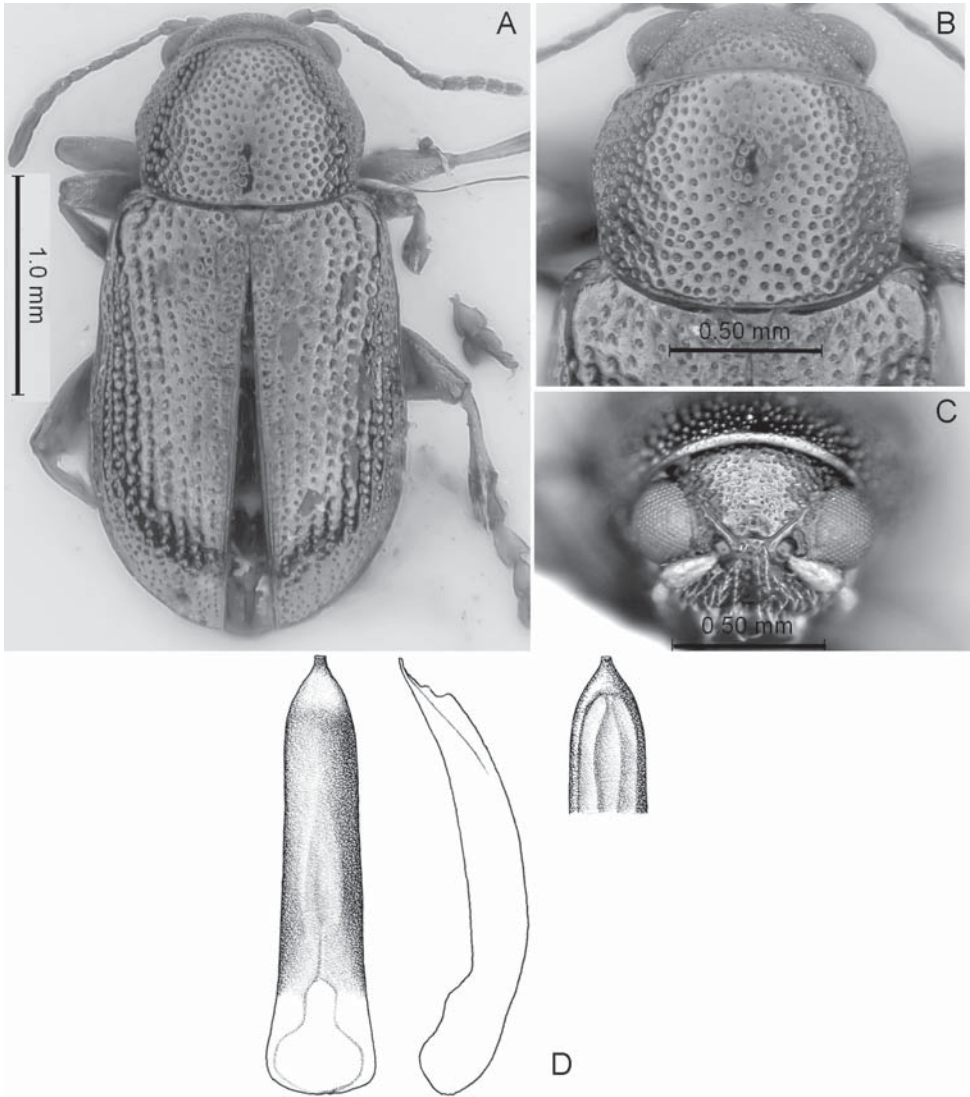
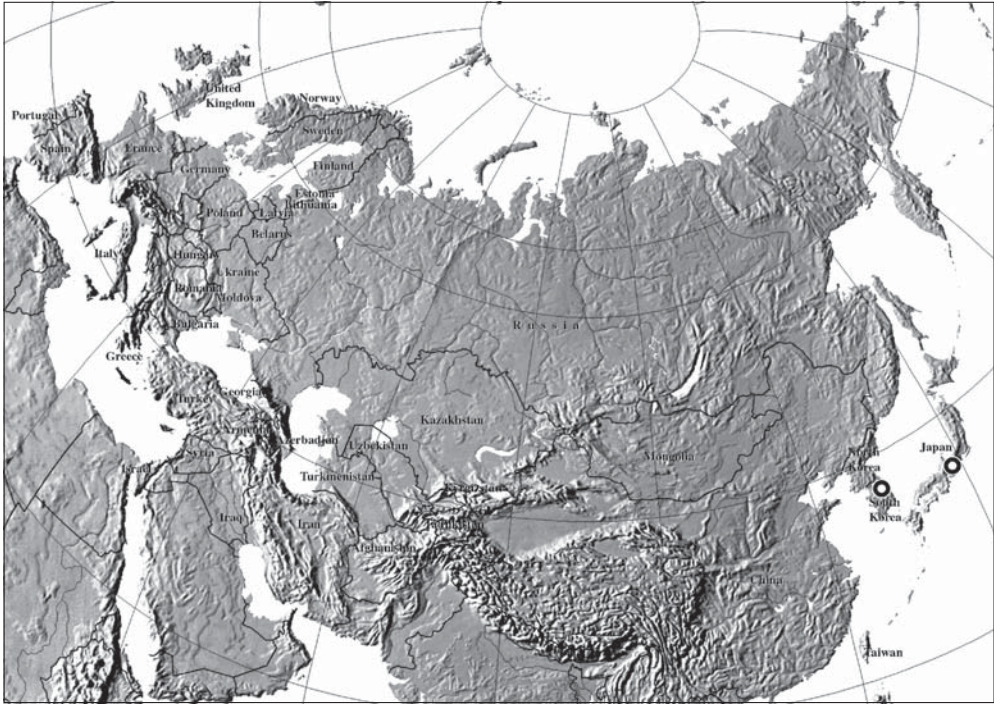


Figure 28. *Chaetocnema cylindrica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

Description: Body length (excluding head) 2.74–2.81 mm; width 1.38–1.42 mm. Ratio of elytron length at suture to maximum width, 2.65–2.85. Ratio of pronotum width at base to length at middle, 1.25–1.27. Ratio of length of elytron at suture to length of pronotum at middle, 2.69–2.83. Ratio of width of both elytra at base to width of pronotum at base, 1.14–1.17. Ratio of maximum width of both elytra to maximum width of pronotum, 1.25–1.30.



Map 22. *Chaetocnema cylindrica*

Elytron greenish without yellow or copperish without yellow. Pronotum greenish or copperish. Antennomere 1–2 completely yellow, rarely partly dark brown. Antennomere 3 completely yellow. Antennomere 4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia yellow with metallic green apex. Pro-, meso-, metafemur yellow with metallic green anteriorly.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.38–1.55. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly sinusoidal (concave to straight basally, convex further apically). Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures larger than distance between them.

Elytra with sides slightly concave in middle. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through sixth rows of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.14–1.18. First and second male protarsomere length to length ratio, 0.91–1.22. First and second male protarsomeres width to width ratio, 1.00–1.05. Length of metatibia to distance between denticle and metatibial apex 1.91–2.28. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.21–1.41. First male protarsomere maximum width to width at base ratio, 2.48–2.52. First and second male metatarsomere length to length ratio, 1.09–1.15. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.36–1.50.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral surface of aedeagus lateral to median groove convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus absent; poorly developed with obtuse margins in basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus nearly straight in lateral view. Maximal curvature of aedeagus in lateral view situated basally.

Remarks: *Chaetocnema cylindrica* is unique among Palearctic *Chaetocnema*. It has very narrow lateral margin of the pronotum and has unusually colored legs with metallic green apices of all tibiae. Its body shape is reminiscent of some eumolpines (Chrysomelidae) with the lateral sides of the pronotum being slightly sinusoidal and the elytra slightly constricted below the humeral calli. It is similar to another Asian species (*C. concinnicollis*) in the presence of a longitudinal stripe lacking punctures on the base of the pronotum and having a relatively narrow frontal ridge. However they differ in other features.

The aedeagus of *C. cylindrica* varies in the development of the longitudinal groove on the ventral side. The groove is usually very poorly developed, nearly indistinguishable.

Type material: *Chaetocnema cylindrica*: Lectotype male: 1) Type, H.T., 2) Baly Coll., 3) *Plectroscelis cylindrica* Baly, Japan, 4) *C. cylindricus* Holotype, BM, 5) blank yellow label, 6) blank pink label, 7) 8 Konstantinov; 8) Lectotype *Chaetocnema cylindrica* Baly, des. A. S. Konstantinov et al. 2009 (1 BMNH); Paralectotypotypes: 1) No specific data, 1910, G. Lewis; 2) Paralectotype *Chaetocnema cylindrica* Baly, des. A. S. Konstantinov et al. 2009 (4 BMNH).

Material: JAPAN: 1) Japan., G. Lewis, 1910-320., 2) *Chaetocnema cylindrica* Baly, 3) ex British Museum, det. Jacoby, 4) *cylindrica*, det. Heiktgr., 5) 1953 Coll., Heikertinger (1 NHMB); Male, Female 1) Japan, G. Lewis, 1910-320., 2) *Plectroscelis cylindrica* Baly (2 BMNH); SOUTH KOREA: 1) Fusan, Korea, 2) *Plectroscelis cylindrica* Baly, Korea, 3) Rost, Staudinger, 4) *cylindrica*, det. Heiktgr., 5) 1953 Coll., Heikertinger (1 NHMB).

***Chaetocnema delarouzei* (Brisout)**

Fig. 29, Map 23

delarouzei Brisout 1884:89 (type locality: "Syrie: Jericho" (Palestinian territories), "Algérie: Pérégaux"; type depository: MNHN; lectotype designated here); as *Plectroscelis*

Distribution: Algeria (Brisout 1884), Morocco, Palestinian territories (Brisout 1884), Tunisia (Gruev & Döberl 1997).

Host plants: unknown.

Description: Body length (excluding head) 1.64–1.94 mm; width 1.02–1.18 mm. Ratio of elytron length at suture to maximum width, 2.57–2.65. Ratio of pronotum width at base to length at middle, 1.65–1.66. Ratio of length of elytron at suture to length of pronotum at middle, 2.87–3.05. Ratio of width of both elytra at base to width of pronotum at base, 1.09–1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.33–1.46.

Elytron bronzish without yellow. Pronotum bronzish, rarely greenish. Antennomere 1–5 completely yellow. Pro-, mesotibia yellow. Metatibia yellow, rarely partly brown. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.78–1.83. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 3–5 punctures near eye.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally or on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.78–1.85. First and second male protarsomere length to length ratio, 1.24–1.31. First and second male protarsomeres width to width ratio, 1.01–1.07. Length of metatibia to distance between denticle and metatibial apex 2.73–2.78. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. First male metatarsomere length to width ratio, 5.47–5.53. First male protarsomere maximum width to width at base ratio, 1.52–1.57. First and second male metatarsomere length to length ratio, 1.32–1.39.

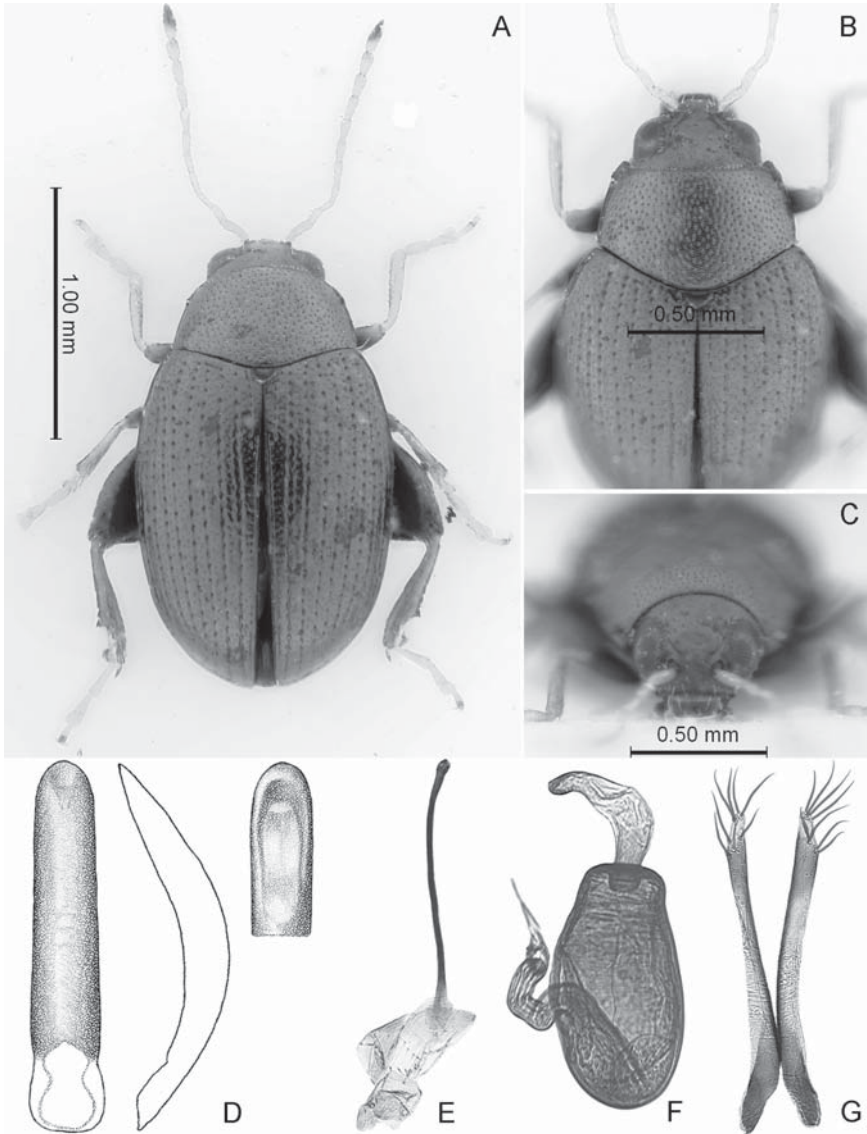
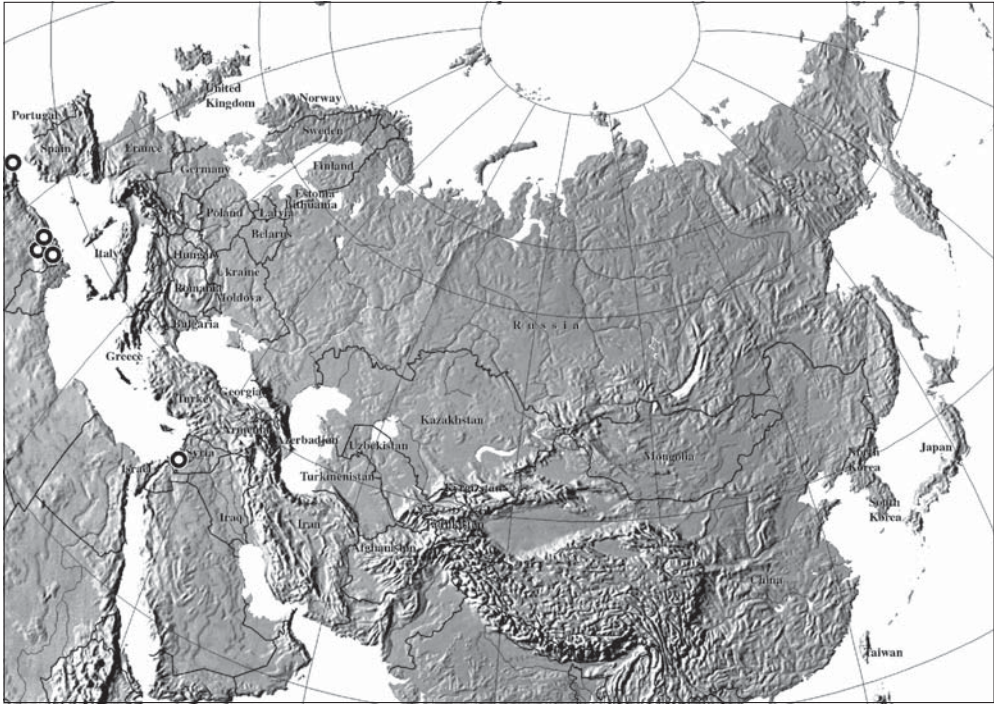


Figure 29. *Chaetocnema delarouzei*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

First and second male metatarsomere width to width ratio, 0.81–0.87. Third and fourth male metatarsomere length to length ratio, 2.22–2.27.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex api-



Map 23. *Chaetocnema delarouzei*

cally, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical or about as wide as apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum strongly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus posteriorly as wide as anteriorly before apex or slightly narrowing anteriorly. Anterior sclerotization of vaginal palpus nearly straight or sinusoidal. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema delarouzei* is similar to *C. breviuscula*, *C. tibialis*, *C. scheffleri*, and *C. lubischevi*. It can be best recognized by the shape of the aedeagus. In *C. delarouzei* the aedeagus is very similar in lateral view to the aedeagus of *C. breviuscula*, it is generally cylindrical along its length with the apex abruptly cut, but its tip is oval, without denticle in ventral view (in *C. breviuscula*, the aedeagus has its tip directed straight forward in lateral view, the ventral side with a very short impression situated only at the apex, and its tip narrowing abruptly in ventral view; in *C. tibialis* it is nearly as thick, sharply bent ventrally in lateral view with a relatively long and well recognized ventral impression; in *C. scheffleri*, the ventral groove occupies the whole length of the aedeagus and the tip is bent ventrally; and in *C. lubischevi*, the aedeagus is much flatter apically than basally in lateral view, and its tip narrows gradually in ventral view).

Type material: *Chaetocnema delarouzei*: Lectotype female: 1) Perregaux, Bedel, 2) type, 3) Museum Paris 1922, Col. L. Bedel, 4) Delarouzei, Type, 5) Lectotype *Chaetocnema delarouzei* (Brisout) des. A. Konstantinov and S. Lingafelter, 2003 (MNHN). Paralectotypes 2 specimens, 1) Jericho [written on the mounting card], 2) delarouzei, Syrie, 3) type, 4) Museum Paris 1922, Col. L. Bedel, 5) Paralectotype *Chaetocnema delarouzei* (Brisout) des. A. Konstantinov and S. Lingafelter, 2003 (MNHN).

Material: ALGERIA: 1) Baniane, March 30, 1985, leg. M. Bergeal (4 BCPF); 1) Biskra, 1908, leg. A. Carret (5 BCPF); 1) le Meskiane, April 3, 1985, leg. M. Bergeal (4 BCPF); 1) Sidi Okba, June 1, 1985, leg. M. Bergeal (10 BCPF); 1) Yakous, April 3, 1985, leg. M. Bergeal (6 BCPF); 1) le Hodna, 29. Avril 1908, 2) *Chaetocnema Delarouzei*, 3) Peyerimhoff, 4) *tibialis* v. *Delarouzei*, det. Heiktgr., 5) 1953 Coll., Heikertinger (3 NHMB); 1) Sidi Okba, Algerie 1 IV 85, M. Bergeal (2 USNM); 1) Baniane Alg., 30 III 85, M. Bergeal, Male (1 USNM); 1) Baniane Alg., 30 III 85, M. Bergeal, 2) *Chaetocnema delarouzei* Bris., M. Bergeal det. 87, 3) Male (1 USNM); MOROCCO: 1) Ouest Marakech, May 2, 1983, leg. S. Doguet (5 BCPF).

***Chaetocnema depressa* (Boieldieu)**

Fig. 30, Map 24

depressa Boieldieu 1859:482 (type locality: France, Sète, "montagne de Cette"; type depository: MNHN; lectotype designated by Doguet 1989:191); as *Plectroscelis chryscollis* Foudras 1860:217 (type locality: France, "Mont-d'Or, près de Lyon"; type depository: MNHN), as *Plectroscelis*; Heikertinger 1951: 212 (synonymized)
gibbifrons Pic 1909:155 (type locality: "Tunisia, Djélma"; type depository: MNMH); Heikertinger 1951: 212 (synonymized)

Distribution: Algeria, Belgium (Derenne 1963), Croatia (Gruev 1992), France (Doguet 1994), Germany (Weise 1886), Italy (Biondi 1990a), Luxembourg, Spain (Bastazo et al. 1993), Tunisia (Pic 1909).

Host plants: *Dorycnium pentaphyllum* (Rabil 1991-1992); *Onobrychis viciifolia* (Petitpierre 1985); *Dorycnium* (Fabaceae) (Biondi 1990a).

Description: Body length (excluding head) 1.26–1.78 mm; width 0.69–0.96 mm. Ratio of elytron length at suture to maximum width, 2.40–2.84. Ratio of pronotum width at base to length at middle, 1.53–1.70. Ratio of length of elytron at suture to length of pronotum at middle, 2.66–3.19. Ratio of width of both elytra at base to width of pronotum at base, 1.09–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.30–1.42.

Elytron yellow with dark stripe along suture, occupying one or two interspaces near base. Pronotum bronzish, rarely greenish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow, rarely partly brown. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.45–1.80. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.49–1.51. First and second male protarsomere length to length ratio, 1.31–1.35. First and second male protarsomeres width to width ratio, 1.13–1.17. Length of metatibia to distance between denticle and metatibial apex 2.52–2.85. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.71–2.80. First male protarsomere maximum width to width at base ratio, 1.58–1.62. First and second male metatarsomere length to length ratio, 1.27–1.63. First and second male metatarsomere width to width ratio, 1.00–1.03. Third and fourth male metatarsomere length to length ratio, 1.66–1.69.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than part just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, me-

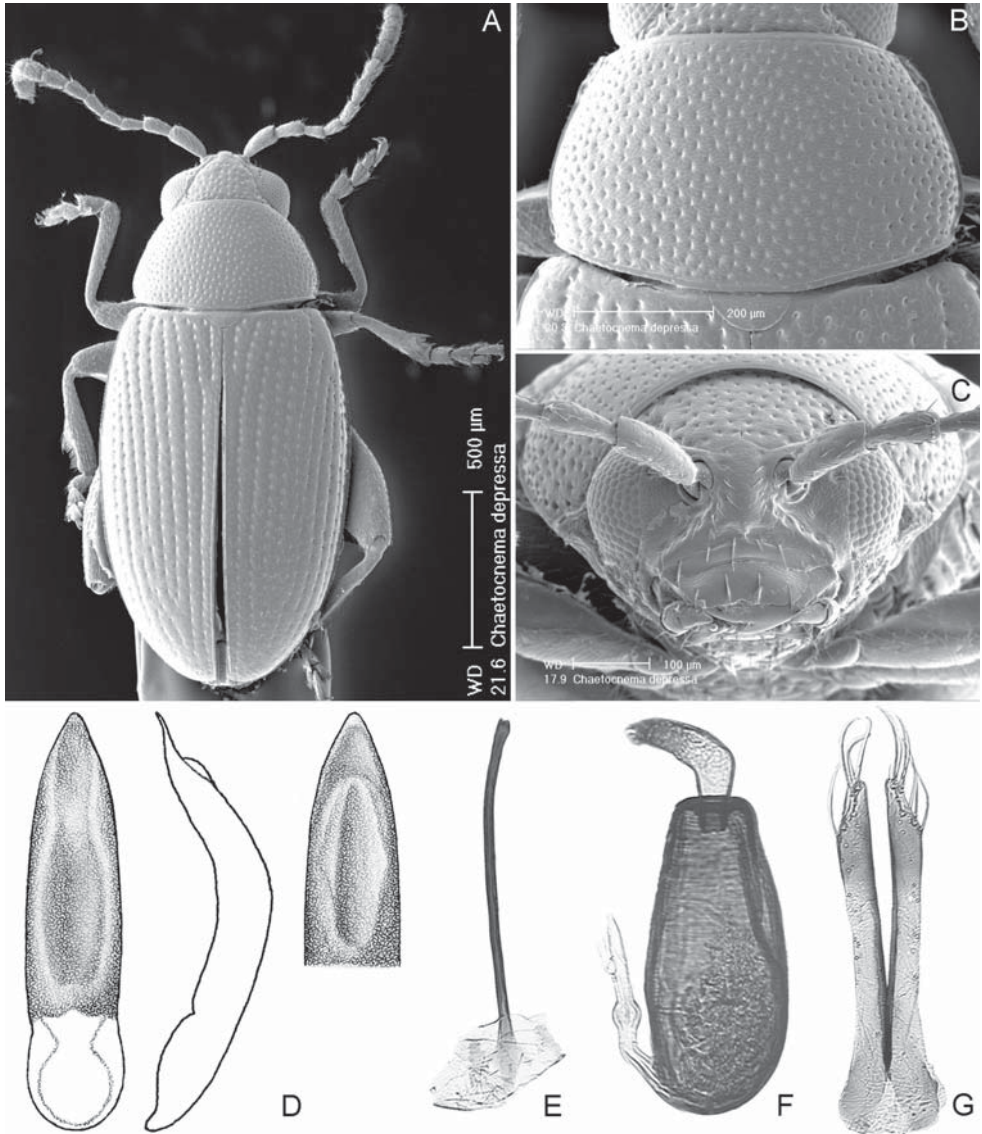
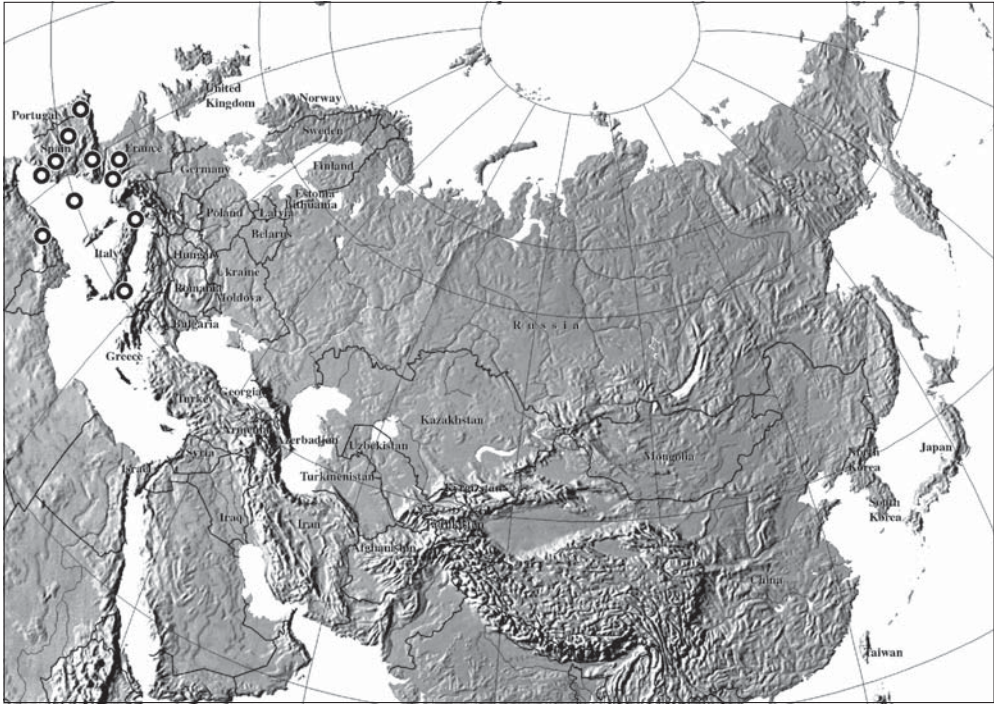


Figure 30. *Chaetocnema depressa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

dially, basally. Ventral longitudinal groove in apical half, middle, and basal half of aedeagus poorly developed, shallow, with obtuse margins. Apical part of longitudinal groove as wide as basal; middle part narrower than basal and apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus



Map 24. *Chaetocnema depressa*

in ventral view absent. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view sinusoidal near apex. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema depressa* is similar to *C. conducta*, *C. nebulosa*, and *C. orientalis* in having a yellow pattern on their elytra. It can be separated from all three species by the aedeagus that has a wide ventral groove that is present along the entire length of the aedeagus. The groove is wider than the distance between groove and lateral

margin. We found that specimens of *C. depressa* from Algeria sometimes have elytra that lack a yellow pattern.

Type material: *Chaetocnema depressa*: Lectotype male, 1) Museum Paris, ??? Jacquelin Du Val, 2) [first word illegible] *depressa* Boield., 3) Lectotype *Chaetocnema depressa* Boield. S. Doguet des. 89 (MNHN).

Material: ALGERIA: 1) Algérie Sétif, Amoucha 20 IV 87, M. Bergeal leg., 2) *Chaetocnema depressa gibbifrons*, M. Bergeal det. 87, 3) *collbergealversailles* (2 BCPF); FRANCE: 1) Alpes-maritimes (menton) (2 BMNH); 1) Hyeres, Signes, Lodeve, Rocamadour, St. Guilhem Dist., Provence, May-August, leg. M. Bergeal (8 BCPF); 1) la Ferte Alais, April 17, 1988, leg. M. Bergeal (40 BCPF); 1) Marseille, leg. de Boissy (5 BCPF); 1) Mireval, June 19, 1994, leg. M. Bergeal (1 BCPF); 1) St. Lambert, June 14, 1987, leg. M. Bergeal (2 BCPF); 1) Avignon, 2) Collectio, Hauser, 3) *C. chryscollis* Foudr. (2 BMNH); 1) Var, St. Raphael (Var), St. Cl. Deville, Claire-Deville Provence., 2) *Chaetocnema depressa*, Heikertinger det. (1 NHMW); 1) Stazzane, 61, D. Ferrari, 2) *Chaetocnema depressa* Boield, A. Lubischew det (1 ZMAS); ITALY: 1) Varano, 1899, leg. Paganetti., 2) *Chaetocnema depressa*, Heikertinger det. (2 NHMW); 1) Taranto, Grottaglie, Murgien, leg. Paganetti., 2) *Chaetocnema depressa*, Heikertinger det. (3 NHMW); SPAIN: 1) (1 BMNH); 1) Albacete, Sierra de Segura, 2) *Chaetocnema depressa* (Boield.), Baselga det. (20 MNCN); 1) Albacete, Sierra de Segura, Molinicos, El Pardal, VI-1903, 2) *Chaetocnema depressa* (Boield.), Baselga det. (4 MNCN); 1) Almería, Baccares, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN); 1) Huesca, Ansó, Zuriza, V-1952, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN); 1) Huesca, Jaca, Peña Oroel, V-1952, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN); 1) Huesca, Jaca, Santacilia, V-1952, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN); 1) Madrid, Arganda, V-1897, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN); 1) Mallorca, Menorca, 2) *Chaetocnema depressa* (Boield.), Baselga det. (2 MNCN); 1) Mallorca, Puerto Soller, June 7, 1990, leg. M. Doberl (2 BCPF); 1) Ourense, Rubiá, Covas, 25-VI-2000, leg. Baselga, 2) *Chaetocnema depressa* (Boield.), Baselga det. (4 BASC); 1) Zaragoza, Puerto de Sos, 10-VIII-1989, 2) *Chaetocnema depressa* (Boield.), Baselga det. (1 MNCN).

***Chaetocnema discreta* (Baly)**

Fig. 31, Map 25

discreta Baly 1877a:596 (type locality: China, "Kin Kiang"; type depository: BMNH; lectotype designated here); as *Plectroscelis*

granulifrons Baly 1877a:596 (type locality: "China"; type depository: BMNH; lectotype designated here); as *Plectroscelis*; Heikertinger 1951:214 (synonymized)

kanika Maulik 1926:216 (type locality: India, "? Calcutta"; type depository: IMCI); Scherer 1969:163 (synonymized)

yunnanica Heikertinger 1951:205 (as subspecies of *discreta*; type locality: China, "Yunnan, Vallis flumin. Soling-ho"; type depository: unknown)

Distribution: China (Chen 1933), India (Scherer 1969), Japan (Kimoto & Gressitt 1966), South Korea (Takizawa 1980), North Korea, Taiwan (Chûjô 1935), Vietnam (Warchalowski 1969).

Host plants: *Duchesnea indica*, *Rubus sieboldii* (Chûjô 1958); *Achyranthes japonica*, *Glycine max*, *Polygonum filiforme*, *Rubus buergeri*, *R. parvifolius*, *R. sieboldii*, *Solanum melongena esculentum*, *Alternanthera sessilis* (Gressitt & Kimoto 1963).

Description: Body length (excluding head) 1.68–1.76 mm; width 0.98–1.11 mm. Ratio of elytron length at suture to maximum width, 2.58–2.61. Ratio of pronotum width at base to length at middle, 1.57–1.59. Ratio of length of elytron at suture to length of pronotum at middle, 2.81–2.85. Ratio of width of both elytra at base to width of pronotum at base, 1.20–1.45. Ratio of maximum width of both elytra to maximum width of pronotum, 1.39–1.45.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown, rarely yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight to shallowly retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.33–1.45. Frons with only relatively long setae on sides present. Vertex swollen, situated above level of orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two short impressions visible only near basal margin. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 2.18–2.24. First and second male protarsomere length to length ratio, 1.76–1.98. First and second male protarsomeres width to width ratio, 1.31–1.35. Length of metatibia to distance between denticle and metatibial apex 2.55–2.61. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.60–3.70. First male protarsomere maximum width to width at base ratio, 1.68–1.72. First and

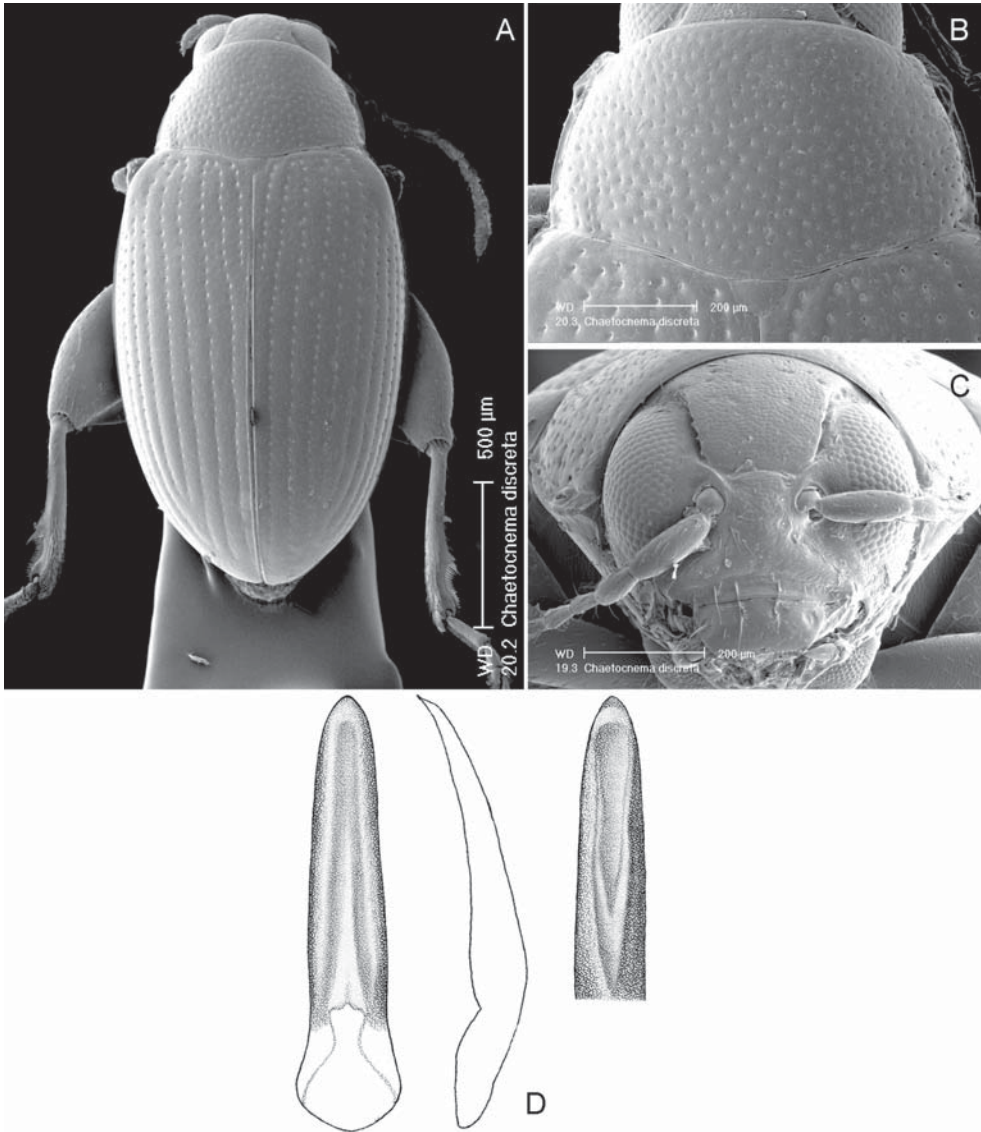
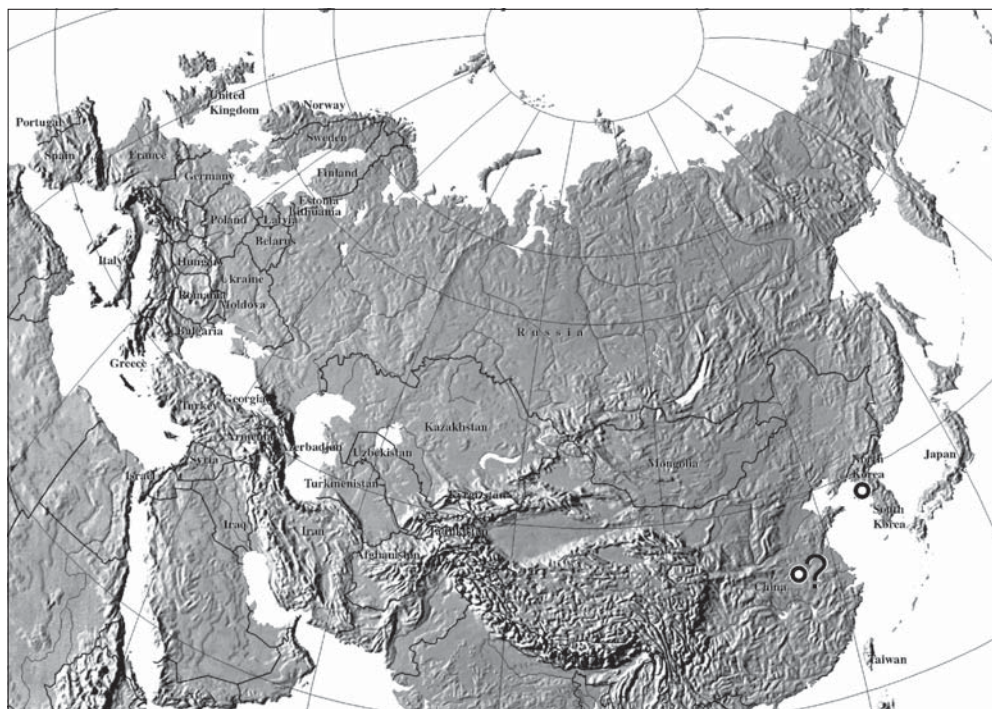


Figure 31. *Chaetocnema discreta*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

second male metatarsomere length to length ratio, 1.75–1.87. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.70–1.75.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing



Map 25. *Chaetocnema discreta*

gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed with obtuse margins in basal half. Apical part of longitudinal groove narrower than basal; middle part narrower than basal, wider than apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus present. Apical denticle of aedeagus in ventral view absent; strongly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view nearly straight with maximum curvature situated basally.

Remarks: The lectotype of this species is a female so we used a male collected in Song Ding as a source of characters for the male genitalia. The holotype of *C. yunnanica* should be in the Natural History Museum in Basel, however we could not find it there.

Chaetocnema discreta can be separated from all other Palearctic species by the aedeagus with a ridge situated in the middle and the ventral groove.

Type material: *Chaetocnema discreta*: Lectotype female: 1) Type HT, 2) Baly Coll., 3) *Chaetocnema discreta* Baly, China; 4) Lectotype *Chaetocnema discreta* Baly des. A. S. Konstantinov et al. 2009 (1 BMNH).

Chaetocnema granulifrons: Lectotype female: 1) Type HT, 2) Baly Coll., 3) *Chaetocnema granulifrons* Baly, China; 4) Lectotype *Chaetocnema granulifrons* Baly des. A. S. Konstantinov 2010, 5) *Chaetocnema discreta* Baly det. A. Konstantinov 2010 (1 BMNH).

Material: NORTH KOREA: 1) Kaesong, Mts. Pakyon, 20 km NE from Kaesong, 11.IX.1971, No 261, leg. S. Horvatovich, et J. Papp, 2) *Chaetocnema discreta*, Gruiev det. (5 ZSMC); VIETNAM: 1) Song Dingh, Annam. 10.VIII, 2) *Chaetocnema discreta* Baly, I. Lopatin det. 1961. (1 USNM); 1) Song Dingh, Annam. 10.VIII, 2) *Chaetocnema discreta* Baly, I. Lopatin det. 1961. (1 ZMAS); 1) Vietnam, Gia Lai, Song Lang, 40 km N Ankhe, 25.IX.1978, 700m, L. Medvedev leg., 2) *Alternanthera sessilis* Amaranthaceae, 3) *Chaetocnema discreta* Baly, det. L. Medvedev (1 USNM).

Chaetocnema eastafghanica, new species

Fig. 32, Map 26

Distribution: Afghanistan

Host plants: unknown.

Description: Body length (excluding head) 1.89 mm; width 1.13 mm. Ratio of elytron length at suture to maximum width, 2.22. Ratio of pronotum width at base to length at middle, 1.66. Ratio of length of elytron at suture to length of pronotum at middle, 2.66. Ratio of width of both elytra at base to width of pronotum at base, 1.16. Ratio of maximum width of both elytra to maximum width of pronotum, 1.36.

Elytron copperish without yellow. Pronotum copperish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur light brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.46. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present (although barely visible) on sides, lacking in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures, rarely lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

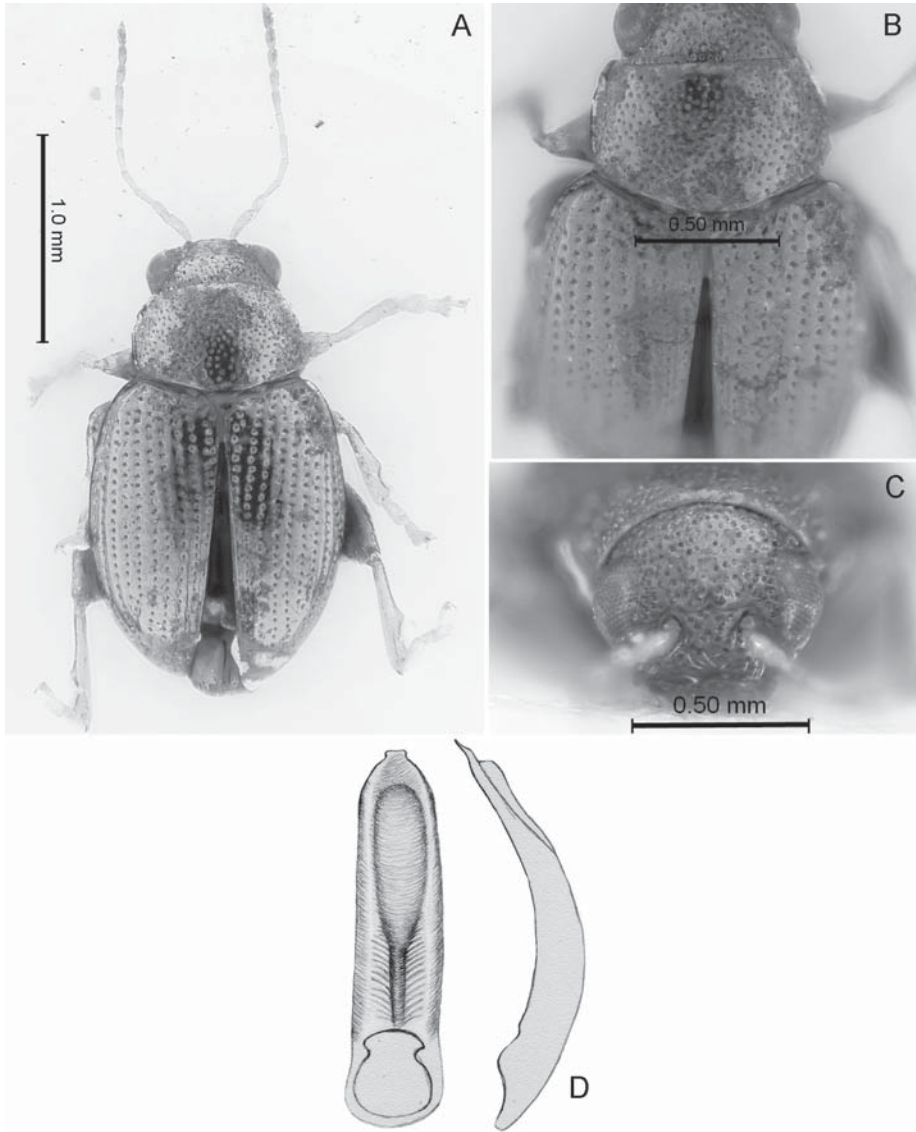
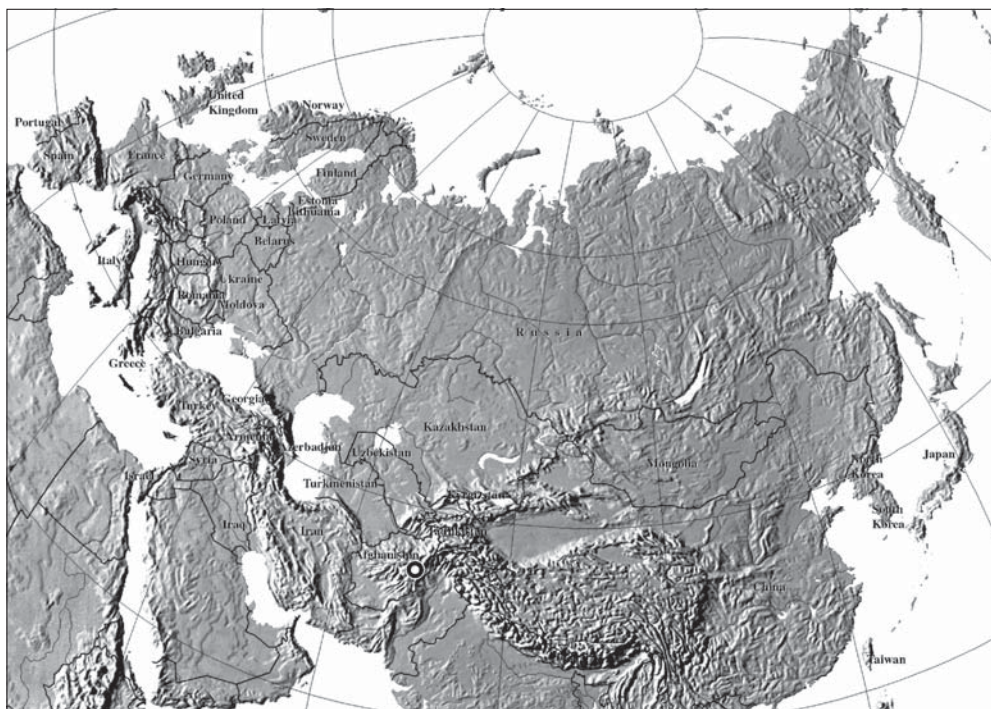


Figure 32. *Chaetocnema eastafghanica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral.

First male protarsomere length to width ratio, 1.41. First and second male protarsomere length to length ratio, 1.57. First and second male protarsomeres width to width ratio, 1.41. Length of metatibia to distance between denticle and metatibial apex, 2.64. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view.



Map 26. *Chaetocnema eastafghanica*

First male metatarsomere length to width ratio, 2.42. First male protarsomere maximum width to width at base ratio, 1.71. First and second male metatarsomere length to length ratio, 1.54. First and second male metatarsomere width to width ratio, 1.03. Third and fourth male metatarsomere length to length ratio, 2.07.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove wider than basal; middle part narrower or as wide as apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Remarks: *Chaetocnema eastafghanica* is similar to a number of species with the ventral side of the aedeagus with a groove that is wider apically than basally and with the

basal sides of the groove covered with wrinkles. This group contains *C. rufofemorata*, *C. franzi*, *C. imitatrix*, and *C. subcoerulea*. It can be separated from all other species in the group by the following features of the aedeagus: basal, "narrow" part of the ventral groove is parallel sided and much shorter than the apical, "wide" part of the groove; apex is narrowing abruptly; and the lateral sides are nearly parallel to each other. In addition, *Chaetocnema eastafghanica* has regular second, third, and fourth elytral striae.

Etymology: The name is a Latinized adjective.

Type material: *Chaetocnema eastafghanica*: Holotype male: 1) O. Afghan. 1953, J. Klapperich, 2) Kunartal, 500m, Jalalabad, 30.III, 3) *Chaetocnema klapperichi* m. sp. n. I. Lopatin det., 1961, 4) Paratypus, 5) Holotype *Chaetocnema eastafghanica* Konstantinov et al. 2009, 6) 35 Konstantinov (1 USNM).

Chaetocnema franzi, new species

Fig. 33, Map 27

Distribution: Macedonia.

Host plants: unknown.

Description: Body length (excluding head) 1.94 mm; width 1.16 mm. Ratio of elytron length at suture to maximum width, 2.46. Ratio of pronotum width at base to length at middle, 1.36. Ratio of length of elytron at suture to length of pronotum at middle, 2.47. Ratio of width of both elytra at base to width of pronotum at base, 1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.36.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.52. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus poorly developed.

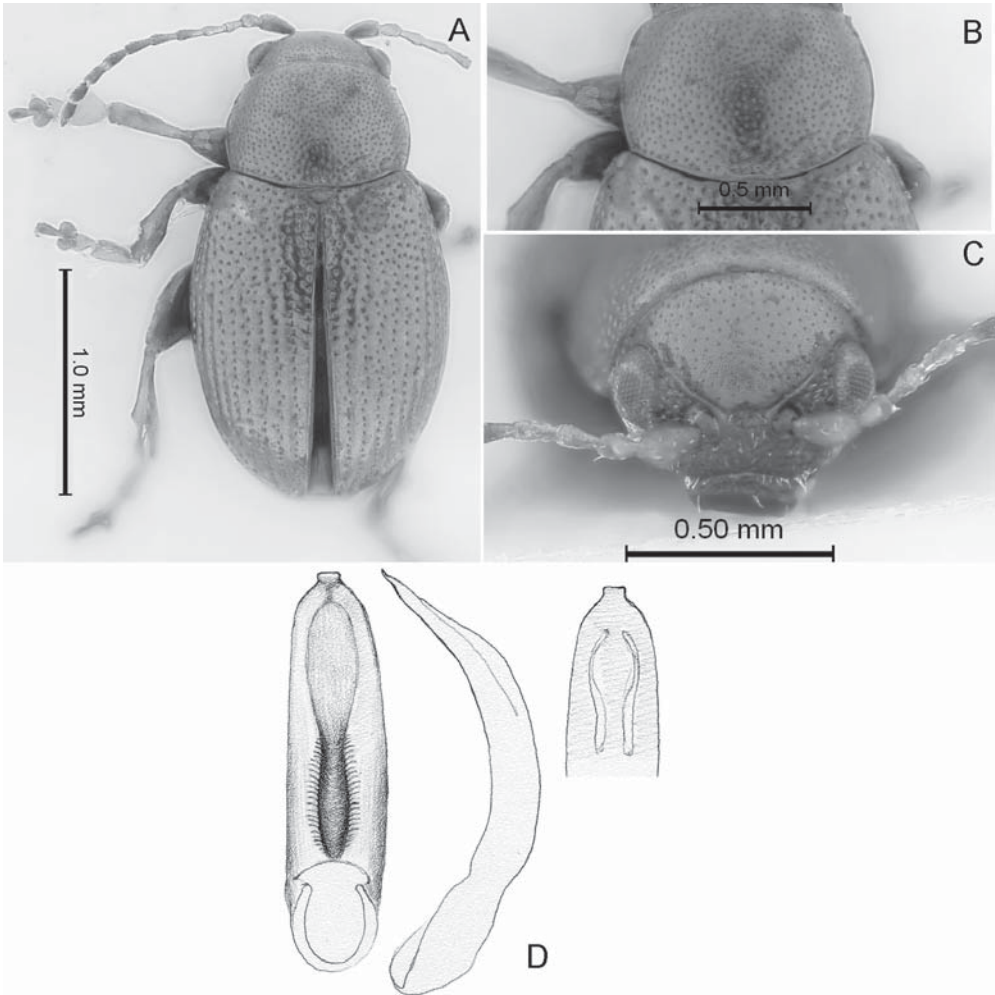
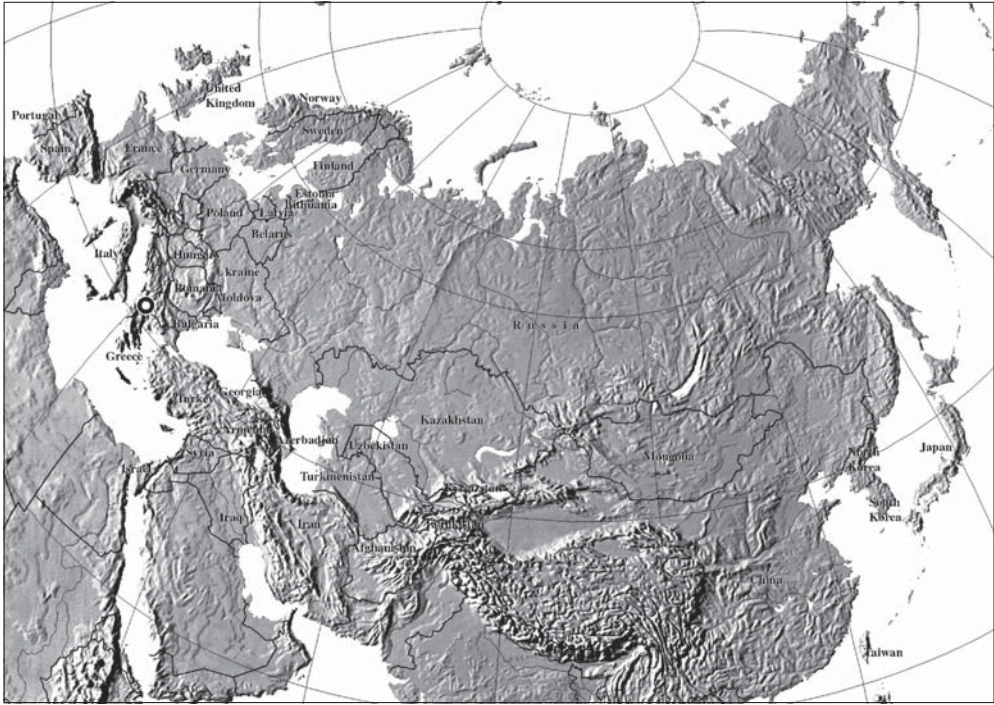


Figure 33. *Chaetocnema franzi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

First male protarsomere length to width ratio, 1.14. First and second male protarsomere length to length ratio, 1.95. First and second male protarsomeres width to width ratio, 1.52. Length of metatibia to distance between denticle and metatibial apex 2.32. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.20. First male protarsomere maximum width to width at base ratio, 3.33. First and second male metatarsomere length to length ratio, 1.09. First and second male metatarsomere width to width ratio, 1.25. Third and fourth male metatarsomere length to length ratio, 1.50.



Map 27. *Chaetocnema franzi*

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically and medially flat, horizontal; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove wider than basal; middle part narrower than basal. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Remarks: *Chaetocnema franzi* is similar to a number of species with the ventral side of the aedeagus having a groove that is wider apically than basally and with the basal sides of the groove covered with wrinkles. This group contains *C. rufofemorata*, *C. eastafghanica*, *C. imitatrix*, and *C. subcoerulea*. It can be separated from all other species in the group by the following features of the aedeagus: basal, "narrow" part of

the ventral groove has curved sides and its shorter than the apical, "wide" part of the groove; apex is narrowed abruptly.

Etymology: The name is a patronym dedicated to Franz Heikertinger.

Type material: *Chaetocnema franzi*: Holotype male: 1) Schar Dagh, Ljuboten, 2) bei subcoerulea, aber andere Form des erweitert. Tarsenglieds, 3) 1953 Coll. Heikertinger, 4) Holotype *Chaetocnema franzi* Konstantinov et al. 2009, 6) 19 Konstantinov (1 NHMB).

***Chaetocnema gottwaldi* Král**

Figs. 3B, 34, Map 28

gottwaldi Král 1969:69 (type locality: Kazakhstan, "Dschambul"; type depository: NMPC)

Distribution: Kazakhstan (Král 1969).

Host plants: unknown.

Description: Body length (excluding head) 2.27–2.37 mm; width 1.18–1.32 mm. Ratio of elytron length at suture to maximum width, 2.22–2.34. Ratio of pronotum width at base to length at middle, 1.08–1.45. Ratio of length of elytron at suture to length of pronotum at middle, 2.50–2.77. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.29–1.34.

Elytron bronzy without yellow or greenish without yellow. Pronotum bronzy or greenish. Antennomere 1 partly dark brown. Antennomere 2–3 completely yellow. Antennomere 4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight with notch in middle or emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.58–2.62. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through sixth rows of punctures regular. Elytral humeral callus well-developed.

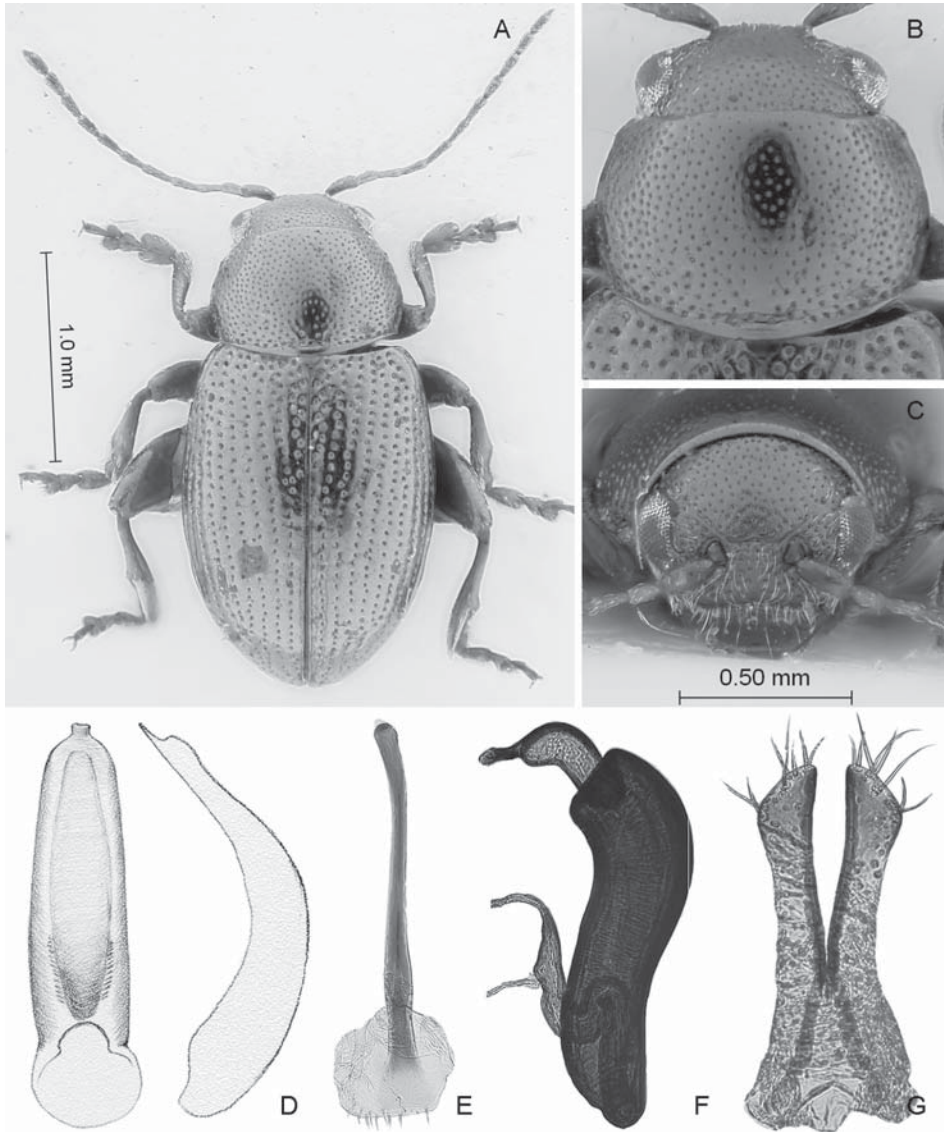
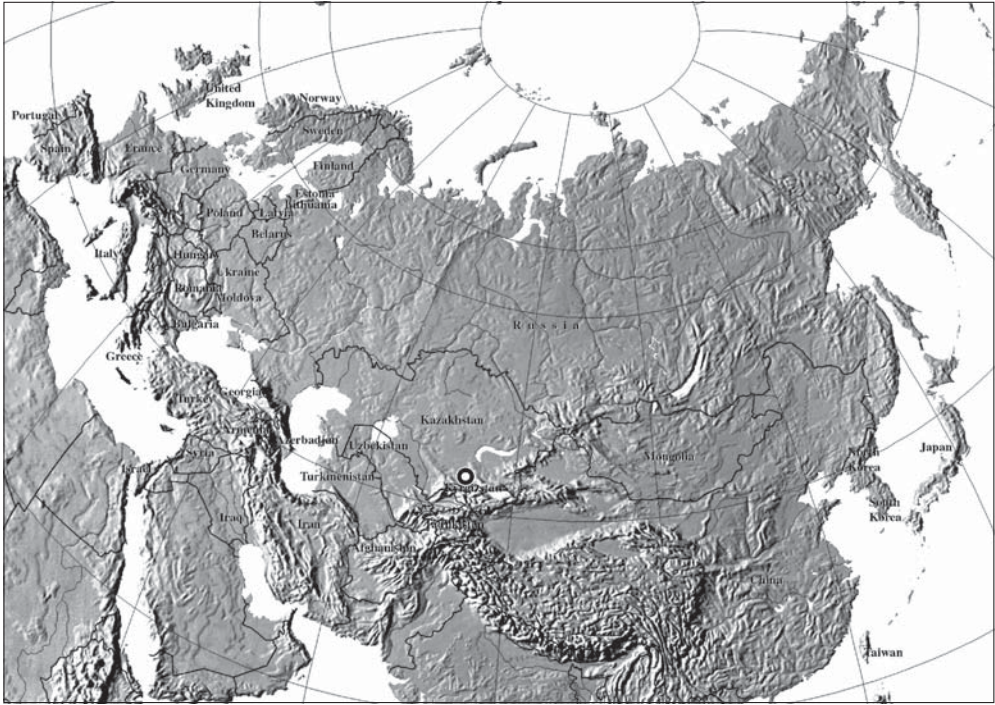


Figure 34. *Chaetocnema gottwaldi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

First male protarsomere length to width ratio, 1.41. First and second male protarsomere length to length ratio, 1.50. First and second male protarsomeres width to width ratio, 1.54. Length of metatibia to distance between denticle and metatibial apex 1.73. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view.



Map 28. *Chaetocnema gottwaldi*

First male metatarsomere length to width ratio, 2.09. First male protarsomere maximum width to width at base ratio, 2.42. First and second male metatarsomere length to length ratio, 1.43. First and second male metatarsomere width to width ratio, 1.10. Third and fourth male metatarsomere length to length ratio, 2.12.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus shallow with sharp margins; well-developed with sharp margins in basal half of aedeagus. Apical part of longitudinal groove as wide as basal; middle part wider than basal and apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view abruptly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of

receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum strongly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; slightly and evenly curved along length. Anterior end of anterior sclerotization indeterminate. Length of posterior sclerotization about as great as width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema gottwaldi* is very similar to *C. obesa*. Even their aedeagi, spermathecae and vaginal palpi are very similar. The only feature that separates the aedeagi of *C. gottwaldi* and *C. obesa* is the shape of the apex in lateral view. It is straight in *C. gottwaldi* and bent dorsally in *C. obesa*. In addition, *C. gottwaldi* can be separated from *C. obesa* by the shape of the third to fifth elytral striae which are regular in *C. gottwaldi* and confused in *C. obesa*.

Type material: *Chaetocnema gottwaldi*: Holotype male: 1) SSSR VI.64, Kazakhstan zap. oblast., 2) Dzambul, Gottwald, 3) holotypus, 4) *Chaetocnema* (s. str.) *gottwaldi* m. 1968 male, Holotypus d. Kral 1967 (1 NMPC); Paratype female: 1) SSSR VI.64, Kazakhstan zap. oblast., 2) Dzambul, Gottwald, 3) allotypus, 4) paratopotypous, 5) *Chaetocnema* (s. str.) *gottwaldi* m. 1968 female, Allotypus d. Kral 1967 (1 NMPC).

***Chaetocnema grandis* Pic, status restored**

Fig. 35, Map 29

grandis Pic 1909:139 (as variety of *hortensis*; type locality: "Turkestan"; type depository: MNHN; lectotype designated here); Lopatin 1977b:235 (synonymized)

arisi Pic 1915b:42 (as variety of *sahlbergi*; type locality: south Kazakhstan: Taraz, "Turkestan: Aulie Ata"; type depository: MNHN; lectotype designated here). **New synonym**

Distribution: Kazakhstan (Pic 1915b, Lopatin 1977b), Kyrgyzstan (Lopatin 1977b), Mongolia (Kral 1973), Russia, Tajikistan (Lopatin 1977b), Turkmenistan (Lopatin 1977b), Uzbekistan (Lopatin 1977b).

Host plants: unknown.

Description: Body length (excluding head) 2.43–2.64 mm; width 1.29–1.62 mm. Ratio of elytron length at suture to maximum width, 2.76–3.04. Ratio of pronotum width at base to length at middle, 1.28–1.59. Ratio of length of elytron at suture to length of pronotum at middle, 2.42–2.77. Ratio of width of both elytra at base to width of pronotum at base, 1.12–1.14. Ratio of maximum width of both elytra to maximum width of pronotum, 1.34–1.37.

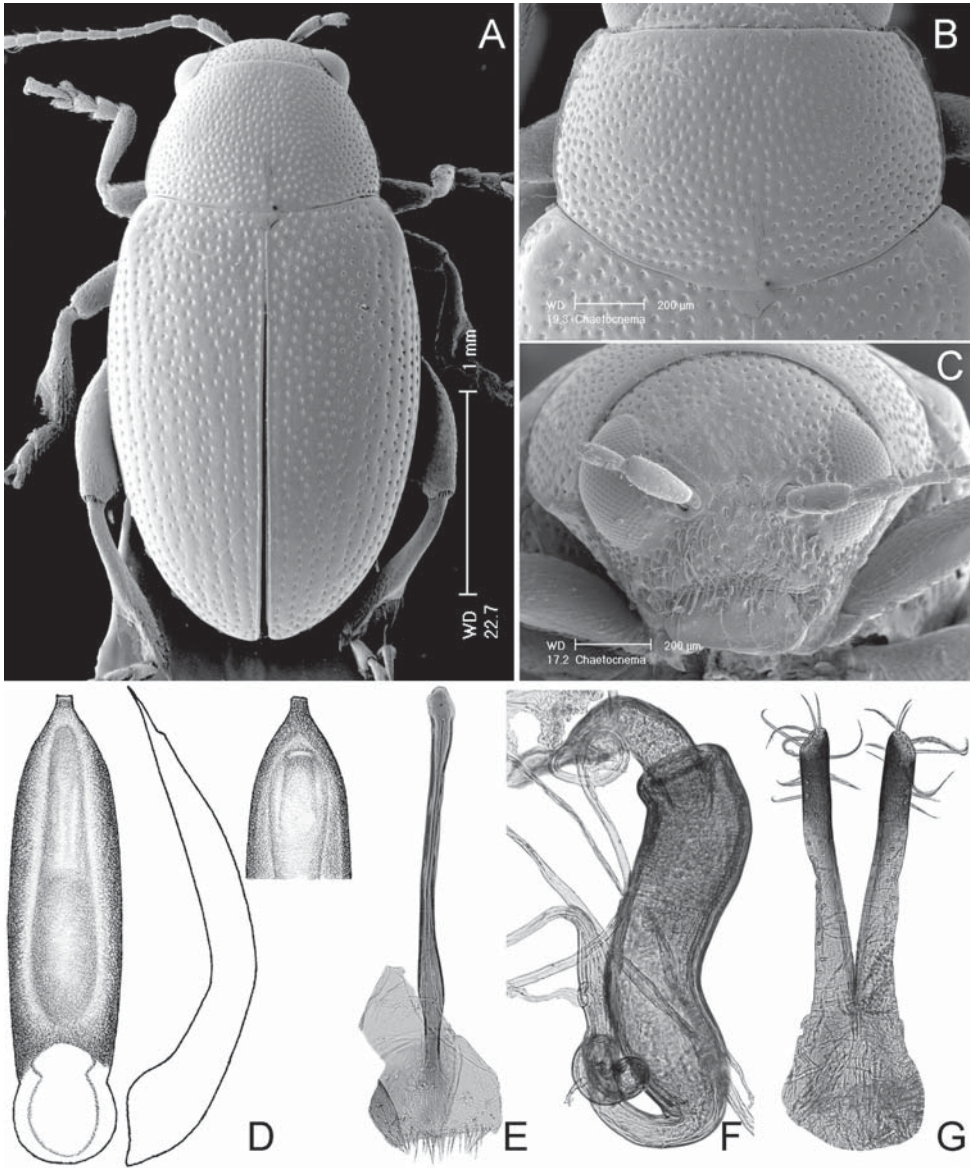
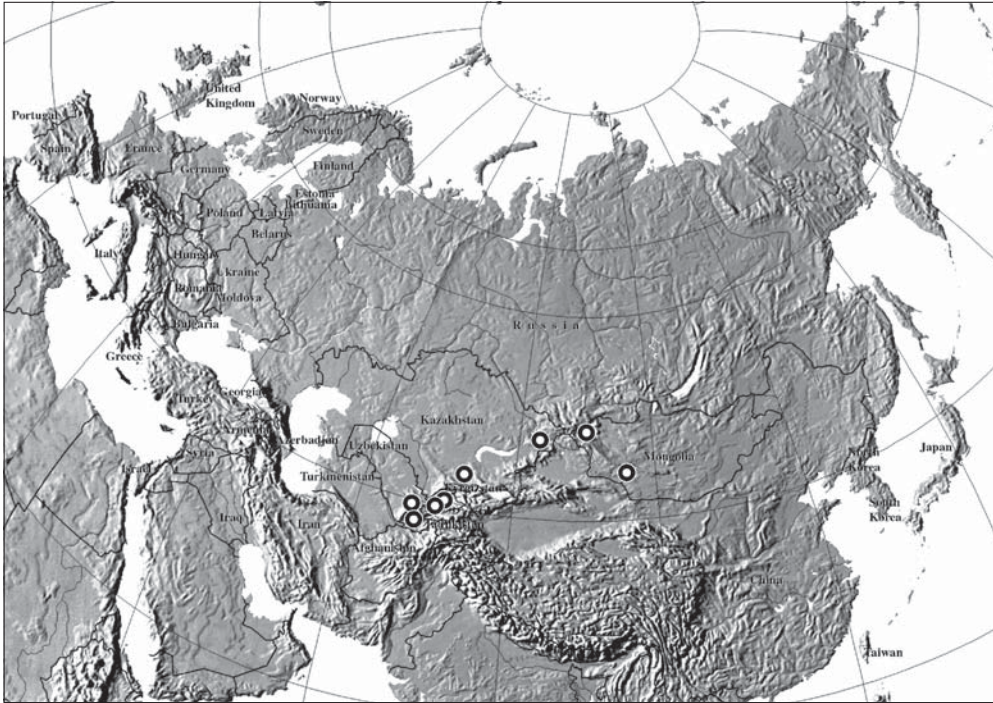


Figure 35. *Chaetocnema grandis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Elytron blueish without yellow, rarely greenish without yellow. Pronotum blueish, rarely greenish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Profemur yellow or partly brown. Mesofemur yellow. Metafemur brown.



Map 29. *Chaetocnema grandis*

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.79–1.81. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through fifth rows of punctures at base of elytron confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.64–1.67. First and second male protarsomere length to length ratio, 1.98–2.05. First and second male protarsomeres

width to width ratio, 1.18–1.24. Length of metatibia to distance between denticle and metatibial apex 2.71–2.77. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.48–2.56. First male protarsomere maximum width to width at base ratio, 2.22–2.29. First and second male metatarsomere length to length ratio, 1.63–1.67. First and second male metatarsomere width to width ratio, 1.19–1.23. Third and fourth male metatarsomere length to length ratio, 1.90–1.94.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening compared to width just before apical declivity greater or subequal. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with sharp or obtuse margins; well-developed, deep, with obtuse margins in middle; well-developed, with sharp or obtuse margins in basal half. Apical part of longitudinal groove narrower than basal; middle part narrower than basal; wider than apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved ventrally in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent on apical part. Aedeagus in lateral view evenly and slightly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening, losing sharp border. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or greater.

Remarks: *Chaetocnema grandis* was previously treated as a synonym of *C. sinuata* Weise (Lopatin 1977b). However, the study of the type material showed that they are quite different and should be treated as separate species. The currently known range of *C. sinuata* is limited to its type locality (North China, Inner Mongolia).

Chaetocnema grandis is similar to *C. igori* and *C. sinuata*. It can be separated from *C. igori* by the more oblique apical third of the aedeagus (it is narrowing abruptly in *C. igori*) and by the relatively narrow distal part of the ventral groove of the aedeagus (distal part of the ventral groove is nearly as wide as basal part in *C. igori*). From *C.*

sinuata, it can be separated by the absence of the transverse wrinkles on the sides of the ventral groove of the aedeagus. Careful study of the male lectotype of *C. arisi* (MNHN) revealed that it is conspecific with *C. grandis*.

Type material: *Chaetocnema grandis*: Lectotype female: 1) Samarkand, 2) TYPE, 3) *Chaetocnema hortensis* v. *grandis* Wse., 4) Museum Paris Coll. M. Pic, 5) Lectotype *Chaetocnema grandis* Pic des. A. S. Konstantinov et al. 2009 (MNHN).

Chaetocnema arisi: Lectotype male: KAZAKHSTAN. 1) Turkestan, Aulie-Ata [Taraz], C. Aris; 2) *Chaetocnema psylliodes* Ws.; 3) type; 4) v. *arisi* Pic; 5) Museum Paris Coll. M. Pic; 6) Lectotype *Chaetocnema arisi* Pic des. A. S. Konstantinov et al. 2009, 7) *Chaetocnema grandis* Pic, det. A. S. Konstantinov, 2009 (MNHN).

Material: KAZAKHSTAN: 1) lake Tarangi-Kul', Zaisan krai, 1.III.30, F. Luk'yanovich, 2) *Chaetocnema sinuata* Lopatin det. 1968. (1 ZMAS); 1) Turkestan, Semiretshie, 27.VI.1923, 2) 19 Kuzin, 3) *Chaetocnema grandis* Pic?, A. Lubischew det (1 ZMAS); 1) Turkestan., Reitter. Leder., 2) hort. var. *grandis* Reitter, Reitter, Don., 3) *hortensis* var. *grandis*, steckt bei fdeise unter dem gleisber Vanien!, 4) *grandis*, det. Heiktgr., 5) *grandis*, aus dem original - material!, 6) 1953 Coll. Heikertinger (1 NHMB); KYRGYZSTAN: 1) Centr. Tien-Shan, 80 W Naryn, V. Gur'eva, 9.VIII.96b., 2) tugai (1 ZMAS); 1) dol Naryna, 24.VII.66, 2) *Chaetocnema sinuata* Wse., I. K. Lopatin det. 1966 (1 USNM); 1) Dzhallalabad, 28.Y.1950, A. Lubischew, 2) *Chaetocnema grandis*? Pi, A. Lubischew d (1 ZMAS); 1) Orlovka, Talass obl. Kirgizia, 11.Y11.1950, A. Lubischew, 2) *Chaetocnema grandis*? Pic, A. Lubischew d (2 ZMAS); 1) Turk. Sussamyr-GB., Ketmen-Tjube., 2) 1953 Coll. Heikertinger (1 NHMB); MONGOLIA: 1) Gobi-Altai'skii aimak, Urd-Bulak, 50 km E Dzahoi, 12.VIII.1976, 1300 m., 2) *Chaetocnema sinuata*, Medvedev det. (2 ZSMC); 1) Kobdosskii aimak, r. Yench-Gol, 30 km S. Uench, 1700 m, 29-31.VII.1975, 2) *Chaetocnema sinuata*, Medvedev det. (1 ZSMC); 1) Mongolia, Chovd aimak, 2 km N von Somon Uenč im Tal Uenč gol, 1450 m, Exp. Dr. Z. Kaszab, 1966, 2) Nr. 644, 7.VII.1966, 3) Female [symbol], 4) *sinuata* Wse., det. J. Král, 5) *Chaetocnema sinuata* Weise (1 USNM); UZBEKISTAN: 1) Uzbekistan: Samarkand, 14.VII.1958, 2) *Chaetocnema sinuata*, Palij det. (3 ZSMC); 1) Margelan, 23.V.58, Soboleva, 2) *Chaetocnema sinuata* Wse., I. Lopatin det., 1962 (1 USNM); 1) Margelan, 27.V.18, Ivanov, 2) *Chaetocnema sinuata* Ws. (1 USNM).

***Chaetocnema granulosa* (Baly)**

Fig. 36, Map 30

granulosa Baly 1874:207 (type locality: Japan, "Nagasaki"; type depository: BMNH; lectotype designated here); as *Plectroscelis*

Distribution: Japan (Chûjô & Kimoto 1961), Taiwan (Chûjô 1935); Korea (Gruev 1980).

Host plants: *Rubus hirsutus* (Chûjô 1954; Chûjô & Kimoto 1961); *R. trifidus* (Ohno 1960).

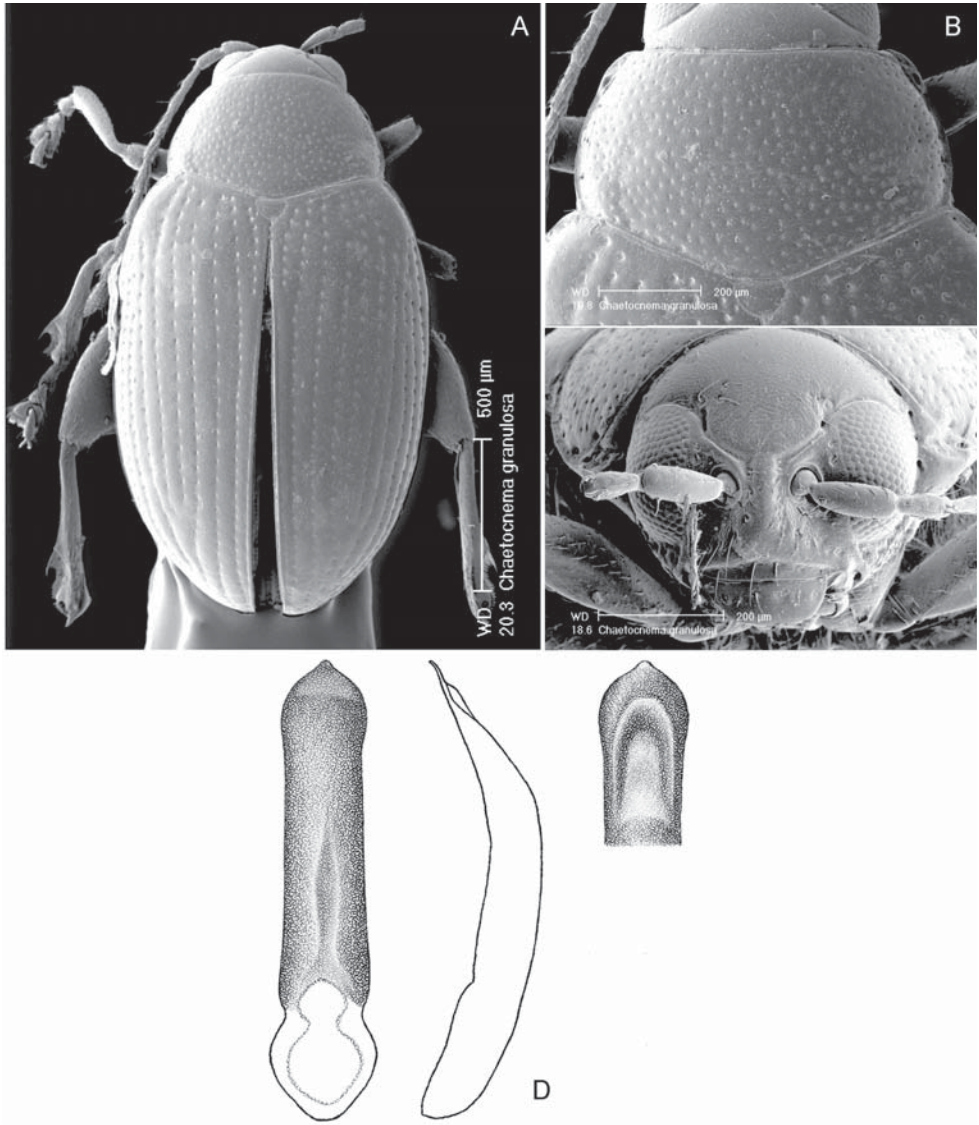
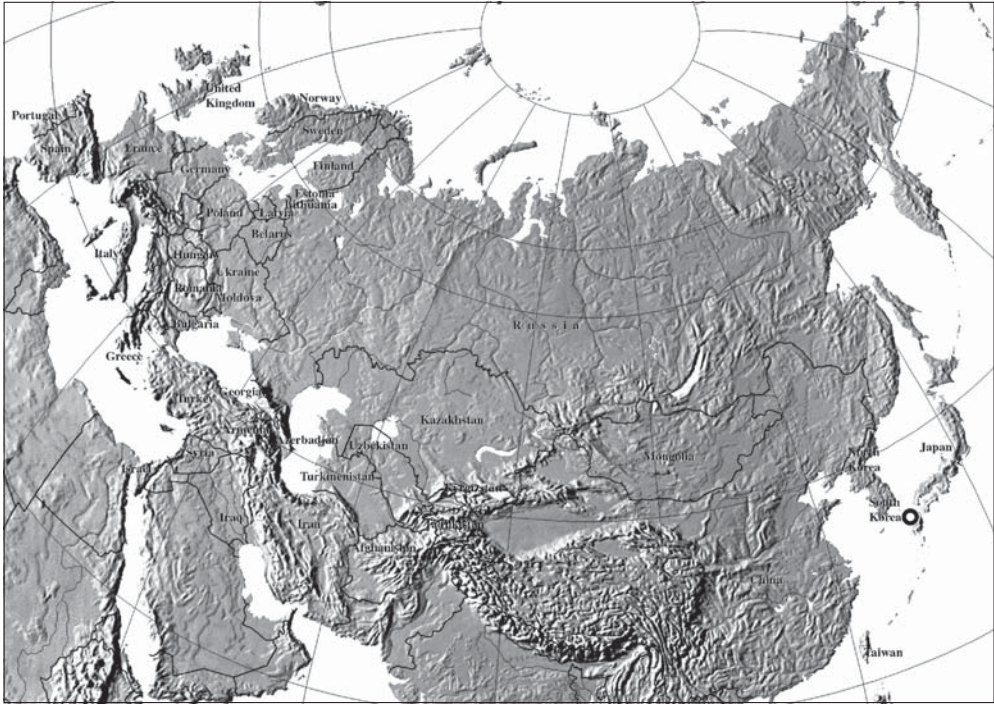


Figure 36. *Chaetocnema granulosa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

Description: Body length (excluding head) 1.67–1.75 mm; width 1.02–1.18 mm. Ratio of elytron length at suture to maximum width, 2.20–2.24. Ratio of pronotum width at base to length at middle, 1.68–1.72. Ratio of length of elytron at suture to length of pronotum at middle, 2.98–3.02. Ratio of width of both elytra at base to width



Map 30. *Chaetocnema granulosa*

of pronotum at base, 1.08–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.46–1.50.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, straight to shallowly retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.95–0.99. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic

callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures 6 to 10 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.75–1.80. First and second male protarsomere length to length ratio, 2.00–2.05. First and second male protarsomeres width to width ratio, 1.22–1.40. Length of metatibia to distance between denticle and metatibial apex 2.36–2.44. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.53–2.57. First male protarsomere maximum width to width at base ratio, 1.99–2.03. First and second male metatarsomere length to length ratio, 1.35–1.38. First and second male metatarsomere width to width ratio, 1.00–1.04. Third and fourth male metatarsomere length to length ratio, 1.50–1.53.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus absent or poorly developed with obtuse margins in basal half. If present, longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Remarks: *Chaetocnema granulosa* can be separated from the other Palearctic species by the shape of the aedeagus. It has an ogival apex with a well-developed denticle that is oval on the top. The ventral groove of the aedeagus is very narrow and is present only basally. The apex of the aedeagus is bent ventrally in lateral view.

Type material: *Chaetocnema granulosa*: Lectotype male. 1) Japan, 2) Type, 3) Type, H.T., 4) Baly Coll., 5) *Chaetocnema granulosa* Baly, Nagasaki; 6) Lectotype *Chaetocnema granulosa* Baly des. A. S. Konstantinov et al. 2009 (1 BMNH); Paralectotype: 1) Baly Coll.; 2) *Plectroscelis granulosa* Bal Japan; 3) Paralectotype *Chaetocnema granulosa* Baly des. A. S. Konstantinov et al. 2009 (1 BMNH).

***Chaetocnema heptapotamica* Lubischev**

Fig. 37, Map 31

heptapotamica Lubischev 1963:863 (type locality: Kazakhstan, "Semirechye"; type depository: ZMAS)

Distribution: Georgia (Konstantinov 1988), Kazakhstan (Alma-Ata) (Folwaczncy 1964), Kyrgyzstan (Lopatin 1977b), Russia (Caucasus) (Konstantinov 1988), Uzbekistan.

Host plants: unknown.

Description: Body length (excluding head) 1.98–2.03 mm; width 1.18–1.28 mm. Ratio of elytron length at suture to maximum width, 2.28–2.41. Ratio of pronotum width at base to length at middle, 1.72–1.80. Ratio of length of elytron at suture to length of pronotum at middle, 2.99–3.11. Ratio of width of both elytra at base to width of pronotum at base, 1.14–1.16. Ratio of maximum width of both elytra to maximum width of pronotum, 1.39–1.41.

Elytron bronzish without yellow, rarely greenish without yellow. Pronotum bronzish, rarely greenish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.98–1.02. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 2.12–2.15. First and second male protarsomere length to length ratio, 1.45–1.59. First and second male protarsomeres width to width ratio, 1.12–1.16. Length of metatibia to distance between denticle and metatibial apex 2.53–2.61. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.83–2.94.

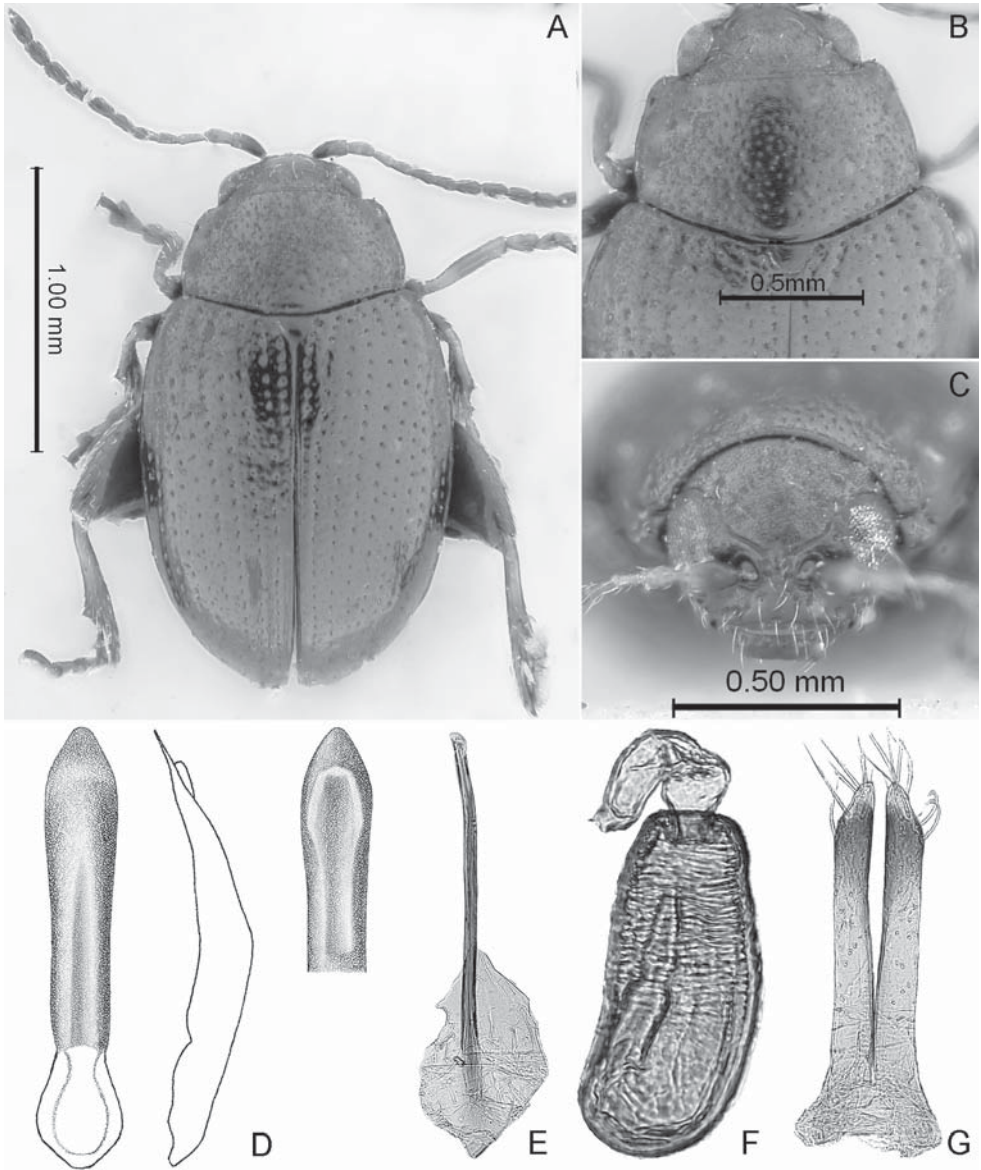
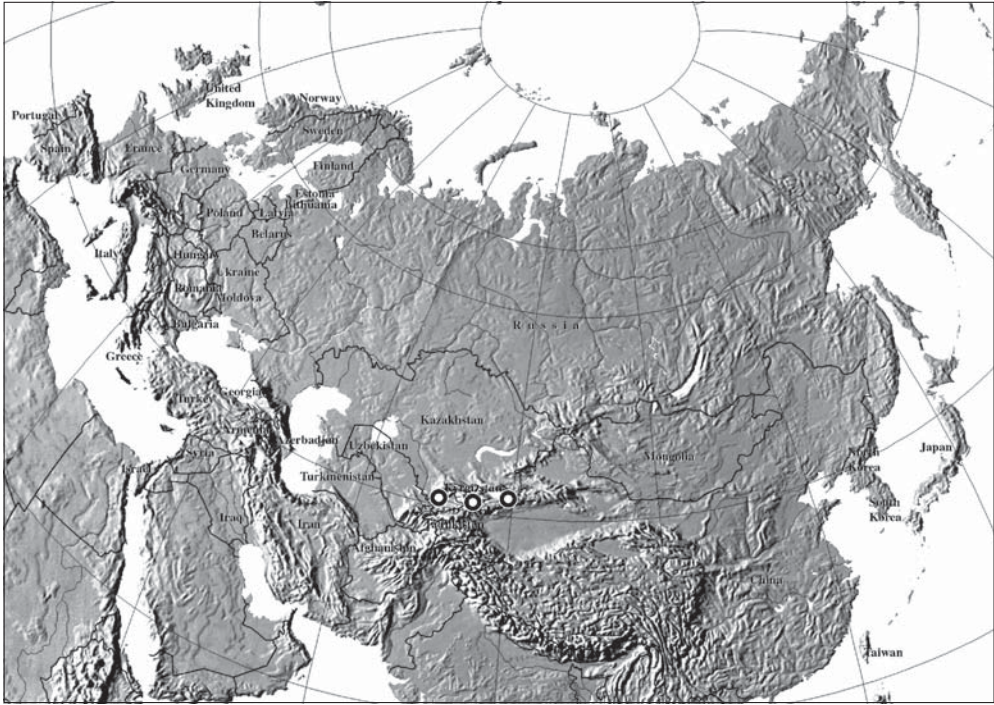


Figure 37. *Chaetocnema heptapotamica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

First male protarsomere maximum width to width at base ratio, 1.79–1.81. First and second male metatarsomere length to length ratio, 1.63–1.65. First and second male metatarsomere width to width ratio, 1.01–1.03. Third and fourth male metatarsomere length to length ratio, 2.14–2.24.



Map 31. *Chaetocnema heptapotamica*

Apical third of aedeagus widening. Width of aedeagus distal to basal opening narrower than width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus absent; poorly developed, shallow, with obtuse margins or absent at middle and basal half. Middle part of longitudinal groove as wide as basal. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum arrow shaped, not much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus subdeltoïd, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly. Anterior

sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: We agree with Lubischev (1963) on distinguishing characters and distribution of *C. heptapotamica*, *C. concinna*, and *C. picipes*. The main characters are the shape of the apical part of the aedeagus (dilated in *C. heptapotamica* and *C. concinna* and parallel-sided in *C. picipes*) and the shape of the first protarsomere in the male (it is much smaller in *C. heptapotamica* compared to *C. concinna* and *C. picipes*). As for the distribution, *C. heptapotamica* is common in Middle and Central Asia where it replaces both *C. concinna* and *C. picipes*.

Type material: *Chaetocnema heptapotamica*: Paratype male: 1) Przhevalsk, Kirgiz., 15.IV.1943, A. Lubischew, 2) *Chaetocnema heptapotamica* Lub, A. Lubischew det, 3) Paratypus (1 ZMAS); Paratype male: 1) Przhevalsk, Kirgiz., 9.IV.1943, A. Lubischew, 2) *Chaetocnema heptapotamica* Lub, A. Lubischew det, 3) Paratypus (1 ZMAS); Paratype male: 1) Kurmenty, Issyk-Kul', 27.IX.1942, A. Lubischew, 2) 52, 3) *Chaetocnema heptapotamica* Lub, A. Lubischew det, 4) Paratypus (1 ZMAS).

Material: KYRGYZSTAN: 1) Frunze, Kirgizia, 3-4.IV.1943, A. Lubischew, 2) 3Y, 3) *Chaetocnema heptapotamica* Lu, A. Lubischew det (1 USNM); 1) Przhevalsk, Kirgiz., 13.IV.1943, A. Lubischew, 2) *Chaetocnema heptapotamica* Lub, A. Lubischew det (1 ZMAS); UZBEKISTAN: 1) Ugamski khrebet, 1500m, Sidzhak, 13.V.1990, Konstantinov A., 2) *Chaetocnema heptapotamica* Lubischew, No 30 (1 USNM).

Chaetocnema hortensis (Geoffroy)

Fig. 38, Map 32

hortensis Geoffroy 1785:98 (type locality: France, Paris [from title of work]; type depository: unknown, not in Geoffroy collection *teste* Doguet 1994); as *Altica*
aridella Paykull 1799:111 (type locality: Sweden [from title of work], Paris [from reference to Geoffroy 1762]; type depository: unknown); as *Galleruca*; Heikertinger 1951:213 (synonymized)
scabricollis Allard 1860:569 (type locality: "France mérid., Béziers"; type depository: MNHN); as *Plectroscelis*; Heikertinger & Csiki 1940:395 (synonymized)
convexa Motschulsky 1860:234 (type locality: Russia, Siberia, "Daourie"; type depository: unknown); as *Plectroscelis*; Heikertinger 1951:213 (synonymized)
granosa Motschulsky 1860:234 (type locality: Russia, Siberia, "Daourie"; type depository: unknown); Heikertinger 1951:213 (synonymized)
breuskei Pic 1910:305 (as variety of *hortensis*; type locality: Greece, Peloponnes, "Hagios Weassis"; type depository: MNHN, lectotype designated here); Heikertinger 1951:213 (synonymized)

Distribution: Afghanistan (Gruev 1988a), Albania (Gruev 1992), Algeria, Austria (Redtenbacher 1849), Azerbaijan, Belarus (Lopatin 1986), Belgium (Derenne 1963),

Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1978), Chad (Scherer 1961b), China (Gressitt & Kimoto 1963), Croatia (Gruev 1979), Cyprus (Gruev & Döberl 1997), Czech Republic, Denmark (Klefbeck & Sjöberg 1957), Egypt (Alfieri 1976), England (Stephens 1839), Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Georgia, Germany (Weise 1888), Greece (Pic 1910), Hungary (Vig 1996), Iran (Berti & Rapilly 1973), Iraq (Gruev 1995a), Ireland (Anderson et al. 1997), Israel (Furth 1985), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Latvia (Pūtele 1971), Liechtenstein, Lithuania, Luxembourg, Macedonia (Gruev 1979), Malta, Moldova, Mongolia (Medvedev 1979), Montenegro (Gruev 1979), Morocco (Jolivet 1967), Netherlands (Leesberg 1881), Norway (Klefbeck & Sjöberg 1957), Poland (Bartkowska 1994), Portugal (Bastazo et al. 1993), Romania (Gruev et al. 1993), Russia (West Siberia, Irkutsk, Buryatia, Evenkia, Yakutia, Sayan Mts., Primorsky Kray, European part) (Konstantinov 1988), Saudi Arabia (Medvedev 1996), Serbia (Gruev 1979), Slovakia (Gruev 1984), Slovenia (Gruev 1992), Spain (Bastazo et al. 1993), Sudan (Scherer 1979), Sweden (Gruev & Döberl 1997), Switzerland (Stierlin 1886), Syria (Gruev & Döberl 1997), Tajikistan (Lopatin & Tadjibaev 1972), Tunisia, Turkey (Gruev & Kasap 1985), Turkmenistan, Ukraine (Carpathians) (Konstantinov 1988), Uzbekistan, Yemen (Medvedev 1996).

Host plants: *Sesleria coerulea*, *Arrhenatherum avenaceum* (Heikertinger 1925); *Phleum pratense*, *Hordeum bulbosum* (Tölg 1938); cereal grains, grasses, *Cyperus esculentus* (Heikertinger 1951); *Sesleria coerulea*, *Arrhenatherum elatius*, *Avena*, *Triticum*, *Hordeum vulgare*, *Secale cereale*, *Poa pratensis*, *Bromus*, *Festuca*, *Agropyrum*, *Dactylis glomerata*, *Cyperus esculentus* (Doguet 1994); Poaceae (Biondi 1990a); *Sesleria coerulea*, *Arrhenatherum elatius*, *Avena*, *Triticum*, *Hordeum vulgare* (Fogato & Leonardi 1980), *Linum usitatissimum* (Palij 1961).

Description: Body length (excluding head) 1.79–2.08 mm; width 1.01–1.23 mm. Ratio of elytron length at suture to maximum width, 2.33–2.46. Ratio of pronotum width at base to length at middle, 1.61–1.64. Ratio of length of elytron at suture to length of pronotum at middle, 2.88–2.95. Ratio of width of both elytra at base to width of pronotum at base, 1.11–1.15. Ratio of maximum width of both elytra to maximum width of pronotum, 1.34–1.37.

Elytron bronzish without yellow, rarely greenish without yellow. Pronotum bronzish, rarely greenish. Antennomere 1 completely yellow. Antennomere 2 completely yellow, rarely partly dark brown. Antennomere 3–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.80–1.95. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without

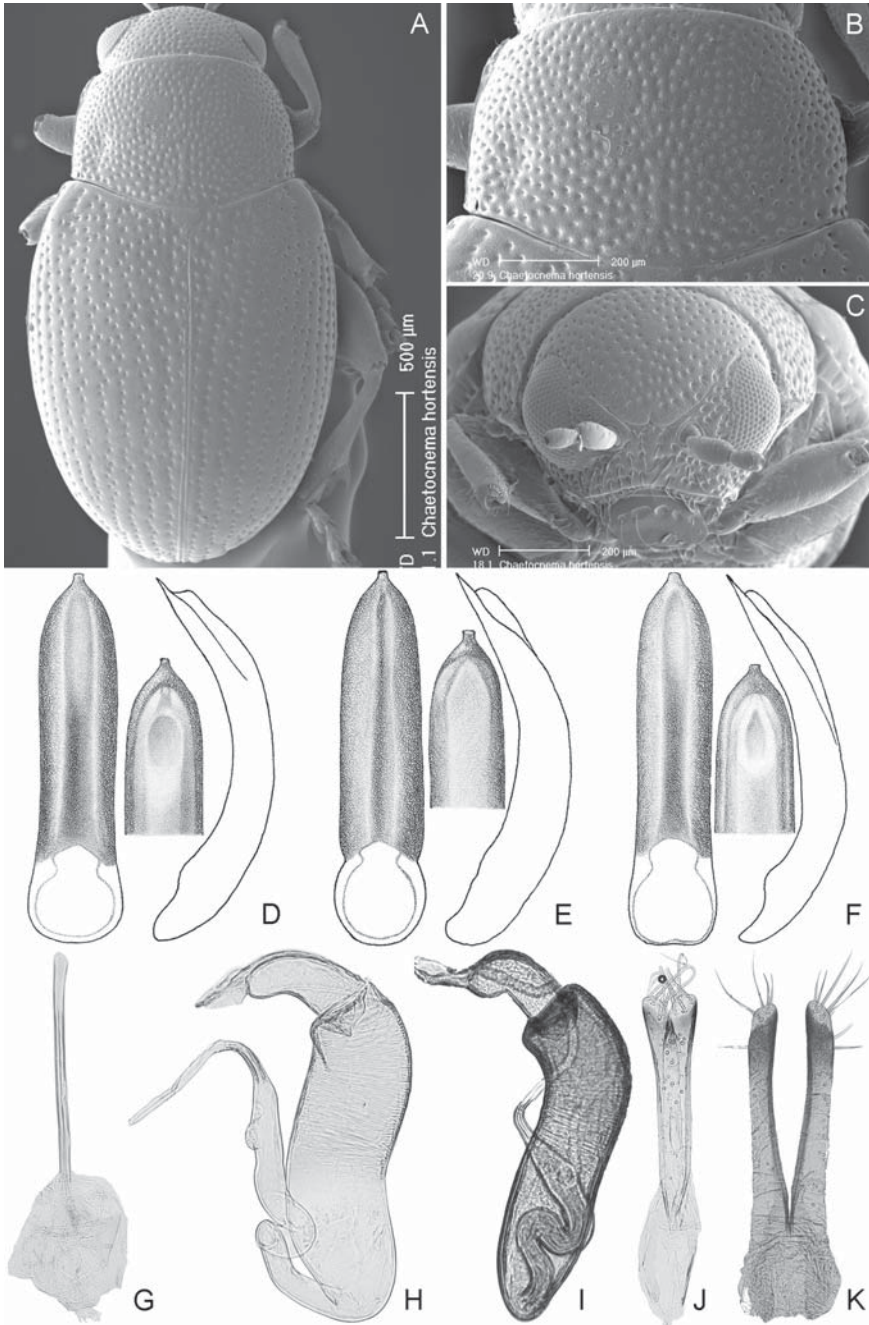
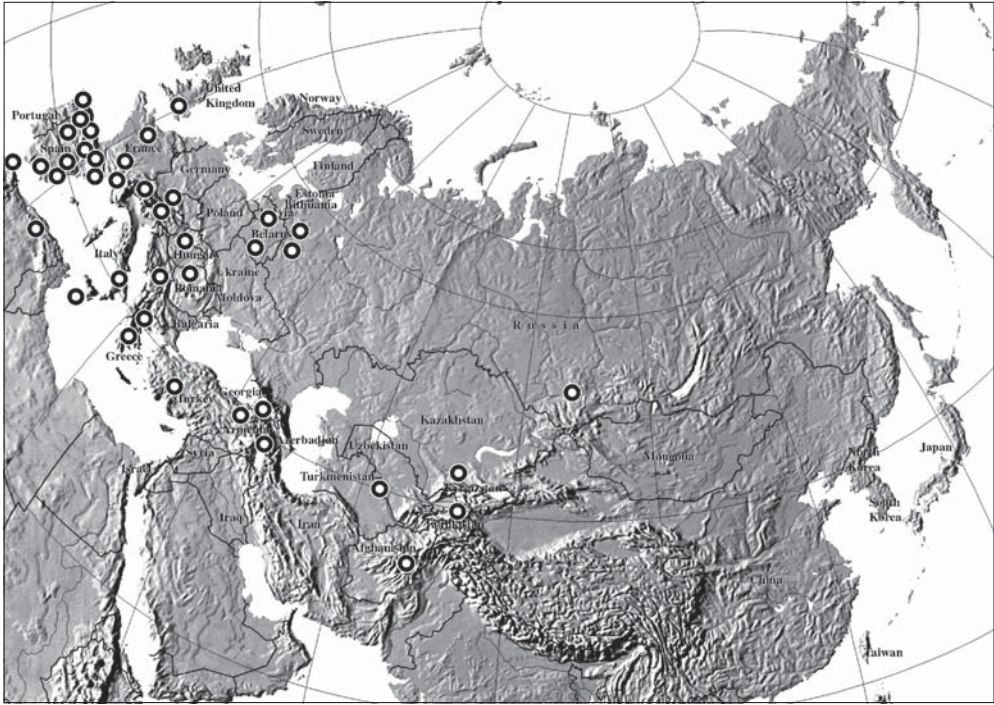


Figure 38. *Chaetocnema hortensis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, E, F, aedeagus, ventral, lateral, and dorsal; G, tignum; H, I, spermatheca; J, K, vaginal palpi. Origin of specimens: D, France; E, Germany, F, Georgia, G, H, J, Ahaldaba, I, K, Belarus.



Map 32. *Chaetocnema hortensis*

longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through fifth rows of punctures regular or confused. Sixth row of punctures confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.37–1.42. First and second male protarsomere length to length ratio, 1.63–1.73. First and second male protarsomeres width to width ratio, 1.45–1.56. Length of metatibia to distance between denticle and metatibial apex 2.31–2.37. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.28–2.33. First male protarsomere maximum width to width at base ratio, 2.62–2.68. First and second male metatarsomere length to length ratio, 1.60–1.64. First and second male metatarsomere width to width ratio, 1.10–1.20. Third and fourth male metatarsomere length to length ratio, 2.19–2.26.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse or sharp margins; well-developed, with sharp margins at basal half. Apical and middle part of longitudinal groove as wide as basal; middle part as wide as apical. Longitudinal groove in middle subequal to or narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, flat on top, and wide or narrow; slightly curved dorsally in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically or near middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum gradually narrowing, narrower than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema hortensis* is one of the most common species in Eastern Europe. It can be separated from the other common species, *C. aridula*, by its coarser punctation on the pronotum, with its lateral sides being straight (they are evenly convex in *C. aridula*), and by the ventral groove of the aedeagus lacking transverse wrinkles (wrinkles are present in *C. aridula*). *Chaetocnema hortensis* var. *brenskiei* was treated as a valid species by Gruev & Döberl 1997:79 (see also Lopatin 1990). The male genitalia of the lectotype of *C. brenskiei* looks exactly like one of *C. hortensis* specimens from France. The only difference is its greenish color. The shape of the spermatheca is nearly identical in both *C. brenskiei* and *C. hortensis* as well. Based on that, we consider *Chaetocnema hortensis* var. *brenskiei* Pic to be a synonym of *C. hortensis*. Specimens from Great Britain differ in having the second antennomere slightly darkened.

Type material: *Chaetocnema hortensis brenskiei*: Lectotype male: 1) Morea, Hagios Weassis, Brenske; 2) *hortensis brenskiei*; 3) type; 4) Museum Paris. Coll. M. Pic; 5) Lectotype *Chaetocnema hortensis brenskiei* Pic des. A. Konstantinov and S. Lingafelter, 2003 (MNHN).

Material: AFGHANISTAN: 1) O. Afghan. 1952, J. Klapperich, 2) Umg. Kabul, 1740 m, 16.VI, 3) *Chaetocnema hortensis* Geoff., I. Lopatin det. 1961 (1 USNM); ALGERIA:

1) Azazga, Kabylie (1 BMNH); ARMENIA: 1) Armenia, Aragatz mt., Antarat vil. Amberd castle, 29.V.1999 2025m, 40°21'00"N 44°16'00"E, leg. A. Konstantinov (2 USNM); 1) Armenia, Aragatz mt., Antarat vil. Amberd castle, 29.V.1999 2200m, 40°21'00"N 44°16'00"E, leg. A. Konstantinov (10 USNM); 1) Armenia, Khosrov reserve, 26.V.1999, 39°58'74"N 44°52'14"E, fr.Ppstt 2 base camp, leg. A. Konstantinov (1 USNM); 1) Arm. SSR, 3.VI.1987, 2500m, subalpine meadow, Khosrov, Karasev V., 2) *Chaetocnema hortensis* Geoffroy, det. A. S. Konstantinov, 2003 (1 USNM); AUSTRIA: 1) ? Steiermark Stuhleck, 2) *Chaetocnema hortensis*, Heikertinger det. (1 NHMW); 1) Marburg, Styr., Scheuch (3 BMNH); 1) N. Ostr., 2) *Chaetocnema hortensis*, Heikertinger det. (2 NHMW); 1) Wien, Donau, 2) *Chaetocnema hortensis*, Heikertinger det. (2 NHMW); BELARUS: 1) Belarus: Gomel terr. Poles'e, Turov/ Khvoensk/ Khlupki. 11.VI.1987 52°04'00"N 27°44'00"E, leg. A. Pisanenko, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (4 USNM); 1) Belarus: Gomel terr. Turov env. 11.VI.1980 52°04'00"N 27°44'00"E, wet meadow, swamp, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (5 USNM); 1) Belarus: Gomel terr. Turov env. 12.VI.1980 52°04'00"N 27°44'00"E, river Stviga, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Belarus: Gomel terr. Turov env. 14.VI.1980 52°04'00"N 27°44'00"E, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (3 USNM); 1) Belarus: Gomel terr. Turov env. 23.VI.1980 52°04'00"N 27°44'00"E, Beloe fish farm, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (7 USNM); 1) Belarus: Gomel terr. Turov env. 24.VI.1980 52°04'00"N 27°44'00"E, road, dry meadow, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Belarus': Gomel' terr. Turov env. 16.VI.1980 52°04'00"N 27°44'00"E, leg. A. Konstantinov, 008 (1 USNM); 1) Belarus': Minsk env. "Svalka", 9.V.1980 54°00'00"N 27°17'00"E, wet to dry meadow, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (7 USNM); 1) Belarus': Minsk env. Minskoe more, 7.IX.1980 54°00'00"N 27°17'00"E, dry meadow, swamp, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (2 USNM); 1) Belarus': Minsk terr., Minsk env. Rudensk 28.V.1980, Ptich' riv. meadow, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (4 USNM); 1) Belarus': Vitebsk terr. Braslav reg. Chernyshki 9.VII.1981 hills, lake env. leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (2 USNM); 1) Belarus': Vitebsk terr. env. Braslav, Opsa, 17.VII.1981, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Belarus': Vitebsk terr. env. Braslav, wet meadow, lake, 55°38'02"N 27°03'14"E 13. VII.1981, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); BOSNIA-HERZEGOVINA: 1) Prenj Mountains, Orno Polje (1300-1500 m), August 9-12, 1936 (4 BMNH); FRANCE: 1) Bu du Rhone, Aix-en Provence, September 19, 1975, leg. M. I. Russell (1 BMNH); 1) Coissac Bugeat, August 26, 1983, leg. M. Bergeal (16 BCPF); 1) Marais du Cerisaie, Forest de Rambouillet, May 18, 1984, leg. M. Bergeal (3 BCPF); 1) St. Symphorien, Lac de Gd. Lieu, Passay, Le Longeraux, Ft. de

Givry, Dampierre/Avre, Chatel de Neuvre, Versailles, May, June, July, August, leg. M. Bergeal (10 BCPF); 1) Tourbieres, April 7, 1985, leg. M. Bergeal (10 BCPF); 1) Vauchuse, Buoux, Luberon Mtns., September 21-22, 1975, leg. M. I. Russell (1 BMNH); 1) 19-Le Longeroux, 15 VIII 87, M. Bergeal, 2) Collection, M. Bergeal, Versailles, 3) *Chaetocnema hortensis* (Geoff.), A. Baselga 2009 (1 USNM); 1) general sweeping, 2) France: B. du Rhone, Aix-en-Provence, 19.ix.1975, M. I. Russell, 3) M. I. Russell., B. M. 1979-281, 4) *Chaetocnema hortensis* Geof., det. M. L. Cox, 1976 (1 USNM); 1) Rambouillet ie Cerisaie, M. Bergeal, 7 X 84, 2) Collection, M. Bergeal, Versailles (1 USNM); GEORGIA: 1) Akhaldaba, 15.VII.1983, meadow, Konstantinov A.S., 2) *Chaetocnema hortensis* Geoff. No 36. (1 USNM); 1) Pitsunda, 31.VII.1983, forest, Konstantinov, 2) *Chaetocnema hortensis* Geoffr., 3) *Chaetocnema hortensis* 1, det. A. Konstantinov, 2000 (1 USNM); GERMANY: 1) Bayerischer Wald, Tittling, 7.9.1977, leg. Döberl, 2) *Chaetocnema hortensis*, det. Döberl 1978 (1 USNM); GREECE: 1) Macedonia, Filipei environs, June 10, 1997, leg. B. et M. Bergeal (1 BCPF); Female 1) GR-Macédoine, Col Samarina-Fourkas, 1700 m. 10 VI 1997, B. et M. Bergeal, 2) Collection, M. Bergeal, Versailles (1 USNM); 1) GR-(Péloponnèse), Ahia / Ila, Mt Erimanthos, Env. Kalendzi, 13 VI 1996 Ph. Ponel leg., 2) Collection, M. Bergeal, Versailles, 3) *Chaetocnema hortensis* (Geoff.), A. Baselga 2009 (1 USNM); 1) GR-Epire, Korytiani (Saulaie), 7 VI 1997, B. et M. Bergeal, 2) Edéage différent, *Chaetocnema arida?*, 3) Collection, M. Bergeal, Versailles (1 USNM); 1) GR-Epire, Metsovo 1200 m., 8 VI 1997, B. et M. Bergeal, 2) collbergealversailles, 3) Edéage différent, *Chaetocnema arida?*, 4) *Chaetocnema hortensis* (Geoff.), det. A. S. Konstantinov, 2009 (4 USNM); 1) GR-Epire, Korytiani (Saulaie), 7 VI 1997, B. et M. Bergeal, 2) Collection, M. Bergeal, Versailles (1 USNM); HUNGARY: 1) Hungarica, Kisvelence, Dr. Lenci (1 USNM); ITALY: 1) Basilicata, Oasi, Lago Pantano di Pignola, May 9, 1991, leg. Angelini (1 BCPF); KAZAKHSTAN: 1) khr. Karatau, Chayan, 25.V.1990, Konstantinov, 2) *Chaetocnema hortensis* (Geoff.), det A. S. Konstantinov, 2004, 3) *Chaetocnema* sp. nov. 1, det. A. S. Konstantinov, 2004, 4) *Chaetocnema hortensis* (Geoff.), det A. S. Konstantinov, 2009 (1 USNM); MALTA: 1) Malta, Bahaisa, 24.VII.1997, Leg. D. Mifsud, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 MCMA); MOROCCO: 1) Tetuan (1 BMNH); PORTUGAL: 1) Açores, S Miguel, Sete Cidades, Lagoa Verde, 27. VII.1983, A. H. Törnvall, 2) collbergealversailles [pink label, both sides, run-on text], 3) Undetermined *Chaetocnema*, 4) *Chaetocnema hortensis* (Geoff.), det. A. S. Konstantinov, 2009 (1 USNM); ROMANIA: 1) ? Transsilv. Wingelm., 2) *Chaetocnema hortensis*, Heikertinger det. (1 NHMW); RUSSIA: 1) Barnauli 30 km. Tjagun, July 4, 1993, leg. Snizek (3 BCPF); 1) Russia, Bryansk terr. Unecha, 20.VIII.1979, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Russia, Bryansk terr. Unecha, 23.VI.1981, 52°50'39"N 31°56'03"E, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (2 USNM); 1) Russia, Bryansk terr. Unecha, pine forest, 20.VI.1981, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (5 USNM); 1) Russia, Bryansk terr. Unecha, Unecha river, 20.VI.1981, 52°50'39"N 31°56'03"E, leg.

A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (5 USNM); 1) Russia, Bryansk terr. Unecha, Unecha river, dry meadow, 9.VIII.1980, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (2 USNM); 1) Russia, Krasnodar reg., Taman' Pen., env. of Golubitskoe, 31.V.1999, 45°16'20"N 37°22'52"E, leg. A. Konstantinov (1 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 12.VII.1979, Skotinino, Ugra riv., 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (2 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 23.VII.1980, Skotinino, Ugra river, 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (6 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 26.VII.1981, Skotinino, dry hill slope, 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 28.VI.1983, Skotinino, Ugra riv., 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (1 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 28.VII.1980, Skotinino, Ugra, Dry meadow, 55°04'50"N 35°00'18"E leg. A.Konstantinov, 2) *Chaetocnema hortensis* (Geoffroy) det. A.S. Konstantinov (6 USNM); SERBIA: 1) Serbia, Morovic, July 3, 1958, leg. R. L. Coe (1 BMNH); SPAIN: 1) Alicante: Calpe, September 13, 1972, leg. H. Fülcher (2 BCPF); 1) Canales, Pr. Logrono (3 BMNH); 1) Cuenca (2 BMNH); 1) E. Andalusien (Algeciras, Sierra de Luna/Fates, 200-350 m), March 23, 1994, leg. Assing (1 BCPF); 1) E. Andalusien (Sierra Nevada, 1400-1900 m), March 23, 1994, leg. Assing (1 BCPF); 1) E. Granada (Güejar-Sierra, Rio Maltena, 1300 m), April 17, 1995, leg. M. Bergeal (1 BCPF); 1) La Granja (1 BMNH); 1) Moncayo, 4000-5000 ft. (3 BMNH); 1) A Coruña, A Capela-Caaveiro, 07-IV-2000, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, A Capela-Caaveiro, 08-V-2000, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, A Capela-Caaveiro, 15-III-1997, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, A Capela-Caaveiro, 22-II-1999, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Aranga, 15-VIII-1996, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (4 BASC); 1) A Coruña, Corrubedo-Vilar, 26-X-1997, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (5 BASC); 1) A Coruña, Lavacolla, 12-VIII-1996, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 13-IV-1996, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 26-V-1997, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Monfero-Abeleira, 05-XI-1999, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 BASC); 1) A Coruña, Monfero-Isalonga, 08-IX-1999, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Monfero-Taboada, 19-XI-1998, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Monfero-Vilaxestoso, 03-IV-1999, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) A Coruña, Xuño-3, 02-V-1998, leg. Baselga, 2) *Chaetocnema*

hortensis (Geoff.), Baselga det. (1 BASC); 1) Albacete, Calar del Mundo, Pico Argel, 22-IV-1992, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 MNCN); 1) Ávila, Puerto del Pico, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (3 MNCN); 1) Cantabria, Picos de Europa, Espinama, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Granada, Lanjarón, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (9 MNCN); 1) Huesca, Panticosa, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Huesca, Selva de Oza, 6-VII-1943, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Jaén, Santa Elena, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) León, Ancares-A Cuiña, 25-VII-1998, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (3 BASC); 1) León, Ancares-Puerto de, 19-VII-1997, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 BASC); 1) Lérida, Pyrenees, X-1903, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Lugo, O Incio-Toldaos, 22-VIII-1999, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) Madrid, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Madrid, Madrid, 20-VII-1988, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Ourense, Monterrei-Requeixo, 06-IV-1993, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 BASC); 1) Ourense, V. Bolo-Pradorramisquedo, 13-V-2000, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 BASC); 1) Pontevedra, A Estrada, 14-VIII-1996, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (6 BASC); 1) Pontevedra, Bandeira, 14-VIII-1996, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) Pontevedra, Cuntis, 07-IX-1997, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) Pontevedra, Rodeiro, 17-VII-1998, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 BASC); 1) Zamora, VIII-1958, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (1 MNCN); 1) Zamora, Porto-Segundera, 13-V-2000, leg. Baselga, 2) *Chaetocnema hortensis* (Geoff.), Baselga det. (2 BASC); SWITZERLAND: 1) Dielsdorf (650 m), August 17, 1964, leg. L. Masner (1 BCPF); TAJIKISTAN: 1) Tadj. SSR, Garm. r., kolkhoz NKVD, 22.VI.1948, Yu. Antova 79 (1 USNM); TURKEY: 1) Konya: Ugurlu, May 17, 1998, leg. B. et M. Bergeal (2 BCPF); 1) Turkey. 5 km N Askale, 07.VI.1999, pass 1500m, fields along river, leg. A. Konstantinov (7 USNM); 1) Turkey. 8 km S Askale, 07.VI.1999, pass 1600m, 39°56'79N 40°45'88E, leg. A. Konstantinov (4 USNM); 1) Turkey. 8 km S Bayburt, 07.VI.1999, ab 1500m, field and meadows, leg. A. Konstantinov (1 USNM); 1) Turkey. Bayburt-Erzurum, 07.VI.1999, pass 2400m, 40°01'77N 40°30'85E, leg. A. Konstantinov (5 USNM); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov, 2) *Chaetocnema hortensis* (Geoff.), A. Baselga 2009 (3 USNM); 1) Turkey: Road 51-01 between Gölcük and Aksaray, 58 km E. Aksaray: June 17, 1999: Steve Lingafelter, 2) *Chaetocnema hortensis* (Geoff.), A. Baselga 2009 (11 USNM); TURKMENISTAN: 1) Buchara, Repetek, 4.1900.Coll. Hauser, 2) *Chaetocnema hortensis*, Heikertinger det. (2 NHMW); Male 1) Turkmenia, Dargan Ata 5 VI 92, Snížek leg., 2) Collection, M. Bergeal, Versailles (2 USNM); UNITED KINGDOM: 1) Fleswick Bay, Dorset (West Milton), Teignmouth (South Devon), Essex, New Forest (150 BMNH).

***Chaetocnema igori*, new species**

Fig. 39, Map 33

Distribution: Afghanistan, Armenia, Azerbaijan, Kazakhstan, Tajikistan, Turkey, Uzbekistan.

Host plants: unknown.

Description: Body length (excluding head) 1.94–2.37 mm; width 1.05–1.34 mm. Ratio of elytron length at suture to maximum width, 2.88–3.17. Ratio of pronotum width at base to length at middle, 1.39–1.43. Ratio of length of elytron at suture to length of pronotum at middle, 2.67–2.70. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31–1.33.

Elytron bronzish without yellow, copperish without yellow, rarely greenish without yellow. Pronotum bronzish, copperish, rarely greenish. Antennomere 1 partly dark brown, rarely completely yellow. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, retuse, rarely emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.81–2.85. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures present, rarely absent. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures larger or subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through fifth rows of punctures confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.55–1.58. First and second male protarsomere length to length ratio, 1.81–1.85. First and second male protarsomeres width to width ratio, 1.25–1.27. Length of metatibia to distance between denticle and metatibial apex 2.61–2.67. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent or present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.22–2.28. First male protarsomere maximum width to width at base ratio, 1.87–1.91. First and second male metatarsomere length to length ratio, 1.27–1.30. First and second

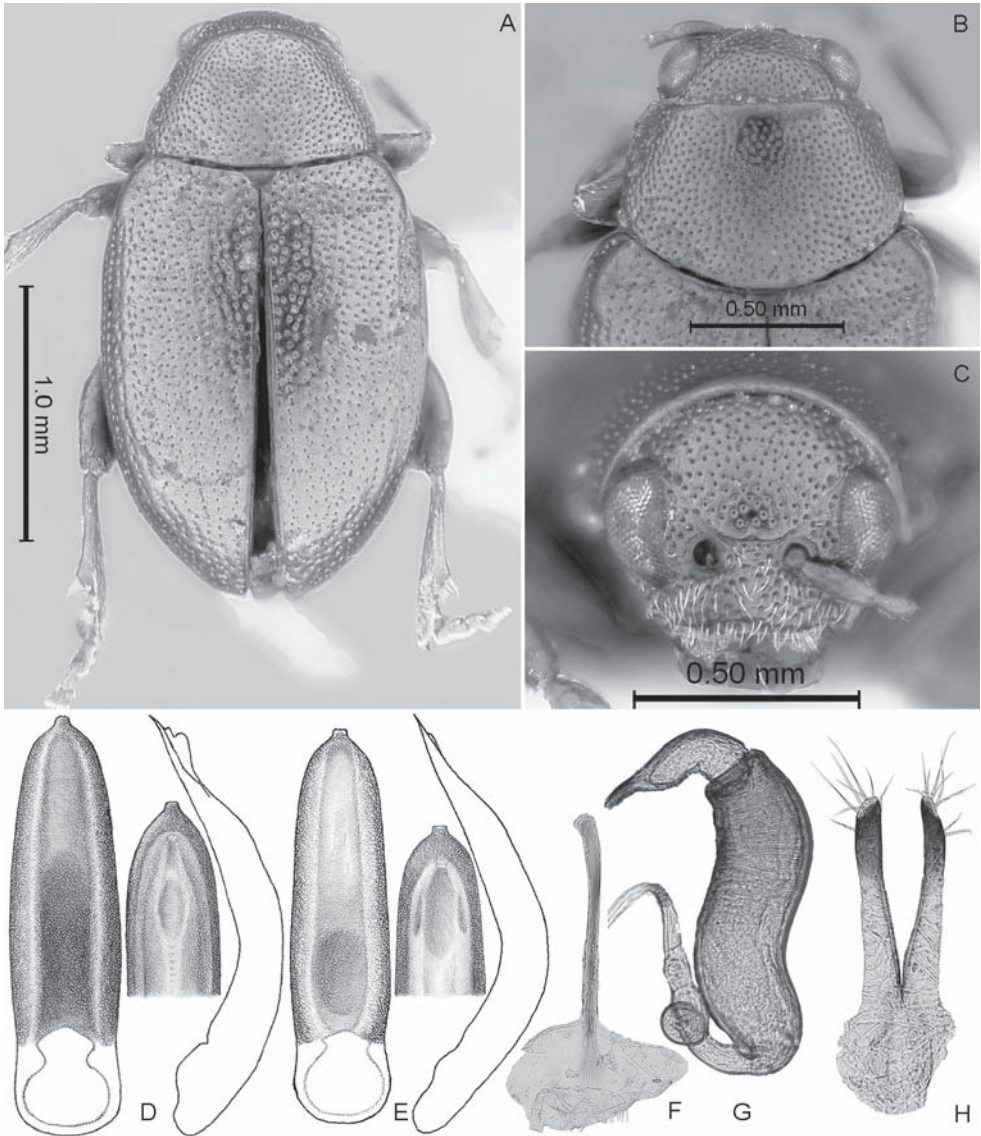
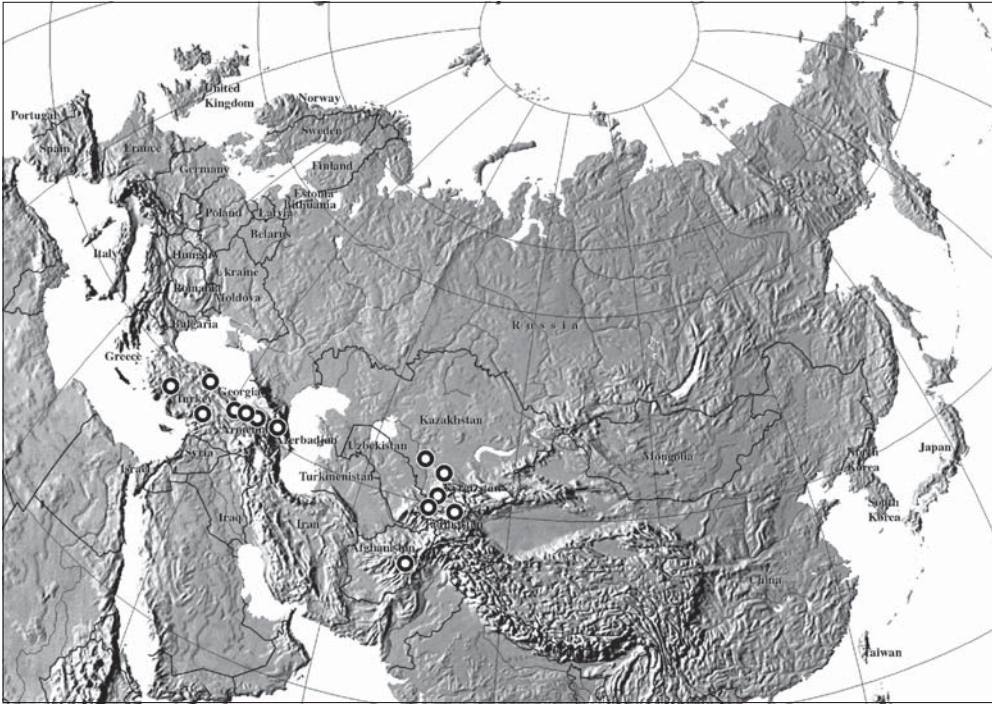


Figure 39. *Chaetocnema igori*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, E, aedeagus, ventral, lateral, and dorsal; F, tignum; G, spermatheca; H, vaginal palpi. Origin of specimens: D, Aksu; E, Sidzhak.

male metatarsomere width to width ratio, 1.07–1.09. Third and fourth male metatarsomere length to length ratio, 2.42–2.45.

Apical third of aedeagus parallel-sided or narrowing. Width of aedeagus distal to basal opening greater than or subequal to width just before apical declivity. Apical



Map 33. *Chaetocnema igori*

part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed with sharp or obtuse margins in basal half. Apical part of longitudinal groove narrower than basal; middle part narrower than basal, rarely wider than basal; rarely wider than apical. Longitudinal groove in middle rarely greater in width than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight or slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present or absent; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded.

Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema igori* is similar to *C. grandis* and *C. sinuata*. It can be separated from *C. sinuata* by the absence of transverse wrinkles on the sides of the ventral groove of the aedeagus. From *C. grandis* it can be separated by the more abruptly narrowing apical third of the aedeagus and by the relatively wide distal part of the ventral groove of the aedeagus (distal part of the ventral groove is narrower than the basal part in *C. grandis*).

Etymology: The name is a patronym dedicated to Igor Konstantinovich Lopatin in recognition of his achievements in the study of leaf beetles of Middle and Central Asia.

Type material: *Chaetocnema igori*: Holotype male: 1) Uzbekistan: 10km SEE Charvak, Ugamski mts., Sidzhak, 2000 m 7.V.1989, leg. A. & O. Konstantinov, 2) *Chaetocnema igori* sp. nov., det. A. S. Konstantinov, 2009 (1 USNM); Paratypes: AFGHANISTAN: 1) Afghanistan, Umgeb. Kabul, leg. J. Klapperich, 2) *Ch. montenegrina*, Mohr dete. 1958, 3) *Chaetocnema montenegrina* Hkt., det. I. Lopatin, 1976, 4) *Chaetocnema igori* sp. nov., det. A. S. Konstantinov, 2009 (2 USNM); ARMENIA: 1) Armenia, env. Erevan Dzhervezh, 21.VI.1987, leg. V. Karasev (1 USNM); 1) Armenia, env. Erevan Dzhervezh, 21.VI.1987, leg. V. Karasev, 2) *Chaetocnema montenegrina* Heik., det A. S. Konstantinov, 2004 (1 USNM); 1) Armenia: Aragatz environs, Amberd Fortress: 2000 m, 40°15'00"N 44°16'40"E, 29 May 1999, sweeping, Steven W. Lingafelter (1 USNM); AZERBAIJAN: 1) Tylyyak on Gilyanchai, Nakh. kr., Znoiko, 3.VIII.933, 2) *Ch. montenegrina* Heik. det. Konstantinov A. S. (1 ZMAS); KAZAKHSTAN: Male: 1) Kazakhstan: Chimkent reg. Aksu-Dzhabagly Reserv, 42°20'00"N 070°40'00"E 22.V.1990, leg. A. & O. Konstantinov (2 USNM); 1) Talasskii Alatau, Djabagly river, 22.V.1990, 2) *Chaetocnema hortensis* 2, det. A. Konstantinov, 2000 (2 USNM); 1) Talasskii Alatau, Djabagly river, 18.V.90 (1 USNM); 1) Talasskii Alatau, Djabagly river, 19.V.90 (1 USNM); 1) Turkestan, Jany Kurġan, Sokolow, 2) *Chaetocnema montenegrina* Heik., det A. S. Konstantinov, 2004 (4 ZMAS); TAJIKISTAN: Male (at least 1 of 6). 1) Tadzhikistan, Karategin, Mt. ridge. Komarou, 14.VIII.1975, I. K. Lopatin (6 USNM); 1) Tadzhikistan, Karategin, Lopatin, 11.7.75 (5 ZMAS); 1) Badakhshan, Sohgarv near Rushan, I. Lopatin, 8.VIII.60 (1 USNM); TURKEY: 1) Turkey: 60-65km N. Aksaray, along HWY E90 to Ankara, Margin of Tuz Golu: 18 June 1999, 38°30'N, 33°30'E: sweeping/dead in lake: S. Lingafelter (1 USNM); 1) Turkey: Bayburt-Erzurum, 07.VI.1999, pass 2400 m, 40°01'77N 40°30'85E, leg. A. Konstantinov (2 USNM); 1) Turkey: Cappadocia, env. Yeshilihivsar, 16.VI.1999, wet swamp, leg. A. Konstantinov (1 USNM); Male (at least 1 of 2). 1) Turkey. 5 km N Askale, 07.VI.1999, pass 1500 m, fields along river, leg. A. Konstantinov (2 USNM); Male (at least 2 of 19). 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov (19 USNM); Male 2, Female 2. 1) Turkey: 8 km

S. Ciftlik (between Nigde & Aksaray), on Melendiz Dagi Range, 1500-2000 m: June 17, 1999, Steve Lingafelter, Coll. (8 USNM); 1) Turkey: Road 38-54 between Mustafapasa & Cemil, 5-10 km S. Mustafapasa, sweeping around pond, 15 June 1999: Lingafelter (4 USNM); 1) Turkey: Erzurum outskirts, 39°55'00"N 41°17'00"E, Sweeping: June 8, 1999, Steven W. Lingafelter (1 USNM); UZBEKISTAN: 1) Uzbekistan: 10km SEE Charvak, Ugamski mts., Sidzhak, 2000 m 10.V.1989, leg. A. & O. Konstantinov (1 USNM); 1) Uzbekistan: 10km SEE Charvak, Ugamski mts., Sidzhak, 2000 m 7.V.1989, leg. A. & O. Konstantinov (3 USNM); 1) Uzbekistan: 10km SEE Charvak, Ugamski mts., Sidzhak, 2000 m 9.V.1989, leg. A. Konstantinov (1 USNM); 1) Uzbekistan: 10km SEE Charvak, Ugamski mts., Sidzhak, 2000 m 7.V.1989, leg. A. & O. Konstantinov (10 USNM); Male 1) Uzbekistan: env. Tashkent, Chatkalskii mts., Chimgan 2000 m 29.IV.1989, leg. A. & O. Konstantinov, 2) *Chaetocnema igori* sp. nov., det. A. S. Konstantinov, 2009 (2 USNM); 1) Ugamskii mts, Chimgan, 28.V.90 (1 USNM); 1) Ugamskii mts, Sidjak, 10.V.1990 (1 USNM); 1) Ugamskii mts, Sidjak, 13.V.1990 (1 USNM).

***Chaetocnema imitatrix* Gruev**

Fig. 40, Map 34

imitatrix Gruev 1990b:89 (type locality: Bulgaria, Vitosha Mountains, "Goli vrâh"; type depository: USNM)

Distribution: Bulgaria (Gruev 1990b), Turkey.

Host plants: unknown.

Description: Body length (excluding head) 2.06–2.16 mm; width 1.08–1.17 mm. Ratio of elytron length at suture to maximum width, 2.34–2.46. Ratio of pronotum width at base to length at middle, 1.25–1.27. Ratio of length of elytron at suture to length of pronotum at middle, 2.45–2.47. Ratio of width of both elytra at base to width of pronotum at base, 1.08–1.13. Ratio of maximum width of both elytra to maximum width of pronotum, 1.41–1.43.

Elytron blueish without yellow, rarely greenish without yellow. Pronotum blueish, rarely greenish. Antennomere 1 partly dark brown. Antennomere 2 partly dark brown, rarely completely yellow. Antennomere 3–4 completely yellow, rarely partly brown. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.65–1.69. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

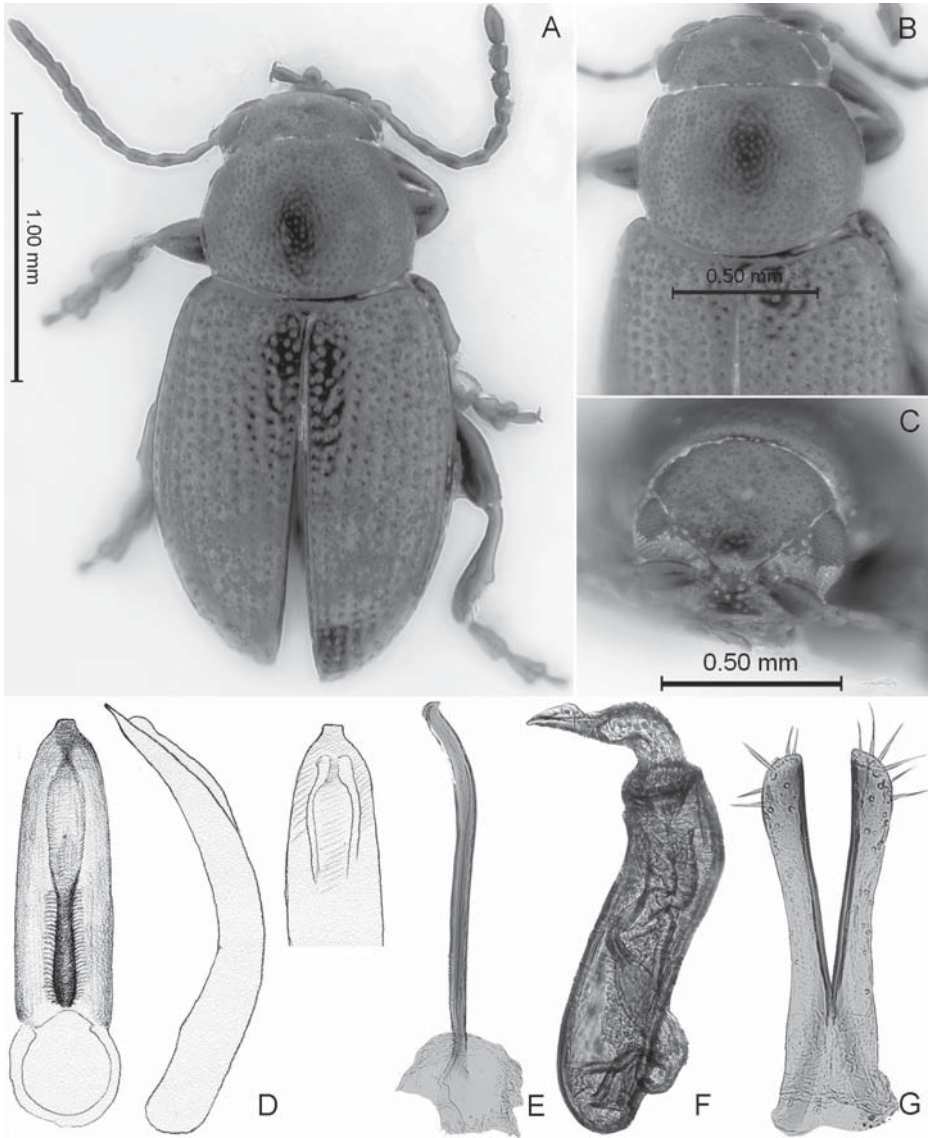
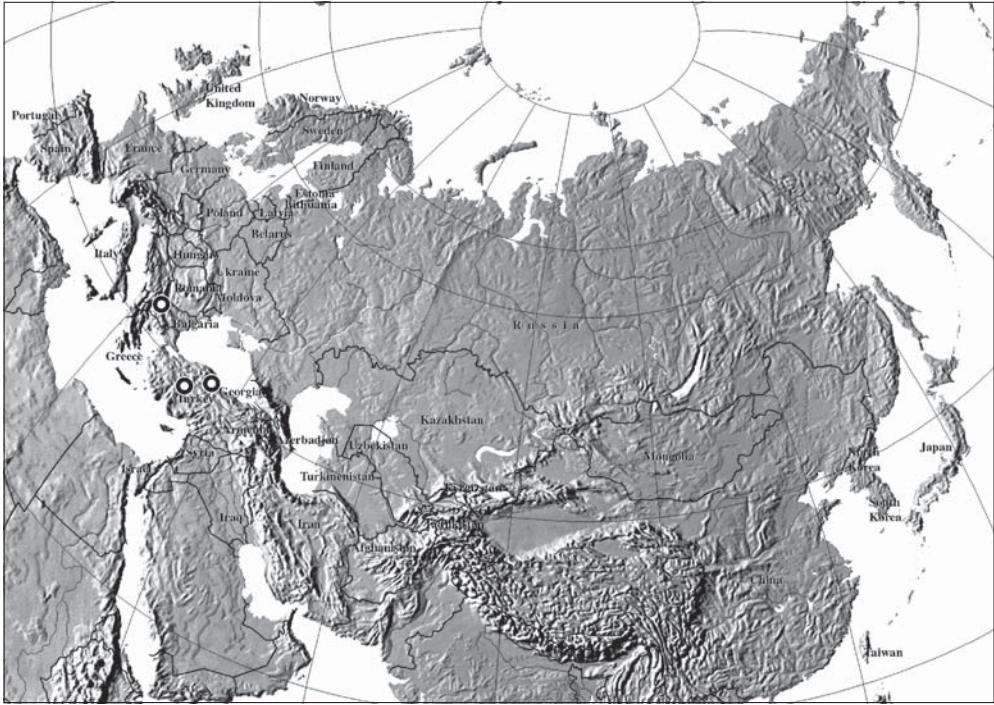


Figure 40. *Chaetocnema imitatrix*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic cal-



Map 34. *Chaetocnema imitatrix*

losity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through fifth rows of punctures confused, rarely regular. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.11–1.15. First and second male protarsomere length to length ratio, 1.56–1.60. First and second male protarsomeres width to width ratio, 1.41–1.44. Length of metatibia to distance between denticle and metatibial apex 2.20–2.37. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.86–2.00. First male protarsomere maximum width to width at base ratio, 2.81–2.85. First and second male metatarsomere length to length ratio, 1.56–1.60. First and second male metatarsomere width to width ratio, 1.20–1.23. Third and fourth male metatarsomere length to length ratio, 1.86–1.91.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal;

convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed with sharp margins at basal half. Apical part of longitudinal groove wider than basal; middle part narrower than basal and apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, short, flat on top; straight in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum strongly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization nearly flat. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: In the original description, Gruev (1990b) suggested that *C. imitatrix* is most similar to *C. subcoerulea* and *C. leonhardi* and provided a key for their separation. One of the two characters which were used to separate *C. subcoerulea* and *C. imitatrix* is the apex shape of the aedeagus. Gruev (1990b) suggested that it is pointed in *C. subcoerulea* and “not pointed” in *C. imitatrix*. We found that the shape of the apices of the aedeagi of *C. imitatrix* and *C. subcoerulea* are not as different as Gruev (1990b) suggested. They both have a denticle that is relatively wide and flat on the top. However, the second character used by Gruev (1990b), the width of the first protarsomere, is informative. The tarsomere is wider in *C. imitatrix* and narrower in *C. subcoerulea*. The aedeagus of *C. imitatrix* also differs in being more abrupt at the apex with the tip being curved dorsally (lateral view); in *C. subcoerulea* the aedeagus has a wider longitudinal groove. *Chaetocnema imitatrix* also differs significantly from *C. leonhardi*. For additional distinguishing characters see the key.

Apart from the aforementioned species, *C. imitatrix* is similar to *C. rufofemorata* and *C. eastafghanica* (the ventral side of the aedeagus of these species has a groove that is wider apically than basally and with the basal sides of the groove covered with wrinkles). It can be separated from all the species of the group by the following features of the aedeagus: basal, “narrow” part of the ventral groove with sides slightly convex and about as long as the apical, “wide” part of the groove; apex is narrowing abruptly; and the lateral sides are not parallel to each other, instead they are slightly narrowing from base to apex.

Type material: *Chaetocnema imitatrix*: Holotype male: 1) Bulg., 2) Mt. Vitosha, Goli vrâh, 1750-1800 m, 3) 29.5.1988, leg. P. Mitov, 4) *Chaetocnema imitatrix* Gruev, 5) Holotype (1 USNM); Paratype. 1) Bulg., 2) Mt. Vitosha, "Kumata", 1750 m, 3) 3.7.1988, leg. P. Mitov, 4) *Chaetocnema imitatrix* Gruev, 5) Paratype (1 USNM); Paratype. 1) Bulg., 2) Mt. Vitosha, Goli vrâh, 1800 m, 3) 24.10.1988, leg. P. Mitov, 4) *Chaetocnema imitatrix* Gruev, 5) Paratype (1 USNM).

Material: TURKEY: 1) Turkey. Env. of Aksaray 8 km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov (1 USNM); 1) Turkey: 8 km S. Ciftlik (between Nigde & Aksaray), on Melendiz Dagi Range, 1500-2000 m: June 17, 1999, Steve Lingafelter, Coll., 2) *Chaetocnema imitatrix* Gruev, A. Baselga 2009 (1 USNM).

Chaetocnema ingenua (Baly)

Fig. 41, Map 35

ingenua Baly 1877a:594 (type locality: "China"; type depository: BMNH; lectotype designated here); as *Plectroscelis*

aurifrons Jacoby 1885:733 (type locality: Japan, "Oguma"; type depository: BMNH; lectotype designated here); Kimoto & Takizawa 1994:320 (synonymized)

fulvipes Jacoby 1885:732 (type locality: Japan, "Hokkaido"; type depository: BMNH; lectotype designated here); Gressitt & Kimoto 1963:780 (synonymized)

japonica Jacoby 1885:732 (type locality: Japan, "Hakodate, the sandhills, Fukushima, Nügata"; type depository BMNH; lectotype designated here); Gressitt & Kimoto 1963:780 (synonymized)

micans; Palij 1961:11 (nomen nudum)

ogloblini Palij 1970:197 (type locality: North-East China, "Hangtaohedhsi"; type depository: ZMAS). **New synonym**

Distribution: China (Gruev 1981), Japan (Kimoto & Hiura 1971), South Korea (Takizawa 1985), North Korea, Russia (Palij 1970).

Host plants: *Carex kobomugi* (Chûjô & Kimoto 1961); *Digitaria adscendens* (Ohno & Hirano 1970), *Panicum miliaceum* (Palij 1961).

Description: Body length (excluding head) 2.20–2.44 mm; width 1.52–1.57 mm. Ratio of elytron length at suture to maximum width, 2.11–2.14. Ratio of pronotum width at base to length at middle, 1.46–1.52. Ratio of length of elytron at suture to length of pronotum at middle, 2.60–2.96. Ratio of width of both elytra at base to width of pronotum at base, 1.20–1.36. Ratio of maximum width of both elytra to maximum width of pronotum, 1.43–1.58.

Elytron copperish without yellow or light metallic green. Pronotum copperish or light metallic green. Antennomere 1–4 completely yellow. Antennomere 5 yellow to brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur light brown.

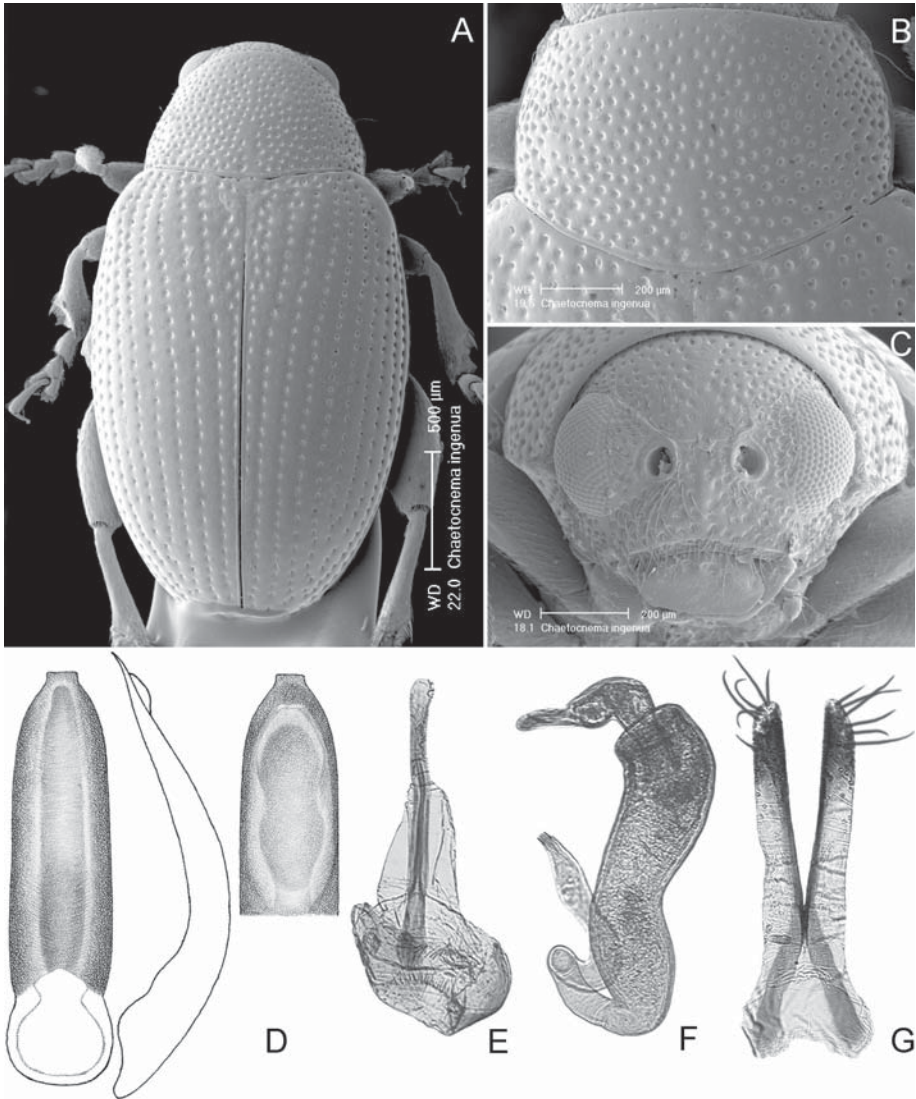
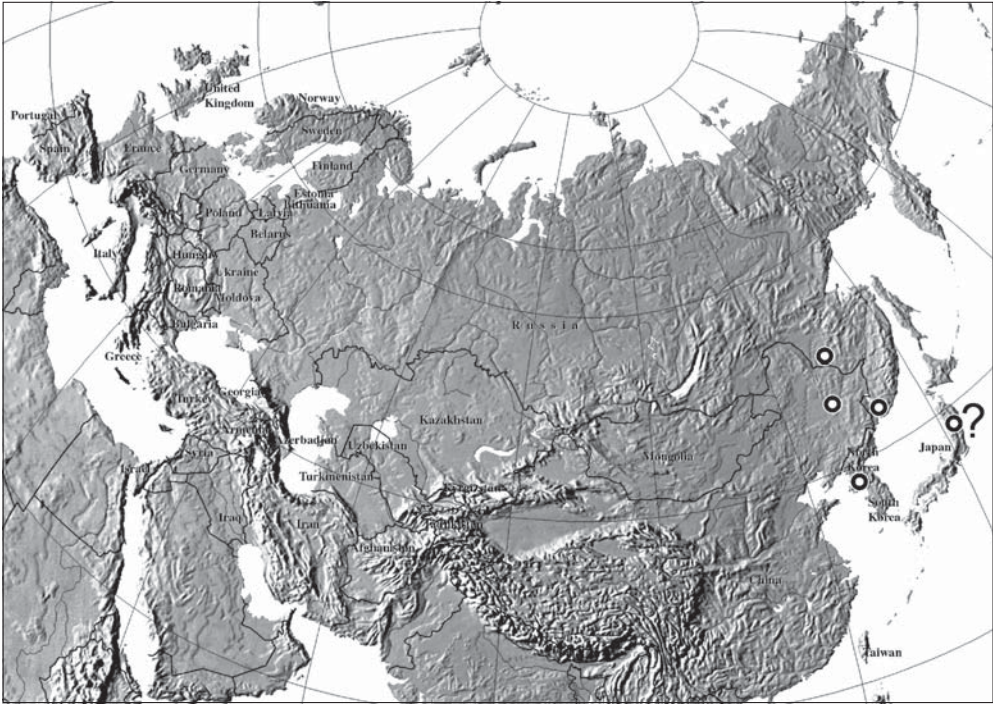


Figure 41. *Chaetocnema ingenua*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.44–1.75. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.



Map 35. *Chaetocnema ingenua*

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Longitudinal strip lacking punctures on base of pronotum absent, rarely present. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.42–1.46. First and second male protarsomere length to length ratio, 1.18–1.23. First and second male protarsomeres width to width ratio, 1.12–1.16. Length of metatibia to distance between denticle and metatibial apex 2.42–2.46. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.15–2.18. First male protarsomere maximum width to width at base ratio, 2.64–2.67. First and second male metatarsomere length to length ratio, 1.56–1.61. First and second male metatarsomere

width to width ratio, 1.06–1.11. Third and fourth male metatarsomere length to length ratio, 2.37–2.42.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp margins in basal half. Apical, middle, and basal part of longitudinal groove of equal width. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute transverse wrinkles present on basal part of ventral side of aedeagus; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization nearly flat. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: We base our concept of *C. ingenua* on the holotype female and a male from Japan preserved in the Natural History Museum, London. Gressitt & Kimoto (1963) placed *C. sinuata* in synonymy to *C. ingenua*. Although they share some of the characters of the male genitalia, they are easily separated from each other based on the proportions of the body and width of the apical denticle of the aedeagus which is wide in *C. ingenua* and narrow in *C. sinuata*. This changes an existing concept of *C. ingenua* and suggests that all printed Central Asian records of this species need verification. Study of the type material of *C. ogloblini* revealed that it is indistinguishable from *C. ingenua* and should be treated as its synonym.

Type material: *Chaetocnema ingenua*: Lectotype female: 1) Type, H.T., 2) Baly Coll., 3) *Plectroscelis ingenua* Baly, China, 4) [reverse side of label illegible: Trans:; Dec: 1876, 1-594, Type] 5) Lectotype *Chaetocnema ingenua* Baly des. A. S. Konstantinov et al. 2009 (1 BMNH).

Chaetocnema aurifrons: Lectotype female: 1) Type H.T., 2) Japan, G. Lewis, 1910-320, 3) *Chaetocnema aurifrons* Jac., 4) Lectotype *Chaetocnema aurifrons* Jacoby des. A. Konstantinov 2010, 5) *Chaetocnema ingenua* Baly det. A. Konstantinov 2010 (BMNH).

Chaetocnema fulvipes: Lectotype female: 1) Type H.T., 2) Japan, G. Lewis, 1910-320, 3) *Chaetocnema fulvipes* Jac., 4) Lectotype *Chaetocnema fulvipes* Jacoby des. A. Konstantinov 2010, 5) *Chaetocnema ingenua* Baly det. A. Konstantinov 2010 (BMNH).

Chaetocnema japonica: Lectotype female: 1) Type H.T., 2) Japan, G. Lewis, 1910-320, 3) *Chaetocnema japonica* Jac., 4) Lectotype *Chaetocnema japonica* Jacoby des. A. Konstantinov 2010, 5) *Chaetocnema ingenua* Baly det. A. Konstantinov 2010 (BMNH); Paralectotype: 1) Japan Lewis; 2) Jacoby coll. (BMNH). Paralectotypes: 1) Japan, G. Lewis, 1910-320. The rest of the labels are the same as lectotype (2 BMNH).

Chaetocnema ogloblini: Paratypes: 1) Blagoveschensk, 20.VI.27, 2) Paratypus, Ch. ogloblini Palij (1 ZMAS); 1) Blagoveschensk, 28.VI.27, na prose, 2) Paratypus, Ch. ogloblini Palij (1 ZMAS); 1) na prose, Amurskaya opyt. stantsiya, 19.VII, 2) Paratypus, Ch. ogloblini Palij (1 ZMAS); 1) Voroshilov, Ussur. 15.VI.31, T. Samojlov, 2) Paratypus, Ch. ogloblini Palij (9 ZMAS).

Material: CHINA: 1) Heilungkiang, June 28, 1965, leg. P. Hammond (1 BMNH); JAPAN: 1) Red label with symbol, 2) Japan., G. Lewis, 1910-320, 3) *Plectroscelis ingenua* Baly. (1 BMNH); NORTH KOREA: 1) Kaesong, Prov. South Pyongan, Pyongyan city park, 4.VIII.1971, No. 237, leg. S. Horvatovich, et J. Papp, 2) *Chaetocnema ingenua*, Gruiev det. (4 ZSMC); RUSSIA: 1) Blagoveschensk, 14.VII.30, 2) *Chaetocnema ingenua* Baly, det. I. K. Lopatin, 3) *Chaetocnema ingenua* 2, det. A. Konstantinov, 2000 (2 USNM).

***Chaetocnema jelineki* Lopatin**

Fig. 42, Map 36

jelineki Lopatin 1990:605 (type locality: South-East Iran, Baluchistan, "Beludzhistan"; type depository: NMPC)

Distribution: Iran (Lopatin 1990).

Host plants: unknown.

Description: Body length (excluding head) 2.45 mm; width 1.32 mm. Ratio of elytron length at suture to maximum width, 2.53. Ratio of pronotum width at base to length at middle, 1.41. Ratio of length of elytron at suture to length of pronotum at middle, 2.75. Ratio of width of both elytra at base to width of pronotum at base, 1.18. Ratio of maximum width of both elytra to maximum width of pronotum, 1.36.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur light brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.25. Frons evenly covered with rela-

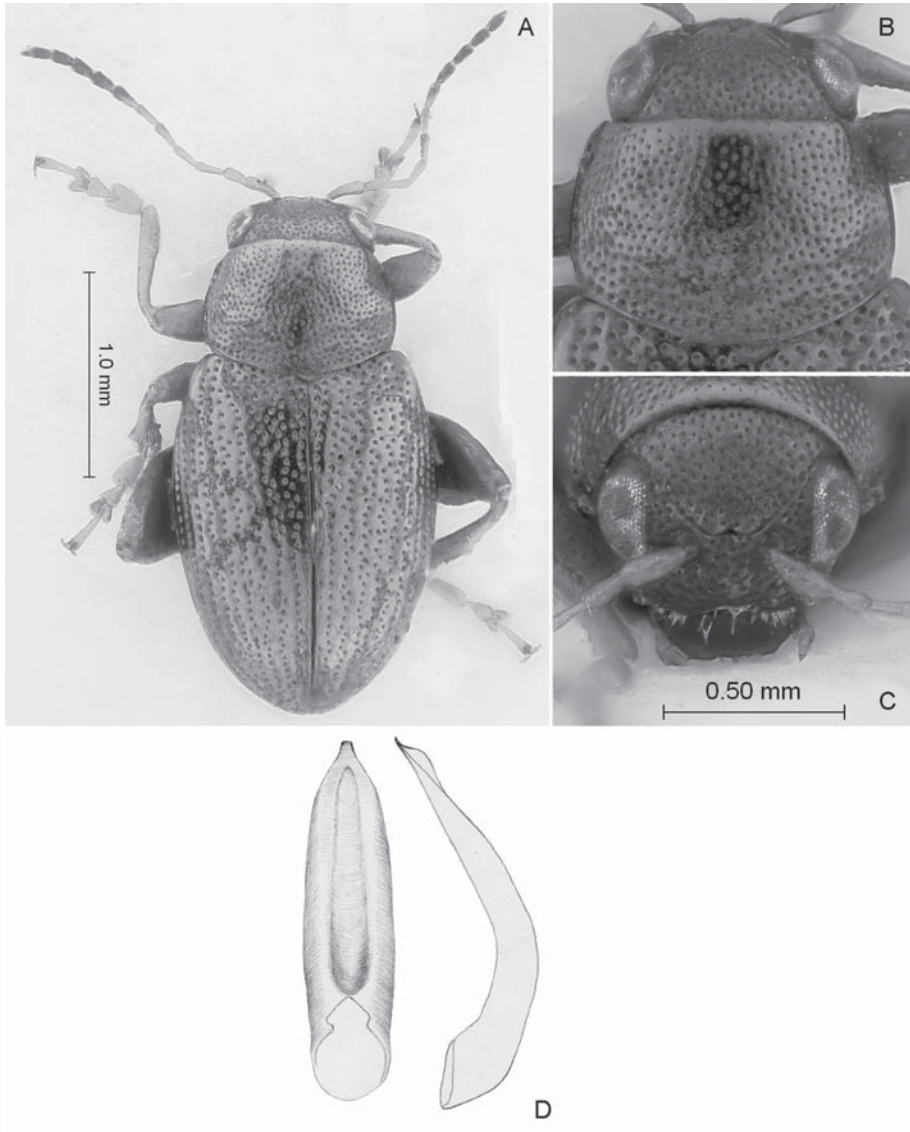
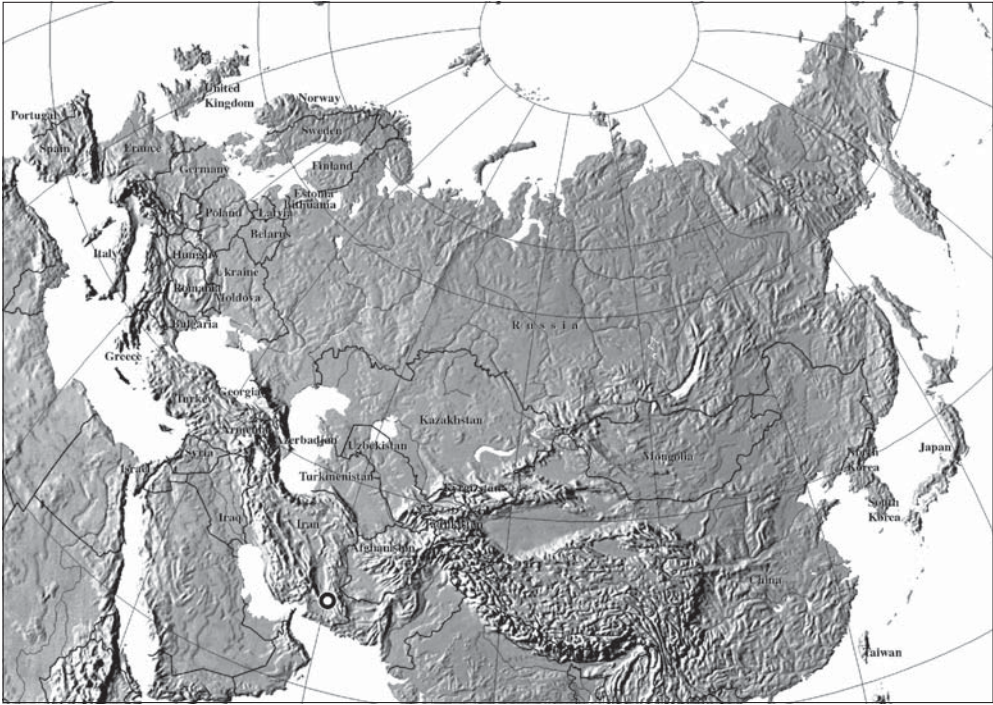


Figure 42. *Chaetocnema jelineki*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral.

tively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal



Map 36. *Chaetocnema jelineki*

margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.42. First and second male protarsomere length to length ratio, 1.40. First and second male protarsomeres width to width ratio, 2.00. Length of metatibia to distance between denticle and metatibial apex 1.88. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.63. First male protarsomere maximum width to width at base ratio, 1.88. First and second male metatarsomere length to length ratio, 1.45. First and second male metatarsomere width to width ratio, 1.04. Third and fourth male metatarsomere length to length ratio, 2.09.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view

narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus shallow with sharp margins; well-developed, with sharp margins in basal half. Apical and middle part of longitudinal groove narrower than basal; middle part wider than apical. Width of longitudinal groove at middle subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, narrow, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view abruptly curved with maximal curvature situated basally.

Remarks: In the original description Lopatin (1990) compares *C. jelineki* with *C. montenegrina* and provides the following characters: elytral punctuation is more regular, color is bright goldish bronze, front and middle legs entirely orange as well as four basal antennomeres. In addition, the aedeagi of *C. jelineki* and *C. montenegrina* differ in the shape of the apex (more gradually narrowing in *C. jelineki* and more abruptly narrowing in *C. montenegrina*) and the shape of the ventral groove (gradually narrowing from base to apex in *C. jelineki* and abruptly narrowing near the middle in *C. montenegrina*). *Chaetocnema jelineki* is also similar to *C. sahlbergi* and *C. sinuata*. It can be separated from *C. sahlbergi* by the relatively narrow ventral groove of the aedeagus (the groove is wide in *C. sahlbergi*). From *C. sinuata*, it can be separated by the aedeagus lacking transverse wrinkles on the sides of the ventral groove (they are present in *C. sinuata*).

Type material: *Chaetocnema jelineki*: Holotype male: 1) SE Iran m 12 km SSE Bazman 13.IV.1973, 2) Loc No 160, Exp. Nat. Mus. Praha, 3) Holotypus, 4) *Chaetocnema jelineki* sp. n. det. I. Lopatin 1988 (1 NMPC).

***Chaetocnema kabakovi* Lopatin**

Fig. 43, Map 37

kabakovi Lopatin 1995:102 (type locality: "Afghanistan, Bamian, Safedab"; type depository: ZMAS)

Distribution: Afghanistan (Lopatin 1995).

Host plants: unknown.

Description: Body length (excluding head) 1.79–1.84 mm; width 1.06–1.08 mm. Ratio of elytron length at suture to maximum width, 2.13–2.22. Ratio of pronotum width at base to length at middle, 1.51–1.52. Ratio of length of elytron at suture to length of pronotum at middle, 2.53–2.54. Ratio of width of both elytra at base to width of pronotum at base, 1.13–1.25. Ratio of maximum width of both elytra to maximum width of pronotum, 1.29–1.31.

Elytron copperish without yellow. Pronotum copperish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur yellow.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.71–1.85. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.50–1.53. First and second male protarsomere length to length ratio, 1.28–1.29. First and second male protarsomeres width to width ratio, 1.40–1.43. Length of metatibia to distance between denticle and metatibial apex 2.28–2.29. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.11–2.13. First male protarsomere maximum width to width at base ratio, 2.32–2.34. First and second male metatarsomere length to length ratio, 1.70–1.73. First and second male metatarsomere width to width ratio, 1.00–1.05. Third and fourth male metatarsomere length to length ratio, 1.86–1.89.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; flat, oblique at middle; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove narrower than basal. Middle part of longitudinal groove narrower than basal, as wide as apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximum curvature of aedeagus situated basally.

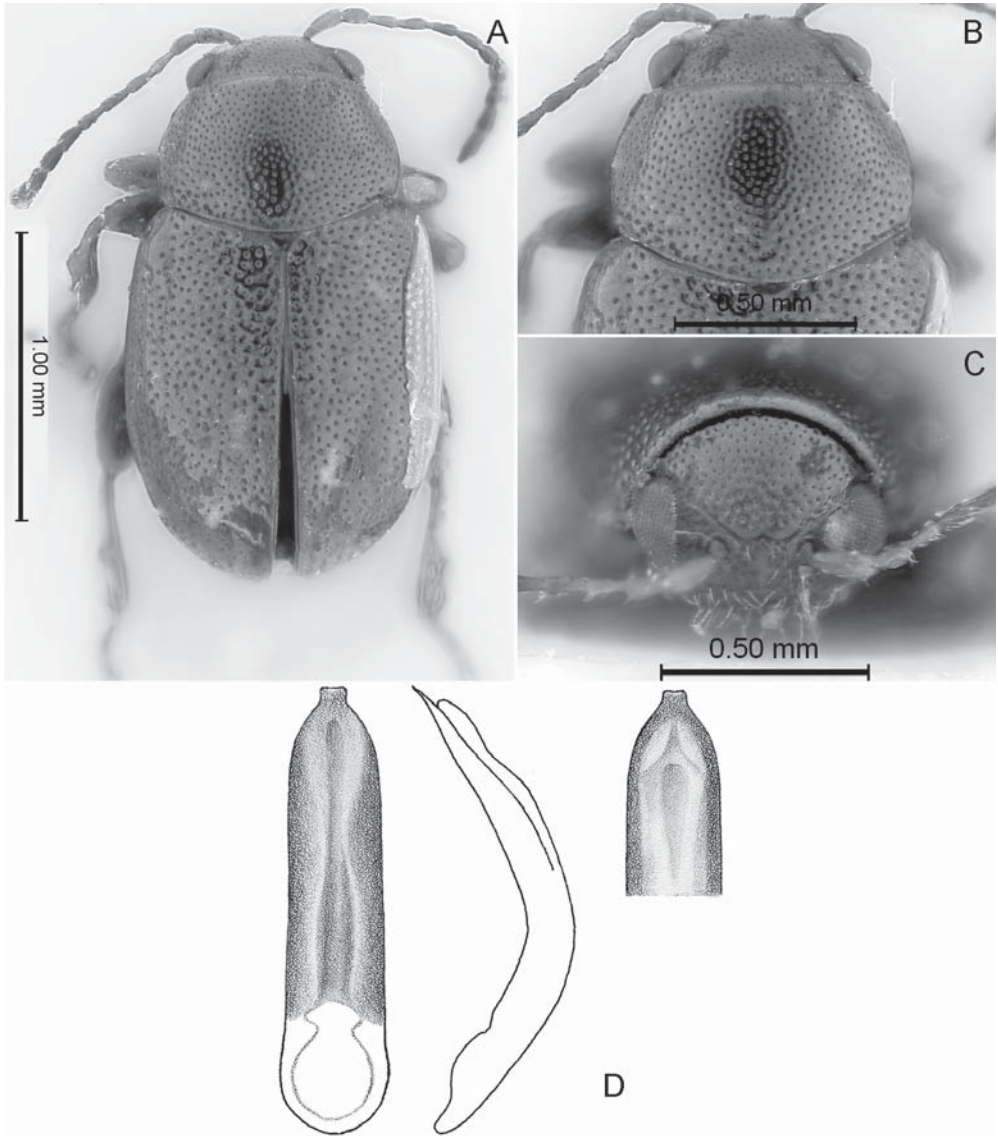
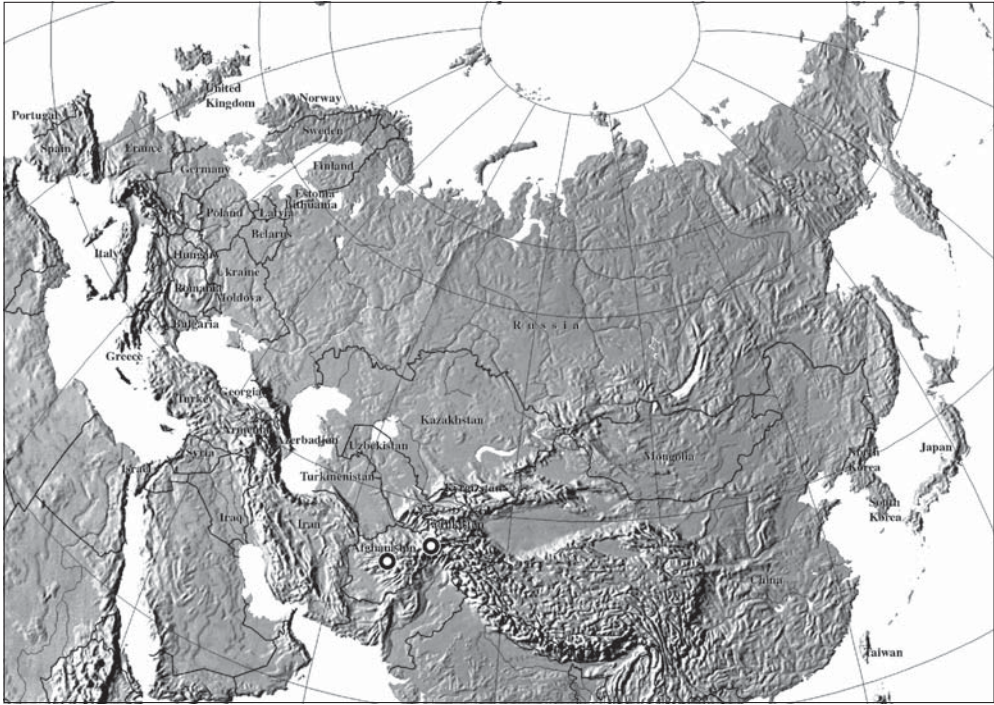


Figure 43. *Chaetocnema kabakovi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

Remarks: In the original description Lopatin (1995) mentioned that he recognized this species as new in the late 1970's. Lopatin suggested that it is similar to *C. aridula* and *C. confusa* and can be separated from the former by the wider and shorter body, deeper punctures, shiny dorsum and aedeagus shape. *Chaetocnema kabakovi* can be separated from *C. confusa* by the color of the body, finer punctures of the elytra and



Map 37. *Chaetocnema kabakovi*

unspecified secondary sex characters (Lopatin 1995). In our view *C. kabakovi* is more similar to the *C. hortensis* group than to *C. aridula* based on the coarse punctation of the pronotum, color of the appendages, and aedeagus shape. The main character to separate *C. kabakovi* from *C. hortensis* is the width of the denticle at the apex of the aedeagus. It is wide in *C. kabakovi* and narrow in *C. hortensis*. Illustration of the male genitalia in the original description (Lopatin 1995) misrepresents some important characters.

Type material: *Chaetocnema kabakovi*: Holotype male: 1) Afghanistan, 3200 m, Bamyan Safedab, O. Kabakov VIII.1971, 2) Holotypus, 3) *Chaetocnema kabakovi* sp. n., det. I. Lopatin, 1976 (1 ZMAS); Paratype 1) Afghanistan, 3200 m, Bamyan Safedab, O. Kabakov VIII.1971, 2) Paratypus, 3) *Chaetocnema kabakovi* sp. n., det. I. Lopatin, 1982 (1 USNM); Paratype male: 1) Afghanistan, 3200 m, Bamyan Safedab, O. Kabakov VIII.1971, 2) Paratypus, 3) *Chaetocnema kabakovi* sp. n., det. I. Lopatin, 1976 (1 USNM); Paratype male: 1) Afghanistan, 3200 m, Bamyan Safedab, O. Kabakov VIII.1971, 2) Paratypus, 3) *Chaetocnema kabakovi* sp. n., det. I. Lopatin, 1982 (1 USNM).

Material: AFGHANISTAN: 1) O. Afghan. 1952, J. Klapperich, 2) Hindukusch, Khinjantal, 3) Do-Schak, 2500 m, 26.IX, 3) *Chaetocnema kabakovi* Lopatin, det. A. S. Konstantinov, 2009 (2 USNM); 1) O. Afghan. 1952, J. Klapperich, 2) Hindukusch, Salangtal, 3) Walang, 2750 m, 15.XI (1 USNM); 1) O. Afghan. 1952, J. Klapperich, 2) Hindukusch,

Salangtal, 3) Walang, 2750 m, 15.XI, 3) *Chaetocnema kabakovi* Lopatin, det. A. S. Konstantinov, 2009 (1 USNM); 1) O. Afghan. 1952, J. Klapperich, 2) Hindukusch, Salangtal, 3) Walang, 2750 m, 15.XI, 3) *Chaetocnema* sp.?, det. A. S. Konstantinov, 2004, 4) blank gold label, 5) *Chaetocnema kabakovi* Lopatin, det. A. S. Konstantinov, 2009 (1 USNM).

Chaetocnema kanmiyai Kimoto

Fig. 44, Map 38

kanmiyai Kimoto 1974:148 (type locality: Japan, Kyushu, "Chôjubarû, Mt. Kujû, Oita Pref."; type depository: KUEC)

Distribution: Japan (Kyushu) (Kimoto 1974).

Host plants: unknown.

Description: Body length (excluding head) 2.10 mm; width 1.35 mm. Ratio of elytron length at suture to maximum width, 2.37. Ratio of pronotum width at base to length at middle, 1.80. Ratio of length of elytron at suture to length of pronotum at middle, 2.88. Ratio of width of both elytra at base to width of pronotum at base, 1.08. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31.

Elytron black, without metallic luster. Pronotum black, without metallic luster. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur light brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, straight to shallowly retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 3.16. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 3–5 punctures near eye.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present throughout. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 6–10 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

Length of metatibia to distance between denticle and metatibial apex 2.34. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse.

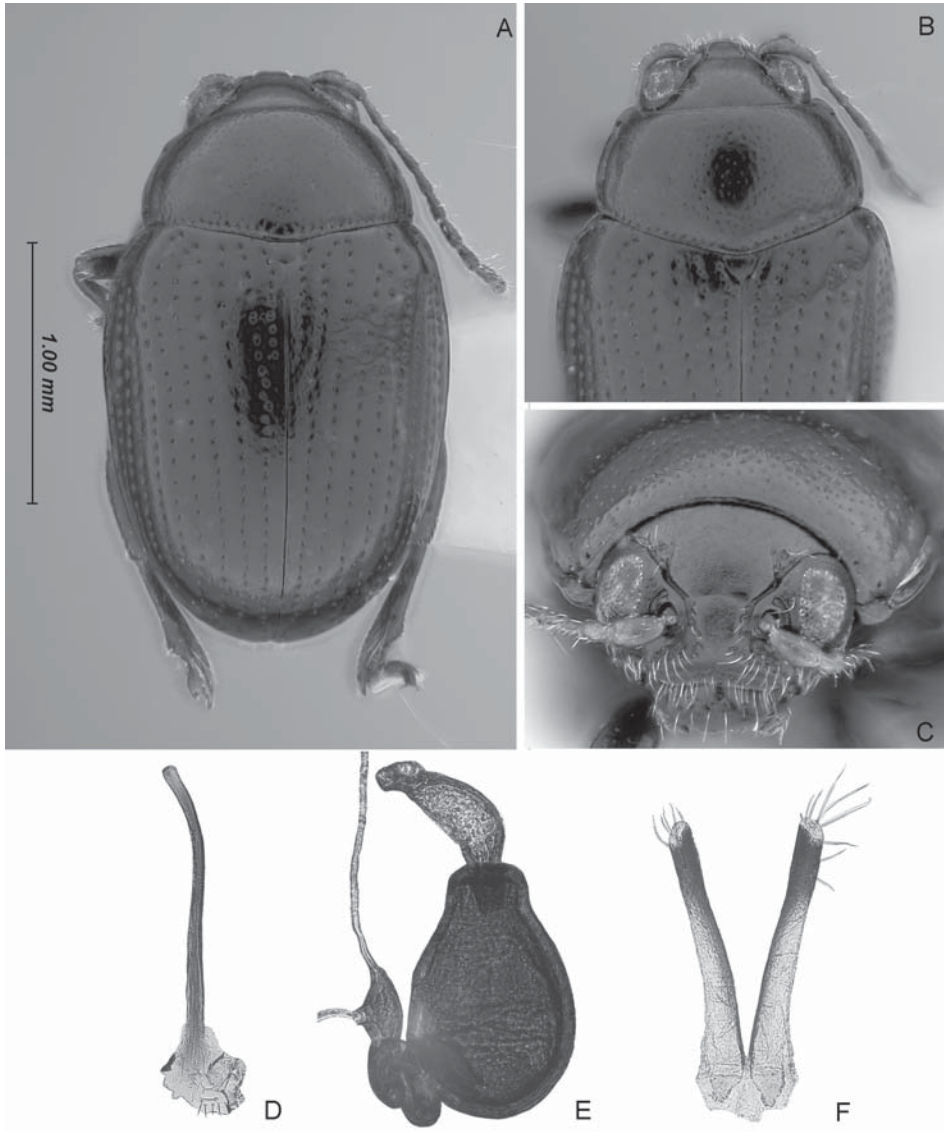
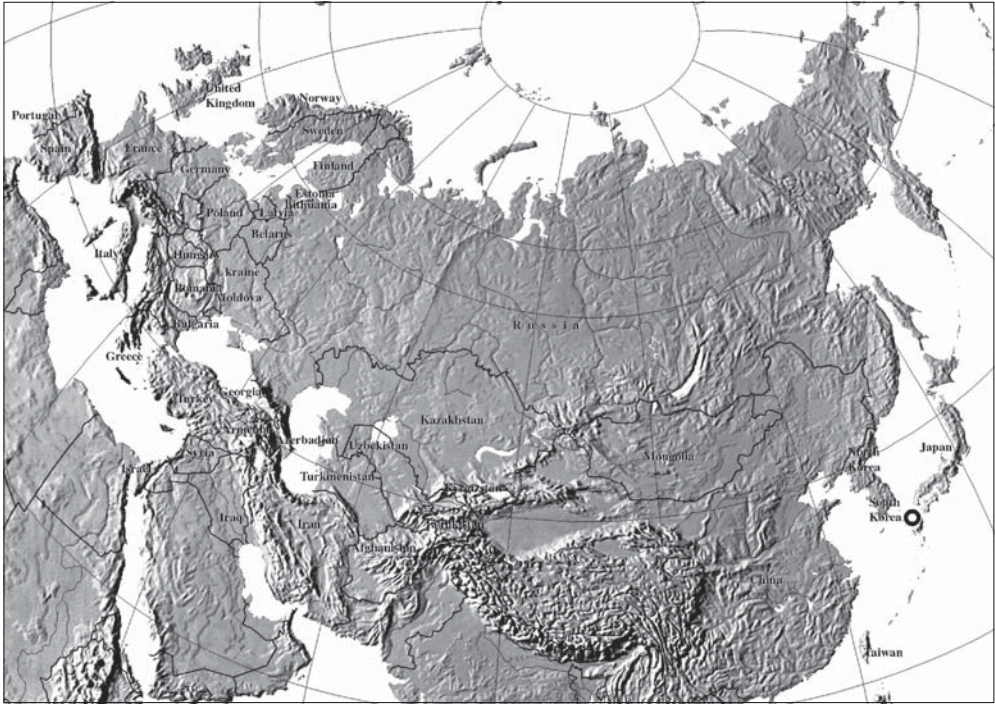


Figure 44. *Chaetocnema kanmiyai*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, tignum; E, spermatheca; F, vaginal palpi.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection or widening into amorphous sclerotization. Midsection of tignum strongly



Map 38. *Chaetocnema kanmiyai*

curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus amorphous. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema kanmiyai* shares with *C. basalis*, *C. conducta*, *C. schlaeflii*, and *C. septentrionalis* a deep row of large punctures at the base of the pronotum. It can be easily differentiated from *C. conducta* by the absence of yellow pattern on the elytra (elytra of *C. conducta* have a yellow pattern). *Chaetocnema kanmiyai* also differs greatly from *C. schlaeflii* by a variety of features among which the absence of the longitudinal wrinkles on the base of the pronotum (they are present in *C. schlaeflii*) is the most noticeable. From *C. basalis*, it can be separated by a completely different shape of the receptacle of the spermatheca. It is pear-shaped in *C. kanmiyai* and sinuate in *C. basalis*. It is more difficult to separate *C. kanmiyai* and *C. septentrionalis*, because we have only a female of *C. kanmiyai* and a male of *C. septentrionalis*, their genitalia can not be compared. *Chaetocnema kanmiyai* can be separated from *C. septentrionalis* based on the finer punctures on the pronotum (punctures are coarser

in *C. septentrionalis*) and the relatively wider frontal ridge (it is relatively narrower in *C. septentrionalis*).

Type material: *Chaetocnema kanmiyai*: Holotype female: 1) Type No 2021; 2) (Kyushu), Chojabaru, Oita, Japan, 26.VII.1969, K. Kanmiya; 3) Holotype; 4) *Chaetocnema* (*Tlanoma*) *kanmiyai* Kimoto, n. sp. (1 KUEC).

***Chaetocnema kimotoi* Gruev**

Fig. 45, Map 39

kimotoi Gruev 1980:35 (type locality: Korea, "Kum-gang san"; type depository: HNHM)

Distribution: Japan, Korea (Gruev 1980), Russia (Far East).

Host plants: unknown.

Description: Body length (excluding head) 1.72–2.13 mm; width 1.02–1.24 mm. Ratio of elytron length at suture to maximum width, 2.48–2.59. Ratio of pronotum width at base to length at middle, 1.58–1.62. Ratio of length of elytron at suture to length of pronotum at middle, 2.74–2.87. Ratio of width of both elytra at base to width of pronotum at base, 1.11–1.18. Ratio of maximum width of both elytra to maximum width of pronotum, 1.39–1.44.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–3 completely yellow. Antennomere 4 partly brown. Antennomere 5 completely brown. Protibia yellow or partly brown. Mesotibia yellow. Metatibia yellow or partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.17–1.23. Surface of vertex with 3–5 punctures near eye.

Base of pronotum with two short impressions visible only near basal margin. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.50–1.56. First and second male protarsomere length to length ratio, 1.98–2.03. First and second male protarsomeres

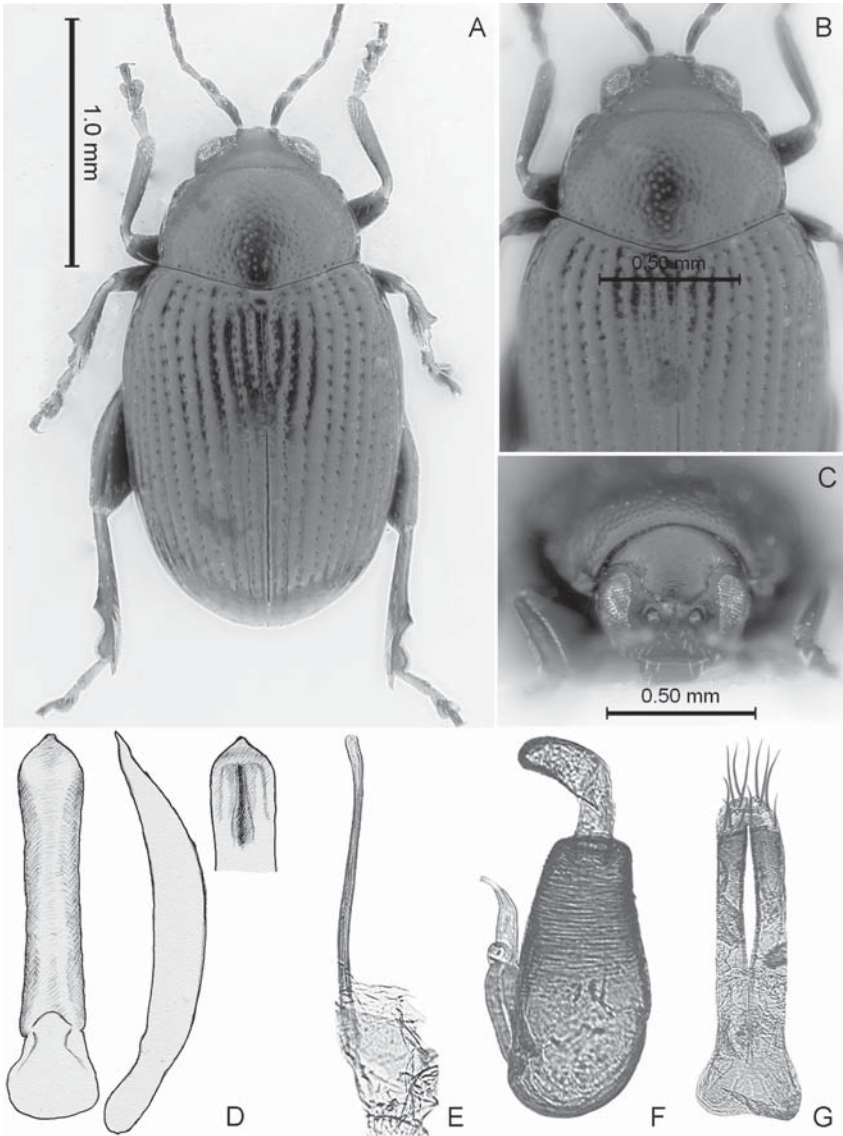
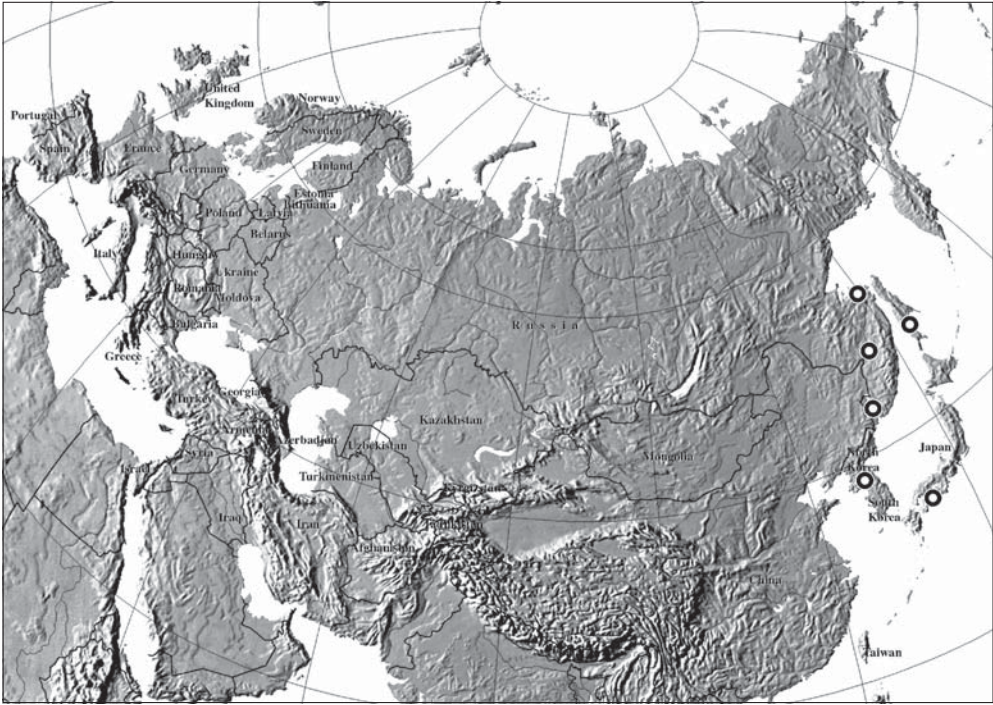


Figure 45. *Chaetocnema kimotoi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

width to width ratio, 1.50–1.56. Length of metatibia to distance between denticle and metatibial apex 1.72–1.76. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.88–2.97. First male protarsomere maximum width to width at base ratio, 2.08–2.13. First and



Map 39. *Chaetocnema kimotoi*

second male metatarsomere length to length ratio, 2.09–2.13. First and second male metatarsomere width to width ratio, 0.83–0.85. Third and fourth male metatarsomere length to length ratio, 1.50–1.55.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus absent. Ventral longitudinal groove in middle of aedeagus absent; poorly developed with obtuse margins in basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization

of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema kimotoi* is similar to *C. bicolorata*. Both species can be separated from each other by the following characters: pronotum and elytron blueish (in *C. bicolorata* the pronotum is bronzish and the elytron is black without a metallic luster); basal antennomeres and legs of *C. kimotoi* are darker than those of *C. bicolorata*; suprafrontal sulcus is deep laterally and shallow in the middle (deep laterally, but absent in middle in *C. bicolorata*); ventral side of the aedeagus flattened or slightly concave before apex, apex flat or slightly impressed (in *C. bicolorata* the ventral side of the aedeagus is convex before apex and apex with a relatively deep, wide impression). Both *C. kimotoi* and *C. bicolorata* are similar to *C. concinna* and *C. picipes* (the latter also occurs in the Far East), but they can be easily separated using the key.

Type material: *Chaetocnema kimotoi*: Paratype female: 1) Korea, Kum-gang san, 3-4 km S, Hotel Kum-gang, 12.VII.1977, 2) No. 363 - netting in grasses, Dely & Draskovits, 3) Paratype (1 USNM); Paratype female: 1) Korea, Sa Gam. 30-40 km N Pyongyang environs water-basin, 24.VII.1977, 2) No. 384 - netting in grasses, Dely & Draskovits, 3) Paratype, 4) *Chaetocnema kimotoi* m., det. B. Gruev (1 USNM); Paratype. 1) Korea, Kum-gang san, 3-4 km S, Hotel Kum-gang, 12.VII.1977, 2) No. 363 - netting in grasses, Dely & Draskovits, 3) Paratype (1 USNM).

Material: JAPAN: 1) Japan-Shikoko, Tokushima-Ken, Naruto-shi-Muya, sho-1.X.948, Coll. Chujó, 2) F. Monrós Collection, 1959, 3) *Chaetocnema discreta* Baly, M. Chûjô det. 950, 4) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (2 USNM); RUSSIA: 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenashka, 24.VIII.1992, A. S. Konstantinov (1 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kondratenovka, 21.VIII.1992, A. S. Konstantinov (52 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kondratenovka, 23.VIII.1992, A. S. Konstantinov (19 USNM); 1) Russia: Saghalin Island, Chekhov, 7.VIII.1992, A. S. Konstantinov (4 USNM); 1) South Saghalin, pos. Kuznetsovo, 10.IX.49, V. Stepanov, 2) *Chaetocnema kimotoi* Gruev, Konstantinov A. det. 2009 (2 USNM); 1) Ussurijski r-on, 27-7-1985, Pisanenko, 2) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (1 USNM); 1) Habarovsk obl., d. Bychikha, 8-12.08.1990, Shiras A. B., 2) ?, 3) *Chaetocnema granulosa* Baly, det. I. Lopatin, 1994, 4) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (1 USNM); 1) Nikolaevsk-na-Amure, 18.7.90, Lukashuk A., 2) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (1 USNM); 1) Primor'e, 21.8.92, Ussurijski zap. Konstantinov, 2) *Ch. granulosa* Baly, det. A. Konstantinov, 3) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (2 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk

Reserve d. Kamenushka, 22.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (2 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kondratenovka, 25.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema kimotoi* Gruev, det. A. S. Konstantinov, 2009 (15 USNM); 1) South Saghalin, pos. Kuznetsovo, 14.IX.49, V. Stepanov, 2) *discreta*, [reverse side of label] *Chaetocnema bicolor* sp.n. m., typ., I. Lopatin det. 3) *Chaetocnema kimotoi* Gruev, Konstantinov A. det. 2009 (2 USNM).

***Chaetocnema klapperichi* Lopatin**

Fig. 46, Map 40

klapperichi Lopatin 1963:370 (type locality: Afghanistan, "Kunartal, Jalalabad"; type depository: HNHM)

Distribution: Afghanistan (Lopatin 1963; Gruev 1988a).

Host plants: unknown.

Description: Body length (excluding head) 2.06–2.13 mm; width 1.22–1.35 mm. Ratio of elytron length at suture to maximum width, 2.15–2.18. Ratio of pronotum width at base to length at middle, 1.42–1.53. Ratio of length of elytron at suture to length of pronotum at middle, 2.59–2.66. Ratio of width of both elytra at base to width of pronotum at base, 1.14–1.16. Ratio of maximum width of both elytra to maximum width of pronotum, 1.46–1.56.

Elytron copperish without yellow. Pronotum copperish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.00–2.03. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

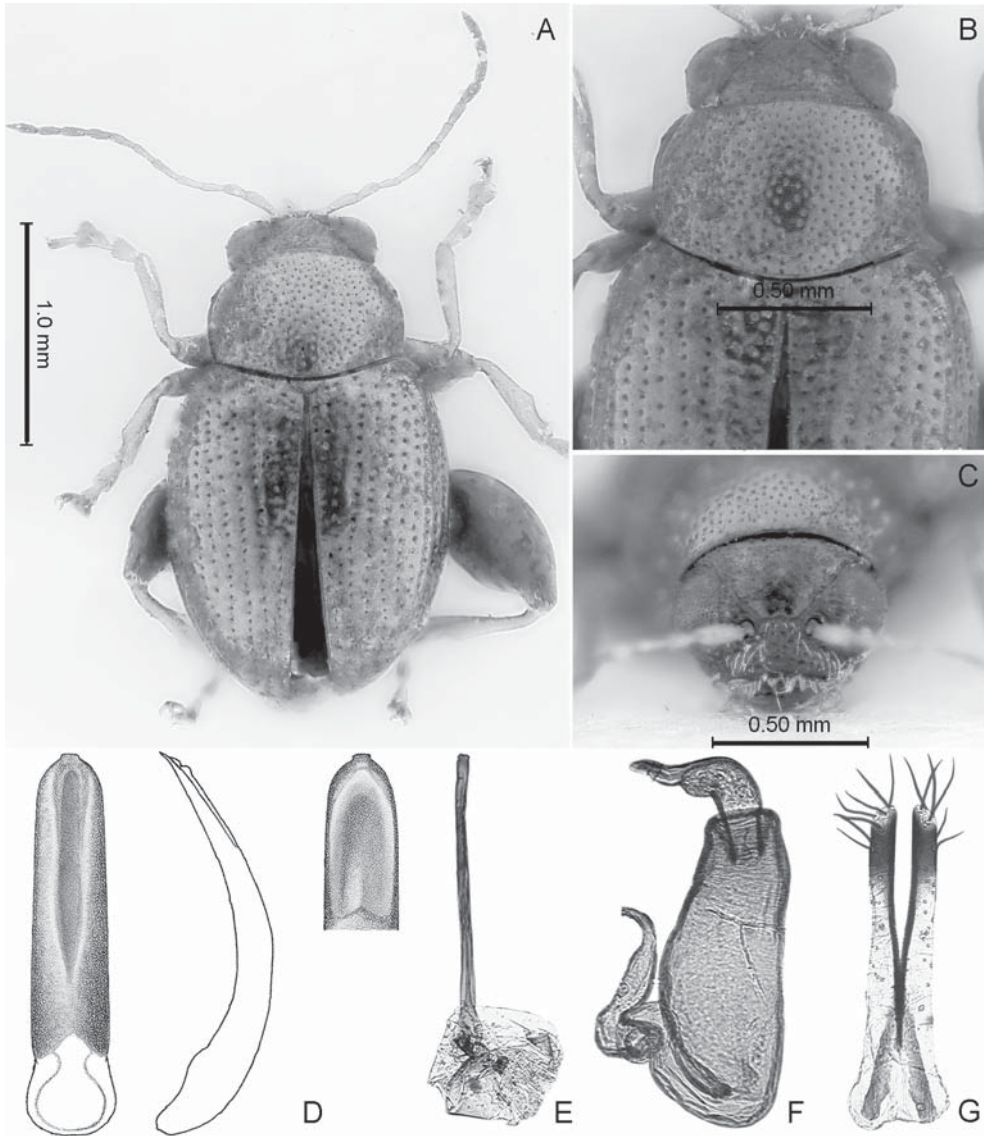
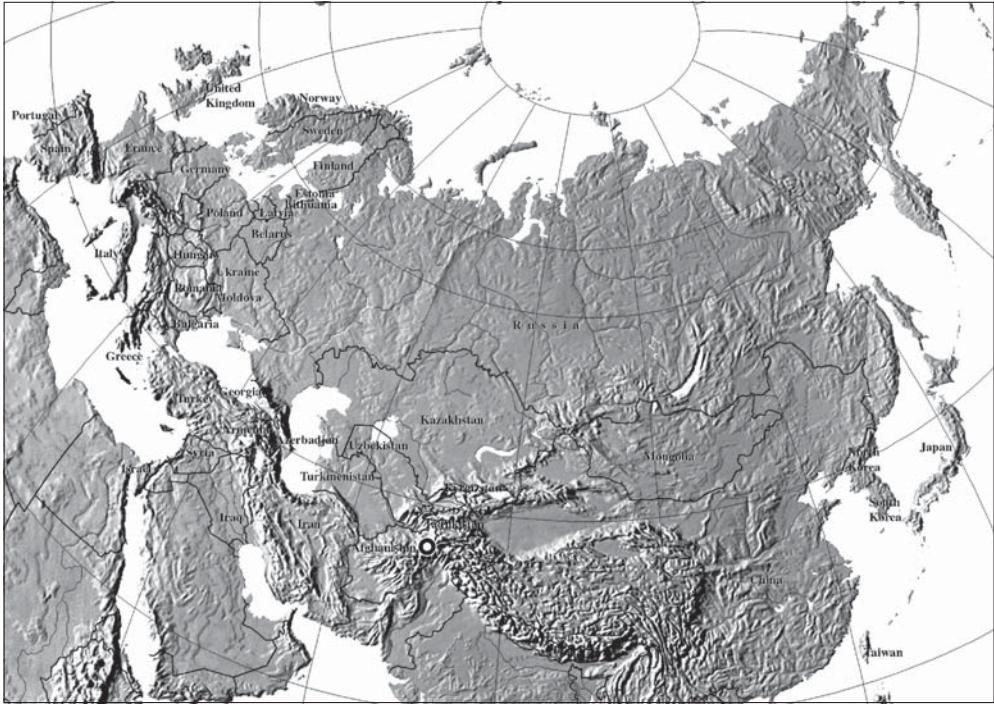


Figure 46. *Chaetocnema klapperichi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

First male protarsomere length to width ratio, 1.41–1.43. First and second male protarsomere length to length ratio, 1.30–1.33. First and second male protarsomeres width to width ratio, 1.14–1.16. Length of metatibia to distance between denticle and metatibial apex 2.52–2.56. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex



Map 40. *Chaetocnema klapperichi*

in dorsal view. First male metatarsomere length to width ratio, 2.00–2.03. First male protarsomere maximum width to width at base ratio, 1.94–1.99. First and second male metatarsomere length to length ratio, 1.17–1.19. First and second male metatarsomere width to width ratio, 1.11–1.13. Third and fourth male metatarsomere length to length ratio, 2.00–2.04.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; absent in basal half. Middle part of longitudinal groove as wide as apical; subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, short, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of

receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization nearly flat. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: Without the holotype, we based our concept of *C. klapperichi* on the original description and illustration of the aedeagus of the holotype (Lopatin 1963). It can be relatively easily separated from most Palearctic species based on the aedeagus with the ventral groove well-developed apically and completely absent basally. *Chaetocnema klapperichi* can also be separated by the unusually narrow protarsomere in males. Two paratypes, a male and female from four at the USNM, are not conspecific with each other and with *C. klapperichi*, and we have described the male under the name *C. eastafghanica*.

Type material: *Chaetocnema klapperichi*: Paratype male: 1) O. Afghan. 1953, J. Klapperich, 2) Kunartal, 500 m, Jalalabad, 30.III., 3) *Chaetocnema klapperichi* m., I. Lopatin det., 1961, 4) blank red label (1 USNM); Paratype: 1) O. Afghan. 1953, J. Klapperich, 2) Kunartal, 500 m, Jalalabad, 30.III., 3) *Chaetocnema klapperichi* m., I. Lopatin det., 1961, 4) Paratypus (1 USNM).

Chaetocnema koreana Chûjô

Fig. 47, Map 41

koreana Chûjô 1942:33 (type locality: Korea, "Mt. Bazi-San, Kankyo-Hokudo"; type depository: TAIT)

Distribution: China (Gruev 1981), Japan (Chûjô & Kimoto 1961), North Korea (Gruev 1990c).

Host plants: unknown.

Description: Body length (excluding head) 2.05–2.27 mm; width 1.20–1.29 mm. Ratio of elytron length at suture to maximum width, 2.63–2.78. Ratio of pronotum width at base to length at middle, 1.62–1.72. Ratio of length of elytron at suture to length of pronotum at middle, 2.88–3.16. Ratio of width of both elytra at base to width of pronotum at base, 1.12–1.14. Ratio of maximum width of both elytra to maximum width of pronotum, 1.33–1.38.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5

partly brown. Pro-, meso-, metatibia yellow or partly brown. Pro-, mesofemur light brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.09–1.15. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 8–10 or 3–5 punctures near eye.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.23–1.26. First and second male protarsomere length to length ratio, 1.48–1.52. First and second male protarsomeres width to width ratio, 1.18–1.23. Length of metatibia to distance between denticle and metatibial apex 2.18–2.23. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.48–2.56. First male protarsomere maximum width to width at base ratio, 1.69–1.73. First and second male metatarsomere length to length ratio, 1.50–1.55. First and second male metatarsomere width to width ratio, 0.98–1.06. Third and fourth male metatarsomere length to length ratio, 1.79–1.82.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus absent; poorly developed with obtuse margins in basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; present apically, but narrower than those on basal part. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle

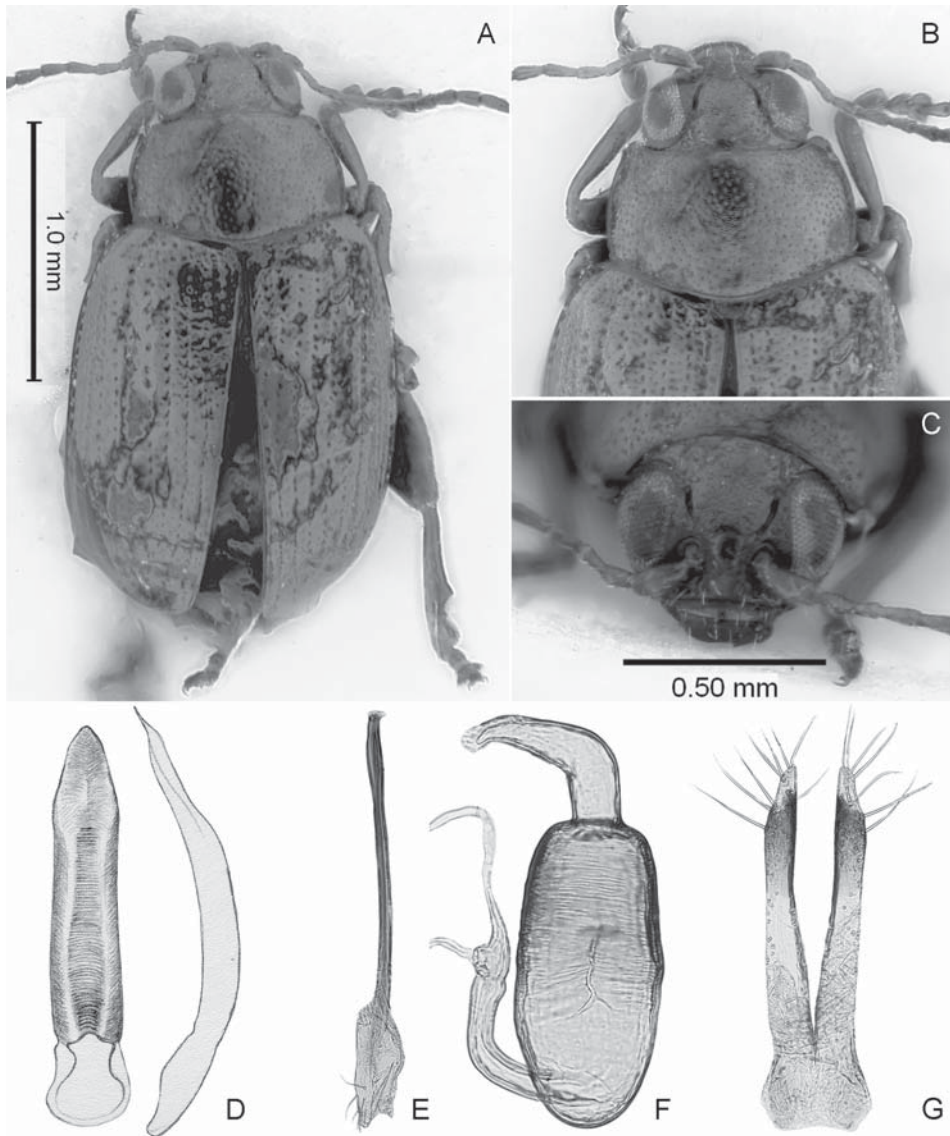
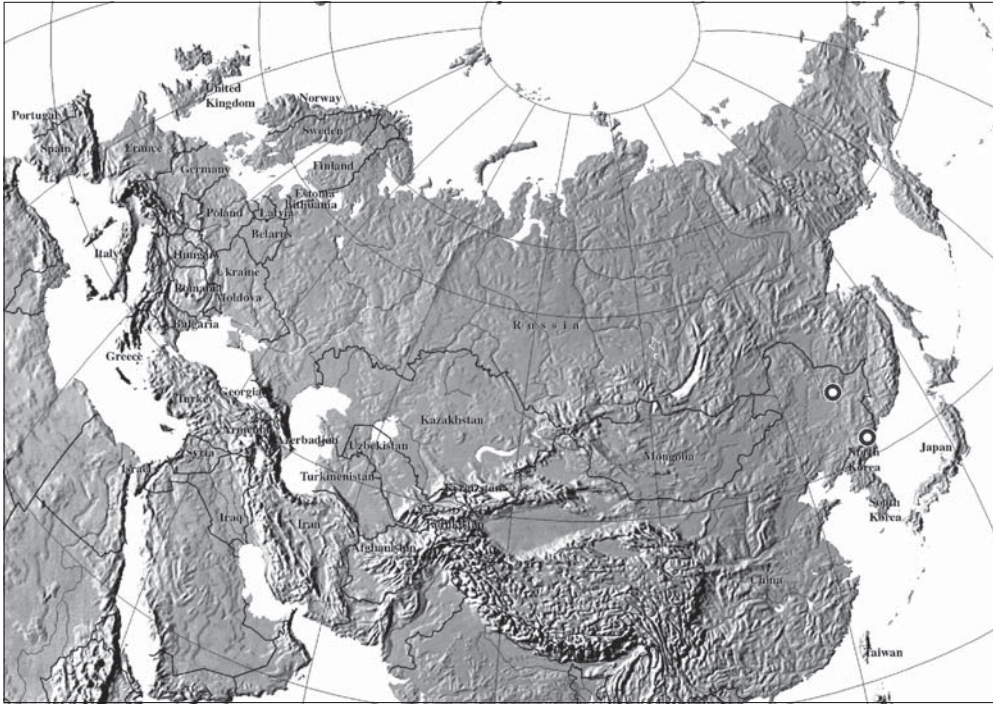


Figure 47. *Chaetocnema koreana*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from



Map 41. *Chaetocnema koreana*

base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: The history of the understanding of this species is full of confusion. Gruev & Döberl (1997) cited *C. septentrionalis* Kimoto 1965 as a synonym of *C. koreana* and also treated *C. septentrionalis* Kimoto 1963 as a separate species. It probably means that Kimoto (1965) mistakenly identified *C. koreana* as *C. septentrionalis*, which is a bit strange taking into account that Kimoto described *C. septentrionalis* in 1963, just two years before. Kimoto's treatment of *C. koreana* is also controversial. In 1965 he illustrated the genitalia of *C. koreana* which look very similar to those of *C. granulosa*. In Kimoto & Takizawa (1994) the same illustrations are attributed to *C. bicolorata*, which is another Kimoto species described in 1971. The same paper (Kimoto 1971) explains that Kimoto's treatments of *C. koreana* in 1963 and 1965 were both erroneous and points out that the material previously identified as *C. koreana* is the type material for *C. bicolorata*.

Although *C. koreana* and *C. septentrionalis* are undoubtedly close to each other, we found some differences between them: suprafrontal sulcus deep laterally, shallow in middle (in *C. septentrionalis* it is deep laterally, but absent in middle); deep row of large

punctures on base of pronotum present only on sides (present throughout in *C. septentrionalis*); pronotal base slightly expanded in middle (evenly convex in *C. septentrionalis*); apical denticle of aedeagus in lateral view slightly curved dorsally (straight in *C. septentrionalis*); and minute transverse wrinkles on apical part of ventral side of aedeagus narrower than those on base of aedeagus (wider than those on base of aedeagus in *C. septentrionalis*). Based on these characters we treat *C. septentrionalis* as a valid species.

Material: CHINA: 1) 3315 [BLUE fan-shaped label], 2) N. China, P. M. Hammond, B.M. 1967-215., 3) Heilungjiang, Harbin, 25.7.65, P. M. Hammond, 4) *Chaetocnema koreana* Chûjô, det. B. Gruev (1 BMNH); 1) Harbin, Heilungjiang, July 27, 1965, leg. P. M. Hammond (1 BMNH); NORTH KOREA: 1) Korea, Samdzijan, Jankang-do [Samjiyon, Yanggang-do], 5.IX.1989, M. Josifov, 2) *Chaetocnema koreana* Chûjô, det. B. Gruev (2 ZSMC); 1) Samdzijon Jankang-do [Samjiyon, Yanggang-do], 5.IX.1989, M. Josifov, 2) *Chaetocnema koreana*, Gruev det. (4 ZSMC).

Chaetocnema leonhardi Heikertinger

Fig. 48, Map 42

leonhardi Heikertinger 1951:195 (type locality: "Bosnien-Herzegowina: Bjetašnica planina"; type depository: NHMB, lectotype designated here)

Distribution: Bosnia and Herzegovina (Heikertinger 1951).

Host plants: unknown.

Description: Body length (excluding head) 1.89–2.04 mm; width 1.06–1.28 mm. Ratio of elytron length at suture to maximum width, 2.25–2.70. Ratio of pronotum width at base to length at middle, 1.34–1.50. Ratio of length of elytron at suture to length of pronotum at middle, 2.42–2.60. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.09. Ratio of maximum width of both elytra to maximum width of pronotum, 1.40–1.50.

Elytron greenish without yellow, rarely blueish without yellow. Pronotum greenish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight with notch in middle or emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.72–2.84. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered

with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus poorly developed.

First male protarsomere length to width ratio, 1.03–1.07. First and second male protarsomere length to length ratio, 1.49–1.52. First and second male protarsomeres width to width ratio, 1.45–1.49. Length of metatibia to distance between denticle and metatibial apex 2.35–2.39. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.32–1.34. First male protarsomere maximum width to width at base ratio, 3.32–3.35. First and second male metatarsomere length to length ratio, 1.33–1.36. First and second male metatarsomere width to width ratio, 1.37–1.40. Third and fourth male metatarsomere length to length ratio, 1.49–1.53.

Apical third of aedeagus narrowing. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; flat, horizontal at middle; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed with sharp margins in basal half. Apical part of longitudinal groove wider than basal; middle part as wide as basal and apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top or poorly differentiated; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present. Minute transverse wrinkles on apical part of ventral side of aedeagus absent. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus ensiform. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization about as great as width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema leonhardi* is similar to *C. nocticolor* by the shape of the ventral groove of the aedeagus, which widens gradually from the base to the apex and by the presence of transverse wrinkles at the base of the aedeagus. It can be easily separated

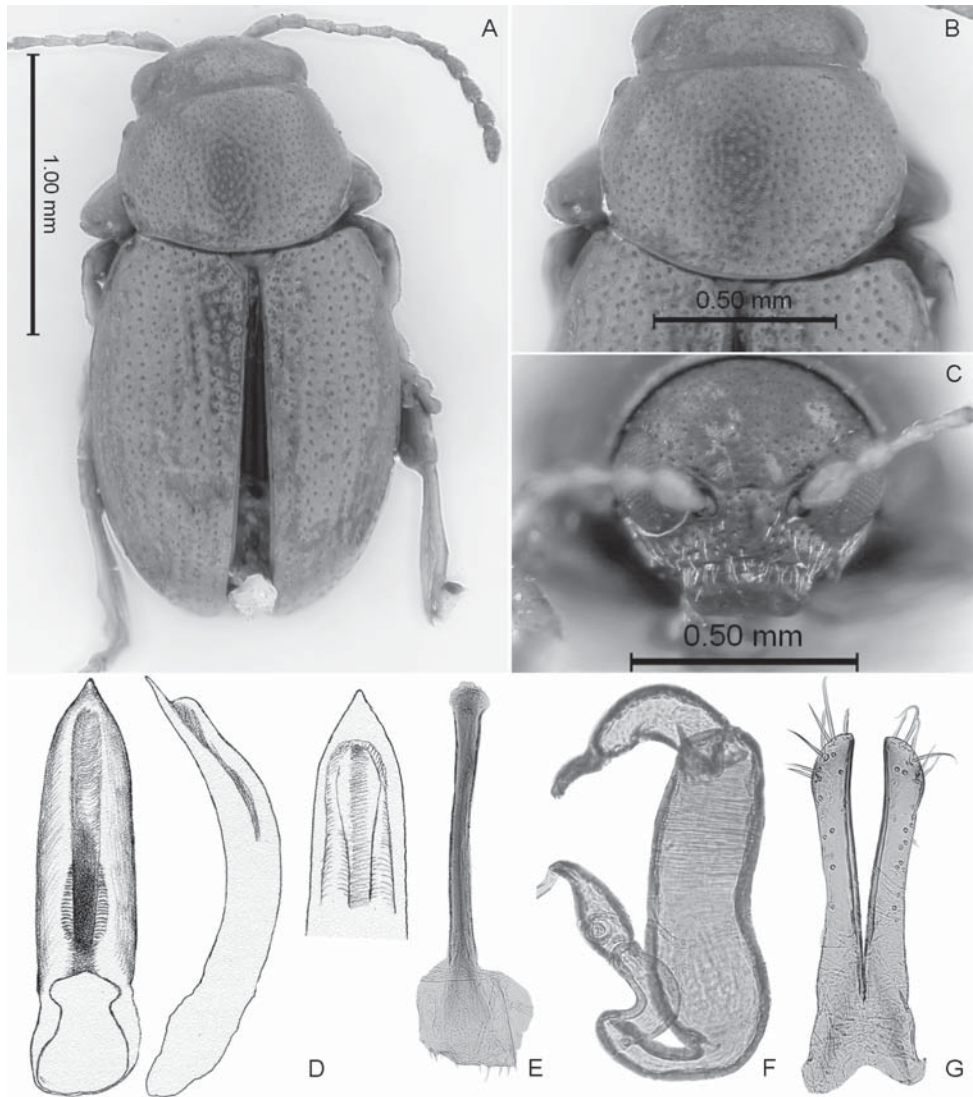
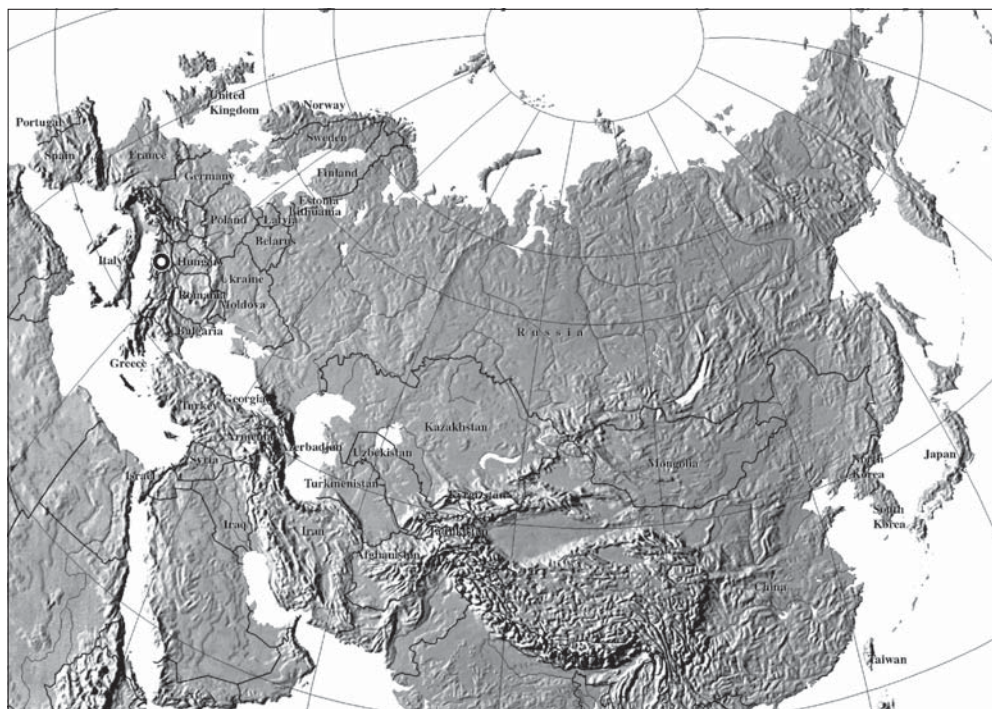


Figure 48. *Chaetocnema leonhardi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

from *C. nocticolor* by the apex shape of the aedeagus which is narrow in *C. leonhardi* and wide in *C. nocticolor*.

Type material: *Chaetocnema leonhardi*: Lectotype male: 1) Bosnia, Bjelašnica plan, O. Leonhard, 2) *Chaetocnema leonhardi* m., det. Heikertgr., Cotypus, 3) Cotypus, 4) [blank blue label], 5) 1953 Coll. Heikertinger, 5) Lectotype *Chaetocnema leonhardi* Heikertinger des. A.S. Konstantinov et al. 2009 (NHMB), Paralectotypes females: 1)



Map 42. *Chaetocnema leonhardi*

Bjelasnica, Bosnia, 2) *Chaetocnema Leonhardi* m., det. Heiktgr., Cotypus, 3) Cotypus, 4) 1953 Coll. Heikertinger, 5) Paralectotype *Chaetocnema leonhardi* Heikertinger des. A.S. Konstantinov et al. 2009 (2 NHMB); 1) Herzegovina, Bjelasnica 1902, O. Leonhard., 2) [blank blue label], 3) *Chaetocnema Leonhardi* m., det. Heiktgr., Cotypus, 3) Cotypus, 4) 1953 Coll. Heikertinger, 5) Paralectotype *Chaetocnema leonhardi* Heikertinger des. A.S. Konstantinov et al. 2009 (1 NHMB).

***Chaetocnema ljudmilae* Lopatin, status restored**

Fig. 49, Map 43

ljudmilae Lopatin 1961:145 (type locality: South Tajikistan, Parkhara region, “Khzil-su delta”; type depository: ZMAS)

Distribution: Kazakhstan, Kyrgyzstan, Russia, Tajikistan (Lopatin 1961, 1977b).

Host plants: unknown.

Description: Body length (excluding head) 2.17–2.70 mm; width 1.08–1.40 mm. Ratio of elytron length at suture to maximum width, 2.96–3.09. Ratio of pronotum width at base

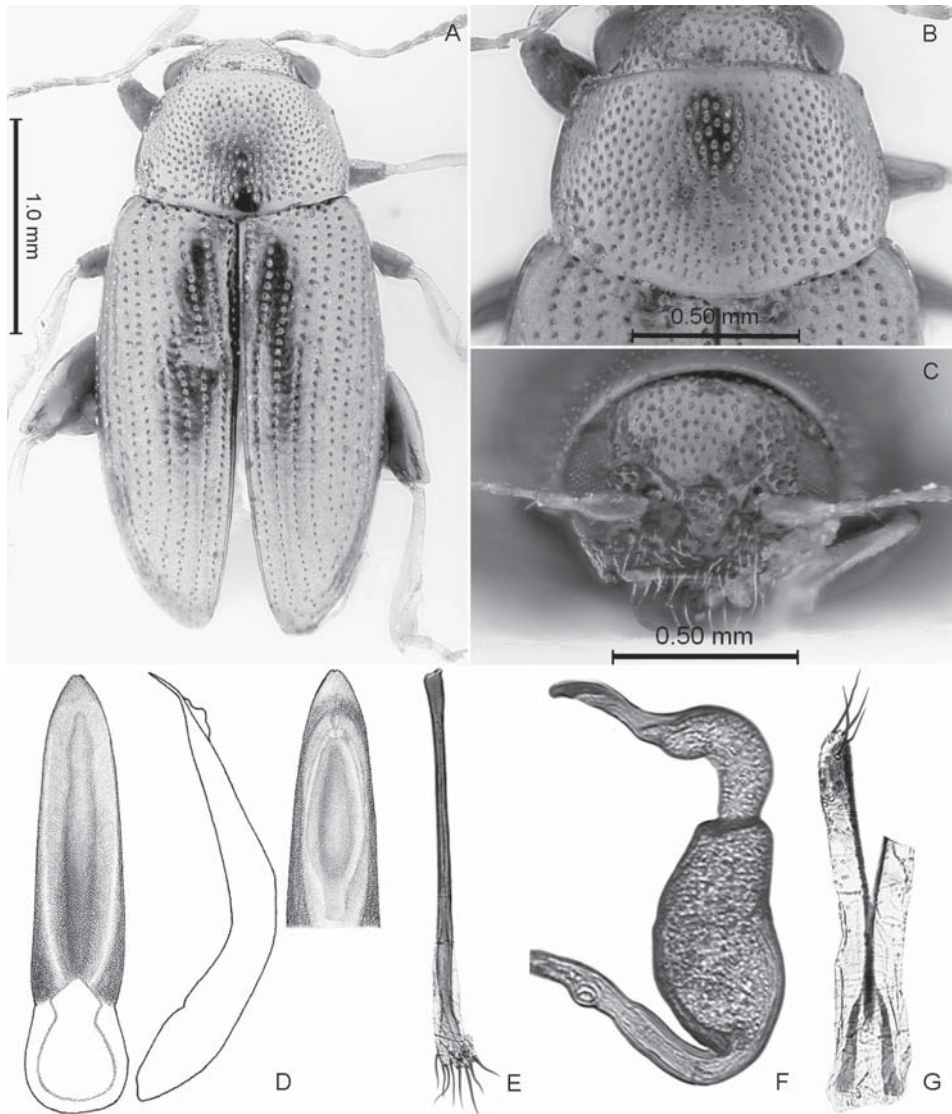
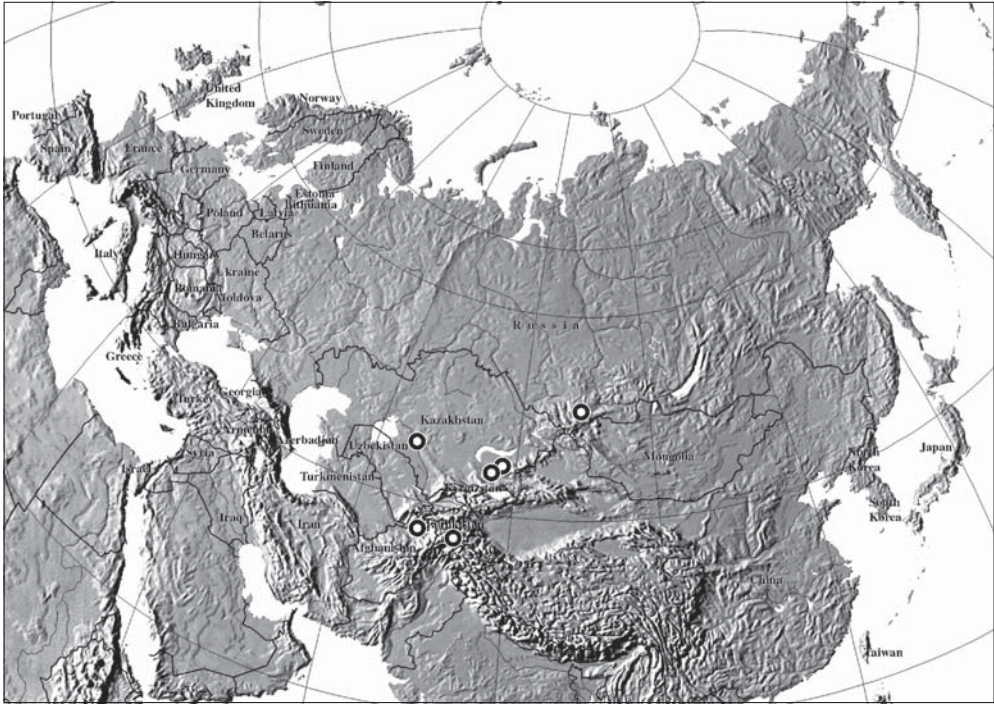


Figure 49. *Chaetocnema ljudmilae*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

to length at middle, 1.42–1.44. Ratio of length of elytron at suture to length of pronotum at middle, 2.58–2.78. Ratio of width of both elytra at base to width of pronotum at base, 1.08–1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.21–1.35.

Elytron bronzish without yellow, blueish without yellow or copperish without yellow. Pronotum bronzish, greenish, copperish, rarely blueish. Antennomere 1 partly dark brown, rarely completely yellow. Antennomere 2 partly dark brown. Antennomere 3–4 partly



Map 43. *Chaetocnema ljudmilae*

brown, rarely completely yellow. Antennomere 5 partly brown. Protibia partly brown, rarely yellow. Meso-, metatibia yellow, rarely partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.59–1.61. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.81–1.85. First and second male protarsomere length to length ratio, 1.56–1.62. First and second male protarsomeres width to width ratio, 1.18–1.22. Length of metatibia to distance between denticle and metatibial apex 2.82–2.86. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.73–2.78. First male protarsomere maximum width to width at base ratio, 2.00–2.07. First and second male metatarsomere length to length ratio, 1.81–1.86. First and second male metatarsomere width to width ratio, 1.15–1.19. Third and fourth male metatarsomere length to length ratio, 2.62–2.66.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins or absent; poorly developed, shallow, with obtuse margins in middle; poorly developed with obtuse margins in basal half. Apical part of longitudinal groove as wide as basal; middle part wider than basal and apical. Longitudinal groove in middle subequal to or wider than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; strongly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximal curvature situated basally.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum gradually narrowing, narrower than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema ljudmilae* was proposed as a species, but later treated as a subspecies of *C. splendens* (Lopatin 1977b). Based on the following characters we confirm its species status: the apex of the aedeagus narrows more gradually in *C. ljudmilae* than in *C. splendens* and the anterior sclerotization of the vaginal palpus is slightly widening anteriorly in *C. ljudmilae* and slightly narrowing in *C. splendens*.

Type material: *Chaetocnema ljudmilae*: Paratype male: 1) Delta river Vakhsh, Tigrovaya Balka, tugai, 27.IV.59, V. Mikhailov, 2) *Chaetocnema ljudmilae* m., I. Lopatin det. 1960, 3) [blank red label], 4) *Chaetocnema ljudmilae* Lop. No. 63 (1 USNM).

Material: KAZAKHSTAN: 1) Kzyl-Orda, 28 VI 1926, 2) K. Ruzaev (1 USNM); 1) 85 km Ushtobe, hr. Karatau, 15.VI.64, Kulenova (4 USNM); 1) E. Kazakhstan, Ush-

Aral, 10.7.94, Frolov, 2) *Chaet. splendens* *ljudmilae* Lop, det. I. K. Lopatin (1 USNM); 1) Kzyl-Orda, 12.V.37 (1 USNM); KYRGYZSTAN ? : 1) Centr. Tien-Shan, river Aksai, Chatyrtash, 17.VII.66, E. Gur'eva (1 ZMAS); RUSSIA: 1) Altai, Kosh-Agach, 14.6.89, Pisanenko (1 USNM); 1) env. Kosh-Agacha, Chuiskaya stepp, A. Emel'yanov 21 VII.09, 2) *splendens* Motsch., 3) *Chaetocnema splendens* Mtsch., I. Lopatin det., 1964 (1 ZMAS).

***Chaetocnema lubischevi*, new species**

Fig. 50, Map 44

Distribution: Azerbaijan, Iran, Kazakhstan.

Host plants: unknown.

Description: Body length (excluding head) 1.37–1.72 mm; width 0.83–1.08 mm. Ratio of elytron length at suture to maximum width, 2.81–2.85. Ratio of pronotum width at base to length at middle, 1.59–1.61. Ratio of length of elytron at suture to length of pronotum at middle, 2.92–3.00. Ratio of width of both elytra at base to width of pronotum at base, 1.09–1.11. Ratio of maximum width of both elytra to maximum width of pronotum, 1.46–1.52.

Elytron copperish without yellow, rarely bronzish without yellow. Pronotum copperish, rarely bronzish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.73–1.77. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 8–10 punctures near eye.

Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.81–1.84. First and second male protarsomere length to length ratio, 1.20–1.25. First and second male protarsomeres width to width ratio, 1.18–1.22. Length of metatibia to distance between denticle and metatibial apex 3.01–3.08. First male metatarsomere length to width ratio, 3.90–3.97. First male protarsomere maximum width to width at base ratio, 1.65–1.69. First and

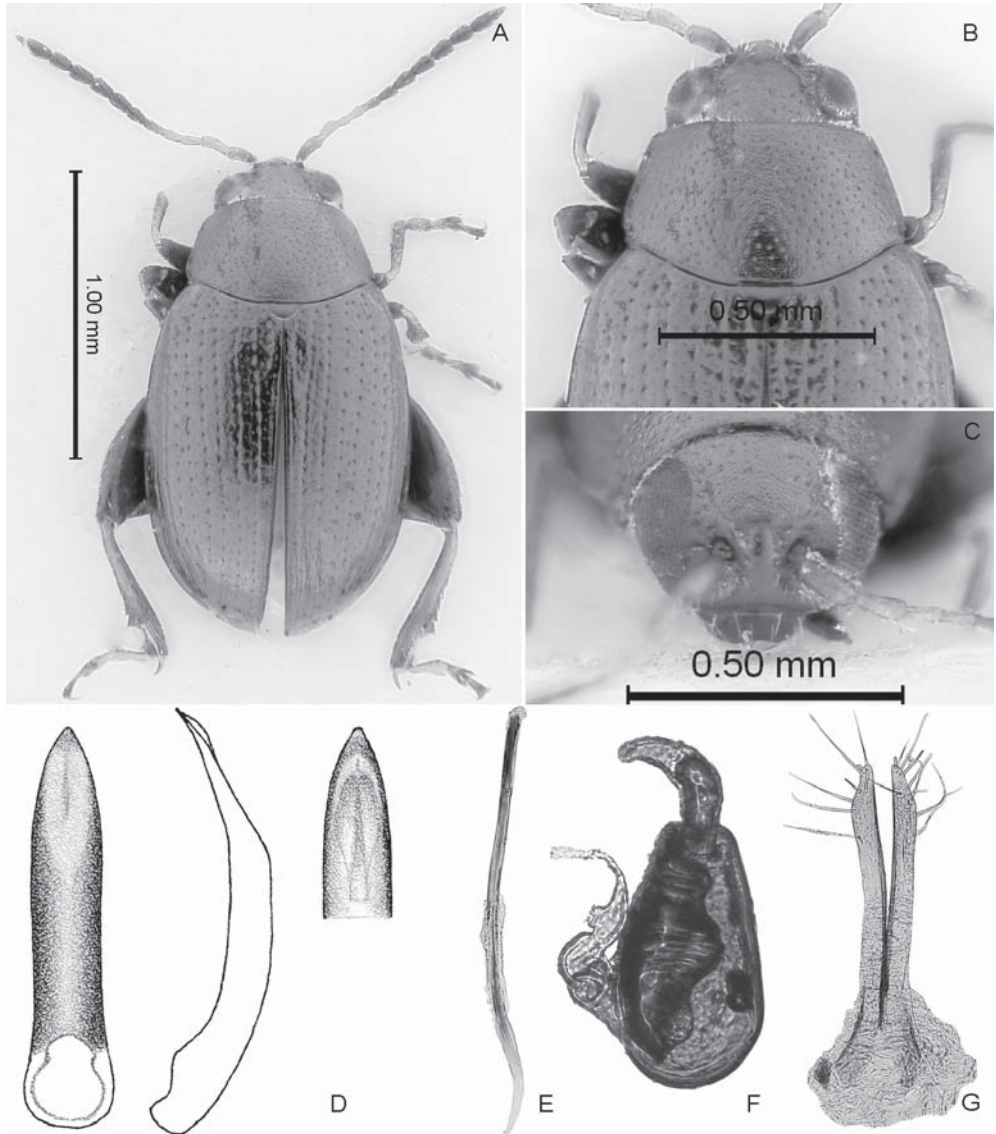
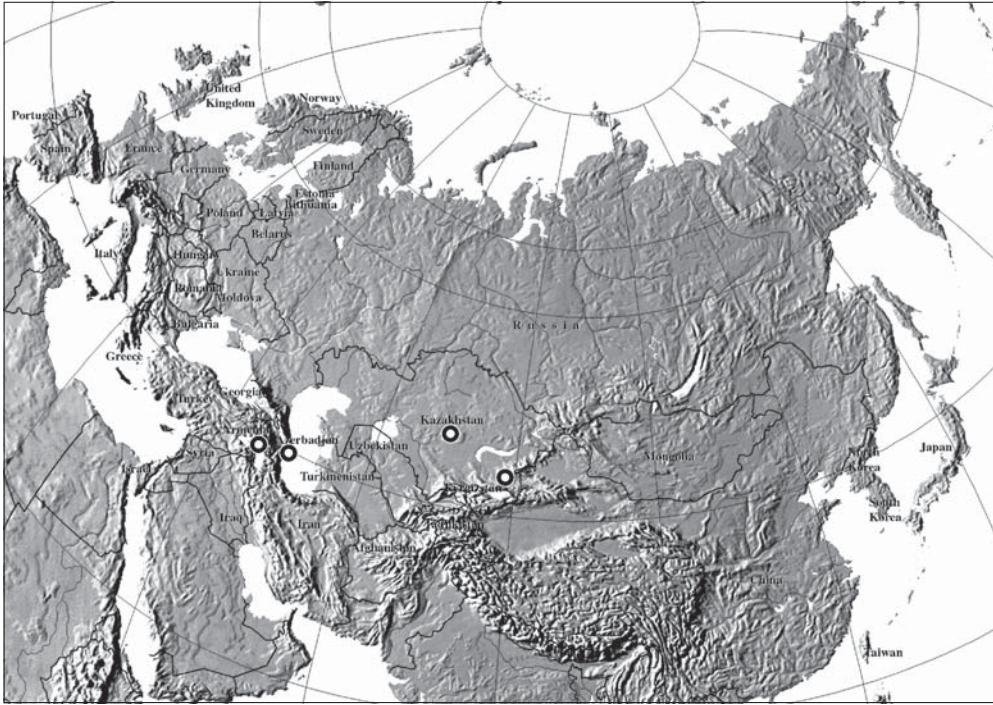


Figure 50. *Chaetocnema lubischevi*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

second male metatarsomere length to length ratio, 1.51–1.54. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 2.13–2.15.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view



Map 44. *Chaetocnema lubischevi*

narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins or absent; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated or absent; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum gradually narrowing, narrower than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema lubischevi* is similar to *C. breviuscula*, *C. delarouzei*, *C. scheffleri*, and *C. tibialis*. All these species can be best recognized by the shape of the aedeagus, proportions of the body and some small details of punctation of pronotum and elytra. In *C. lubischevi*, the aedeagus is much flatter apically than basally in lateral view, and its tip narrows gradually in ventral view and the ventral groove is lacking basally. In *C. breviuscula*, the aedeagus is generally cylindrical along its length with the apex abruptly cut in lateral view, with its tip directed straight forward (it is nearly as thick apically as basally in *C. tibialis* and sharply bent ventrally in lateral view with a relatively long and well recognized ventral impression; in *C. delarouzei* the aedeagus is very similar in lateral view, but its tip is oval, without a denticle in ventral view; in *C. scheffleri*, the ventral groove occupies the whole length of the aedeagus and the tip is bent ventrally).

Etymology: The name is a patronym dedicated to A. Lubishev, who collected part of the type series.

Type material: *Chaetocnema lubischevi*: Holotype male: 1) Azerbaijan, 50 km S. Baku Gobustan, 21.v.1986, A. S. Konstantinov, 2) Holotype *Chaetocnema lubischevi* des Konstantinov 2009. (1 USNM); Paratypes: AZERBAIJAN: Male. 1) Azerbaijan, 50 km S. Baku Gobustan, 21.v.1986, A. S. Konstantinov, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009 (12 USNM); Male: 1) Azerbaijan, 50 km S. Baku Gobustan, 21.v.1986, A. S. Konstantinov, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009 (2 ZMAS); IRAN: Male. 1) NW Iran, Maku, 19-2_ .6.1970, 2) Loc. no. 25, Exp. Nat. Mus. Praha, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009. (1 USNM); KAZAKHSTAN: Male. 1) 32. Dzezkazgan, Kazakhstan, 25.IX.1959, A. Lubishev, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009. (1 ZMAS); Male. 1) 33. Dzezkazgan, Kazakhstan, 26.IX.1959, A. Lubishev, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009. (1 USNM); Male. 1) 34. Dzezkazgan, Kazakhstan, 28.IX.1959, A. Lubishev, 2) Paratype *Chaetocnema lubischevi* des Konstantinov 2009. (2 ZMAS); Male. 1) Sugatinski Valley, (Alma Ata), Kazakstan, SSR., 2) VII/17/(1), 1095 1965, 3) Resting on, 4) Halogeton glomeratus Bieb., 5) L. Andres Coll., 6) Paratype *Chaetocnema lubischevi* des Konstantinov 2009. (1 USNM).

***Chaetocnema major* (Jacquelin du Val)**

Fig. 51, Map 45

major Jacquelin du Val 1852:717 (type locality: South France, "Montpellier"; type depository: MNHN; lectotype designated by Doguet 1989:191), as *Plectroscelis*
perrisii Bauduér 1874:clxi (type locality: France, "Saint-Jean-d'Acres"; type depository: MNMH); as *Plectroscelis*; Heikertinger 1951:210 (as a subspecies)

Distribution: Afghanistan, Albania (Gruev 1992), Armenia, Austria (Döberl 1994), Azerbaijan (Lopatin 1977b), Bulgaria (Gruev & Tomov 1986), Cyprus (Gruev & Döberl 1997), Czech Republic (Čížek 2006), France (Doguet 1994), Greece (Mohr 1965,

Gruev 1990a), Hungary, Iran (Rapilly 1978), Iraq (Gruev 1995b), Israel (Furth 1985), Kazakhstan (Lopatin 1977b), Moldova (Lopatin 1977b), Romania (Gruev et al. 1993), Russia (Volga Valley, Saratov, Caucasus) (Konstantinov 1988), Serbia (Gruev 1992), Slovakia (Gruev & Döberl 1997), Spain (Doguet et al. 1996), Syria, Turkey (Medvedev 1970), Ukraine.

Host plants: *Scirpus maritimus*, *Carex vulpina*, *Typha* sp. (Nonveiller 1978); *Calamagrostis epigeios* (Tölg 1938); *Carex divisa*, *Cyperus* sp., *Scirpus* sp. (Furth 1985).

Description: Body length (excluding head) 2.71–3.79 mm; width 1.45–1.92 mm. Ratio of elytron length at suture to maximum width, 2.61–2.69. Ratio of pronotum width at base to length at middle, 1.74–1.78. Ratio of length of elytron at suture to length of pronotum at middle, 3.25–3.27. Ratio of width of both elytra at base to width of pronotum at base, 1.04–1.08. Ratio of maximum width of both elytra to maximum width of pronotum, 1.22–1.26.

Elytron blueish without yellow, rarely bronzy without yellow or greenish without yellow. Pronotum blueish, rarely bronzy or greenish. Antennomere 1–4 partly dark brown, rarely completely yellow. Antennomere 5 completely brown, rarely partly brown. Pro-, meso-, metatibia partly brown, rarely yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus wide and deep with vertical walls, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.00–1.07. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Scutellar row of punctures on elytron regular and single, rarely confused or more than one. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.00–1.08. First and second male protarsomere length to length ratio, 1.16–1.27. First and second male protarsomeres width to width ratio, 1.09–1.16. Length of metatibia to distance between denticle and metatibial apex 2.52–2.67. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 3.50–3.55. First male protarsomere maximum width to width at base ratio, 2.21–2.27. First and

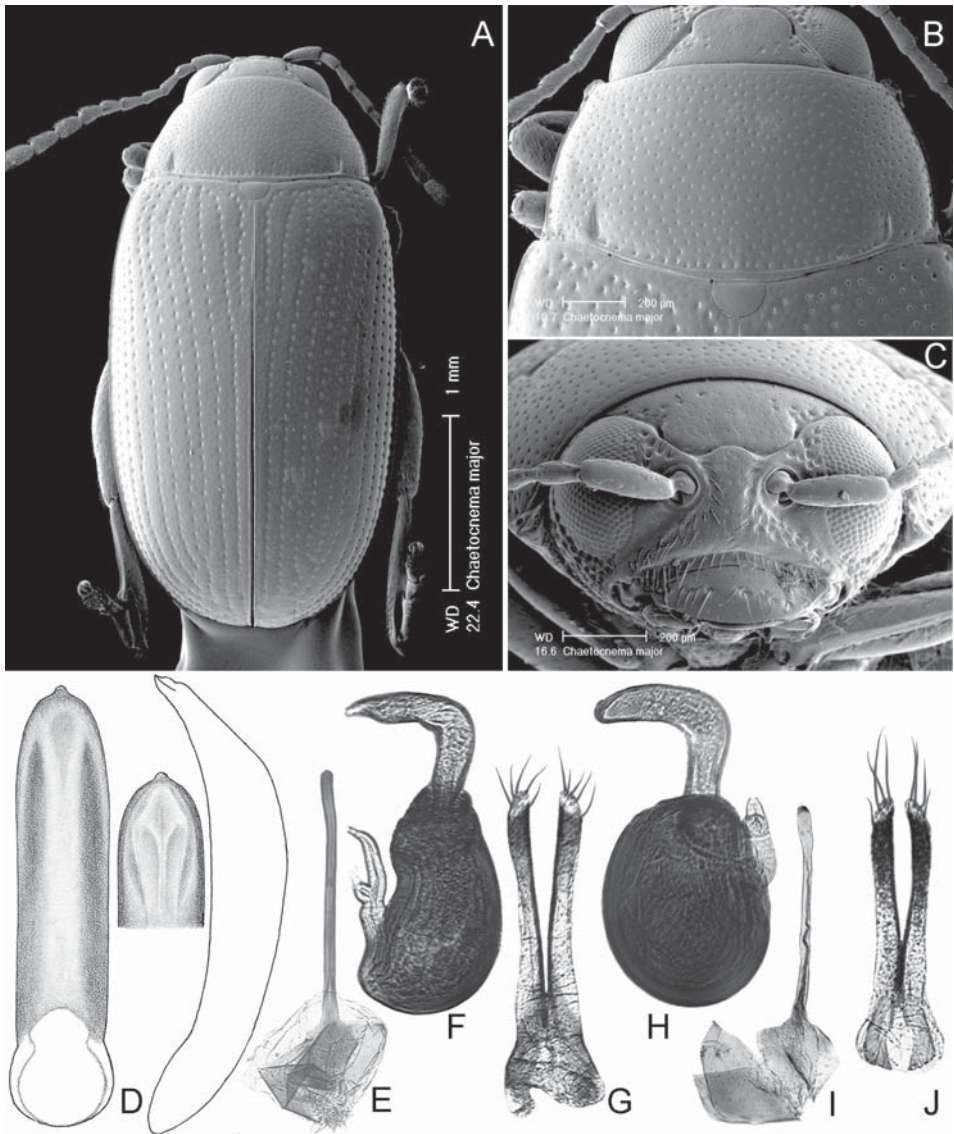
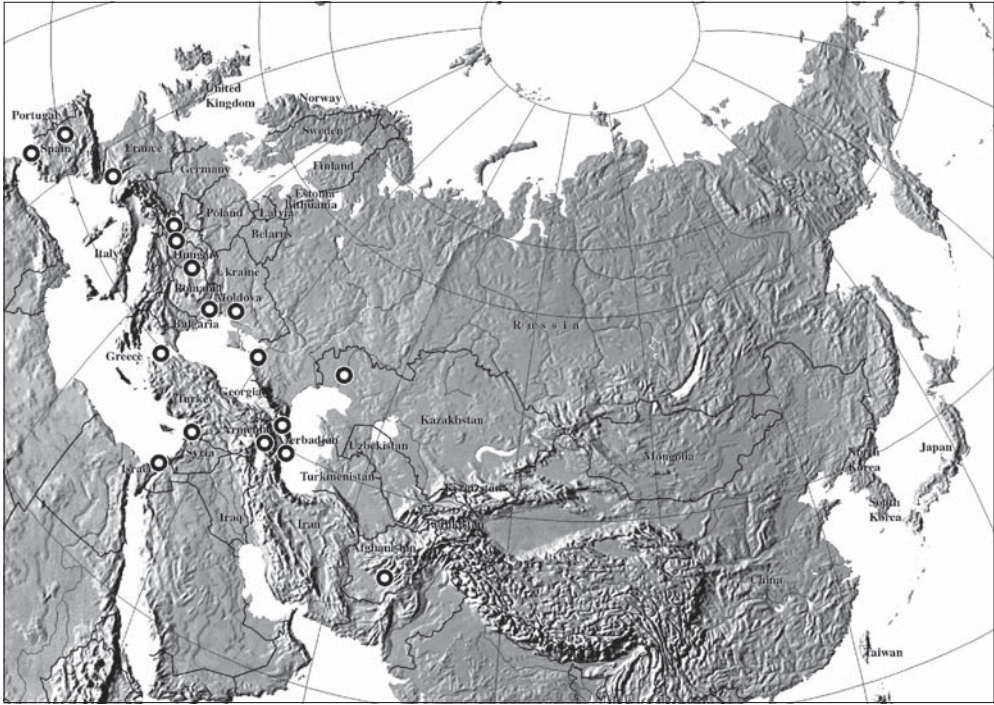


Figure 51. *Chaetocnema major*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, I, tignum; F, H, spermatheca; G, J, vaginal palpi.

second male metatarsomere length to length ratio, 1.76–1.87. First and second male metatarsomere width to width ratio, 1.00–1.03. Third and fourth male metatarsomere length to length ratio, 1.66–1.72.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view



Map 45. *Chaetocnema major*

narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically and medially convex. Ventral longitudinal groove absent from aedeagus. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; strongly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded or subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or smaller.

Remarks: *Chaetocnema major* is morphologically unusual among Palearctic *Chaetocnema*, although it undoubtedly belongs to this genus. It can be separated from the other species based on the following characters: upper-median edge of metatibia with same denticle as on upper-lateral edge; aedeagus with lateral longitudinal grooves along apical part, and with very long internal flange (sometimes exceeding aedeagal apex in length).

Type material: *Chaetocnema major*: Lectotype male: 1) small green label; 2) Museum Paris 1862 Jacquelin du Val; 3) Lectotype *Chaetocnema major* Jacq. des. S. Doguet 1989; 4) *G. Plectroscelis major* J. d. V. (MNHN). Paralectotype M. 1) small green label; 2) Museum Paris 1862 Jacquelin du Val; 3) Paralectotype *Chaetocnema major* Jacq. S. Doguet des. 1989. (MNHN).

Material: AFGHANISTAN: 1) Dzheandar, 2) *Chaetocnema major* Duv., I. K. Lopatin det. 1975 (1 USNM); ARMENIA: 1) Armenia: 8 km E. Areni 28.V.1999, valley, leg. A. Konstantinov (1 USNM); 1) Armenia: Zangezur mountains, 1500-1900 m, vil. Khashab 27.V.1999, 39°51'65"N 44°56'26E, leg. A. Konstantinov, 2) *Chaetocnema major* (Jac. duVal), A. Baselga 2009 (6 USNM); AUSTRIA?: 1) Bgld, Podersdorf, July 7, 1993, leg. M. Bergeal (1 BCPF); AZERBAIJAN: 1) Azerb. SSR, Lerik, 9.V.86, swamp, Konstantinov A., 2) *Chaetocnema major* (Jaquelin du Val), det. A. S. Konstantinov, 2004 (1 USNM); 1) E. Transcaucasia, El'dar, 1.V.35, A. Bogachev (2 USNM); FRANCE: 1) Gard, Aigues-Mortes, April 22, 1957, leg. G. Tempere (2 BCPF); 1) La Garde (Mol. de Boissy), leg. Mol. de Boissy (3 BCPF); HUNGARY: 1) Hortobagy N.P. Hortobagy-Mata, Kungyorgy fuhalozas, 1974.VI.24. leg. Mahunka, 2) *Chaetocnema major*, Gruev det. (1 ZSMC); 1) Hungaria bor. Marmaros, 2) *Chaetocnema major*, Heikertinger det. (2 NHMW); 1) Kiskunsagi N.P. Lakitelek Toserdo, turjanos fuhalozas, 1977.V.11. leg. Hamori, 2) *Chaetocnema major*, Gruev det. (7 ZSMC); ISRAEL: 1) Coastal plain Ga'ash, 3.IV.1978, leg. D. G. Furth, 2) *Chaetocnema major perrisi* Baud., Furth det. (1 ZSMC); KAZAKHSTAN: 1) Ispul, fl. ural, 9.VI.930, D. Ogloblin, 2) *Phragmites* [illegible], 3) *Ch. major*, det. Konstantinov (1 USNM); MOLDOVA: 1) Moldova: val Duberlad, A. C. Montandon, 2) *Chaetocnema major*, Heikertinger det. (4 NHMW); 1) Mold. SSR, 8.VIII.1983, s. Kopanka, Karasev, V. (1 USNM); RUSSIA: 1) Krasnodar Pr., Mostovskii r-on, river Malaya Laba, 10.7.1985, Ohrimenko (1 USNM); SPAIN: 1) Madrid, 2) *Chaetocnema major* (Jac.), Baselga det. (1 MNCN); 1) Madrid, Aranjuez, 2) *Chaetocnema major* (Jac.), Baselga det. (1 MNCN); 1) Madrid, Canal, 2) *Chaetocnema major* (Jac.), Baselga det. (7 MNCN); 1) Sevilla, 2) *Chaetocnema major* (Jac.), Baselga det. (1 MNCN); SYRIA: 1) Akbes C.D. 1895, Coll. Vindob., 2) *Chaetocnema major perrisi* Baud., Heikertinger det. (2 NHMW); 1) Syrie, Akbes, C D. 1895, 2) *Chaetocnema coyeyi* All., 3) Coll. Mus. Vindob., 4) *major Perrisi*, det. Heikertgr. (1 NHMW); 1) Syrie, Akbes, C D. 1895, 2) Coll. Mus. Vindob. (1 NHMW); TURKEY: 1) Besika Bay [Beşik Bay] (7 BMNH); 1) Chanak [Çanakkale] (1 BMNH); UKRAINE: 1) Odessa, 1968, leg. V. Palij, 2) *Chaetocnema major*, Gruev det. (1 ZSMC).

***Chaetocnema mandschurica* Heikertinger**

Fig. 52, Map 46

mandschurica Heikertinger 1951:182 (as subspecies of *major*; type locality: Russia, Far East, "Mandschurei, Ussurigebiet"; type depository: NHMB; lectotype designated by Bechyné 1956:582). Döberl 2010:509 (new status)

Distribution: China (Gruev 1981), Japan (Kimoto & Hiura 1971), Russia (Primorsky Krai) (Heikertinger 1951).

Host plants: unknown.

Description: Body length (excluding head) 2.77–3.18 mm; width 1.45–1.69 mm. Ratio of elytron length at suture to maximum width, 2.52–2.59. Ratio of pronotum width at base to length at middle, 1.60–1.74. Ratio of length of elytron at suture to length of pronotum at middle, 3.06–3.34. Ratio of width of both elytra at base to width of pronotum at base, 1.04–1.09. Ratio of maximum width of both elytra to maximum width of pronotum, 1.25–1.27.

Elytron blueish without yellow, rarely bronzish without yellow. Pronotum blueish, rarely bronzish. Antennomere 1–4 completely yellow. Antennomere 5 completely yellow, rarely partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus wide and deep with vertical walls, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.08–1.17. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Sides of pronotum nearly straight, converging anteriorly. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Scutellar row of punctures on elytron regular and single, rarely confused or more than one. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.28–1.31. First and second male protarsomere length to length ratio, 1.89–2.07. First and second male protarsomeres width to width ratio, 1.46–1.59. Length of metatibia to distance between denticle and metatibial apex 2.58–2.64. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.73–2.77. First male protarsomere

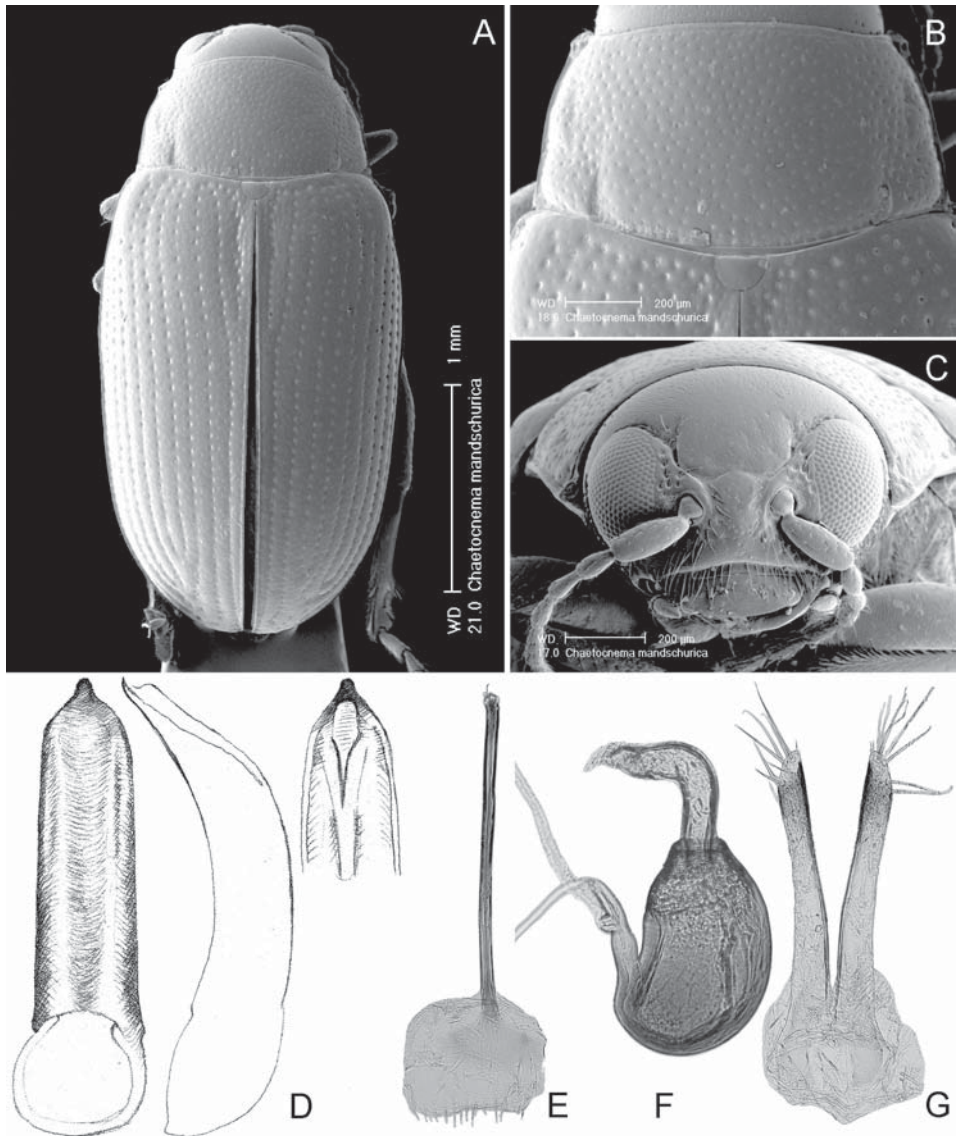
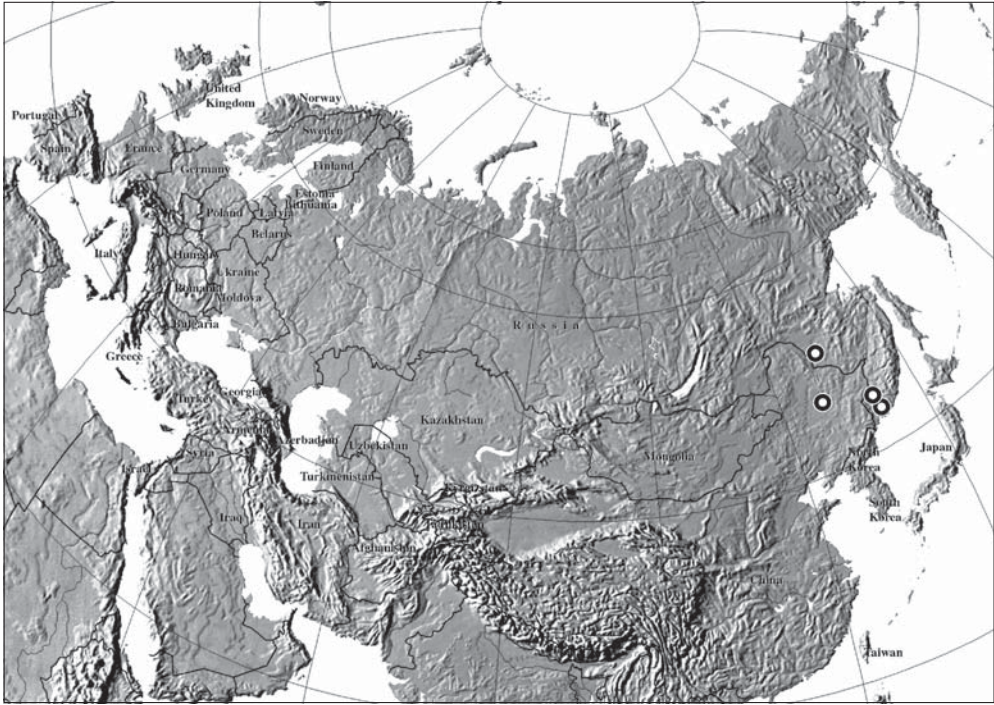


Figure 52. *Chaetocnema mandschurica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

maximum width to width at base ratio, 3.27–3.29. First and second male metatarsomere length to length ratio, 1.52–1.55. First and second male metatarsomere width to width ratio, 1.00–1.07. Third and fourth male metatarsomere length to length ratio, 1.63–1.72.

Apical third of aedeagus parallel-sided. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex



Map 46. *Chaetocnema mandschurica*

apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; poorly developed with obtuse margins in basal half. Apical, middle, and basal part of longitudinal groove of equal width. Width of longitudinal groove at middle subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; strongly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex or slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; sharply curved at apex. Anterior end of anterior sclerotization acute.

Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema mandschurica* was proposed as a subspecies of *C. major* and it is clearly close to *C. major*. It can be separated from *C. major* based on proportions of the first protarsomere of the male and nearly complete absence of the lateral impressions on the ventral side of the aedeagus. Döberl (2010) elevated it to species level, with which we agree.

Type material: *Chaetocnema mandschurica*: Lectotype male: RUSSIA: 1) 50v. zap. ot. Lama., Tenzi. steppe dat'joche, Mandsch. A. V. Martinou, 22.VII.05, 2) Chaet. (Tl.) major mandschurica m. det. Heiktgr. type, 3) major mandschurica Heiktgr. typus, 4) 1953 Coll. Heikertinger (1 NHMB); Paralectotypes: 1) 50v. zap. ot. Lama-Tenzi. step. po dalyaohe, Mandsch. A. V. Martinov, 28.VII.05, 2) Mandschuria, 3) Reitter donau, 4) Chaet. (Tl.) major mandschurica m. det. Heiktgr. type, 5) major mandschurica Heiktgr. typus, 6) 1953 Coll. Heikertinger (1 NHMB); 1) Nikolsk Ussurrjsk, Ussurigebl., Mandl, 2) major mandschurica det. Heiktgr, 3) 1953 Coll. Heikertinger (1 NHMB).

Material: CHINA: 1) Charbin Dist., June 12, 1952 (22 BMNH); RUSSIA: 1) Voroshilov, Ussur. 15.VI.1931, Samoilov, 2) *Chaetocnema mandschurica* det. A. S. Konstantinov (1 USNM 1) Blagoveschensk, Amur. obl., 9.VIII.928, V. Vereschagin, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) der. Nob. Dev. Hanka, Ussur krai, Shtakel'berg, 7.VII.927, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) Kamen'-Rybolov, lake Hanka, Yuzhnous, Cherskii, 12.VI.08, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) Kamen'-Rybolov, lake Hanka, Yuzhnous, Cherskii, 18.VI.08, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) Kamen'-Rybolov, lake Hanka, Yuzhnous, Cherskii, 20.VII.08, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) s. Il'inskoe, lake Hanka, Yuzhnous, Cherskii, 26.VII.08, 2) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS); 1) s. Troitskoe, lake Hanka, Primorsk, Cherskii, 27.V.09, 2) *Chaetocnema eoe* m., 1928, typ, D. Oglobin det, 3) *Ch. major madschurica* Hkt., I. Lopatin det. 1961, 4) *Chaetocnema mandschurica* Heik., det. A. S. Konstantinov, 2009 (2 ZMAS).

Chaetocnema mannerheimii (Gyllenhal)

Fig. 53, Map 47

mannerheimii Gyllenhal 1827:664 (type locality: "Finlandia", "Anglia"; type depository: UUZM; lectotype designated here); as *Haltica (Striata)*

fallax Weise 1888:771 (as variety of *mannerheimii*; type locality: not given; type depository: ZMHB); Heikertinger 1951:212 (synonymized)

Distribution: Albania (Gruev 1992), Austria (Redtenbacher 1849), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bulgaria (Gruev 1992), Croatia (Gruev

1992), Czech Republic, Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Germany, Greece (Gruev 1990a), Hungary (Vig 1996), Italy (Biondi 1990a), Latvia (Pütele 1971), Liechtenstein, Luxembourg, Kazakhstan (Lopatin 1977b), Kyrgyzstan (Lopatin 1977b), Netherlands (Leesberg 1881), Moldova, Mongolia, Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (European part) (Konstantinov 1988), Serbia (Gruev 1992), Slovakia, Slovenia (Gruev & Döberl 1997), Sweden, Switzerland (Stierlin 1886), Turkey, Ukraine (Crimea) (Konstantinov 1988).

Host plants: *Dactylis glomerata*, *Glyceria* (Nonveiller 1978); Poaceae, Juncaceae, Cyperaceae (Biondi 1990a); *Glyceria maxima*, *Carex*, *Juncus* (Doguet 1994).

Description: Body length (excluding head) 2.27–2.30 mm; width 1.26–1.28 mm. Ratio of elytron length at suture to maximum width, 2.34–2.39. Ratio of pronotum width at base to length at middle, 1.31–1.36. Ratio of length of elytron at suture to length of pronotum at middle, 2.50–2.55. Ratio of width of both elytra at base to width of pronotum at base, 1.11–1.14. Ratio of maximum width of both elytra to maximum width of pronotum, 1.35–1.37.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–2 partly dark brown, rarely completely yellow. Antennomere 3–4 partly brown, rarely completely yellow. Antennomere 5 completely brown, rarely partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.88–1.89. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.10–1.16. First and second male protarsomere length to length ratio, 1.46–1.48. First and second male protarsomeres width to width ratio, 1.42–1.45. Length of metatibia to distance between denticle and metatibial apex 2.24–2.29. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex

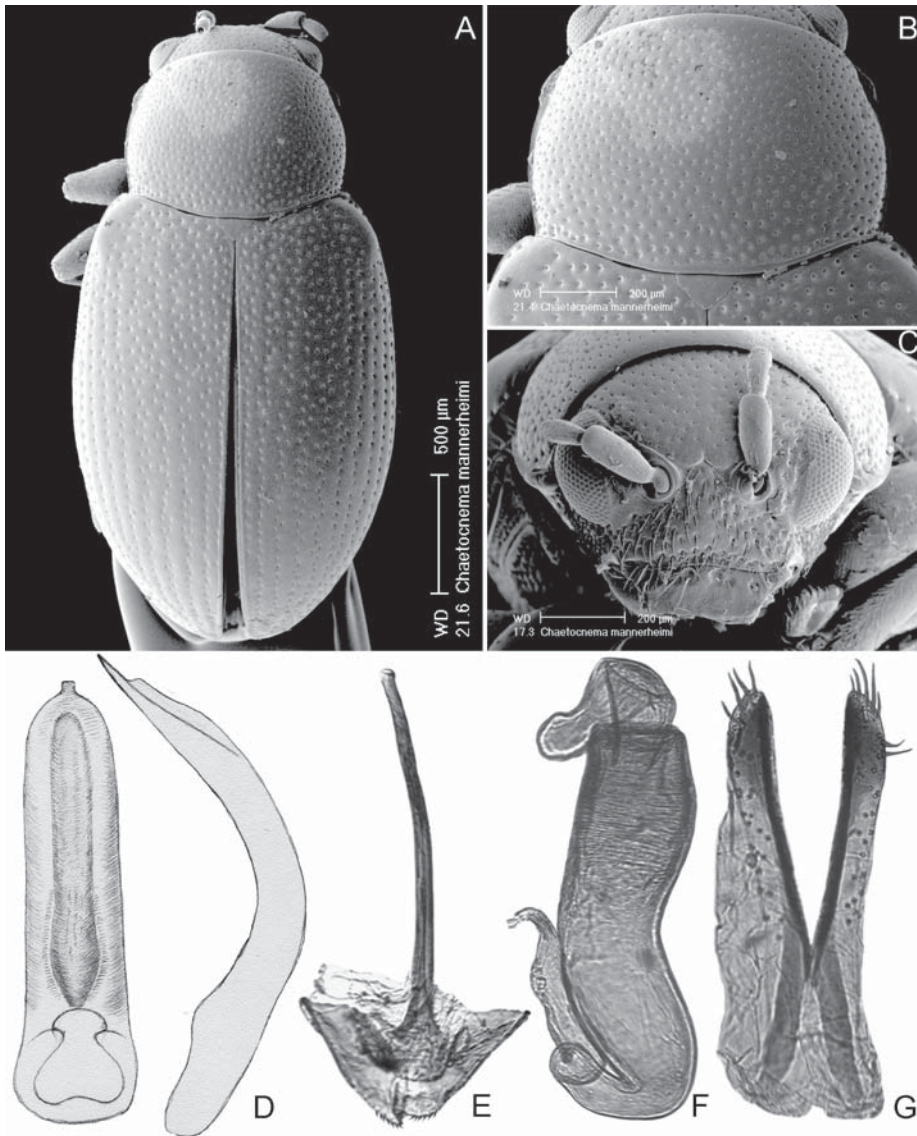


Figure 53. *Chaetocnema mannerheimii*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

in dorsal view. First male metatarsomere length to width ratio, 1.45–1.48. First male protarsomere maximum width to width at base ratio, 2.89–2.93. First and second male metatarsomere length to length ratio, 1.46–1.48. First and second male metatarsomere width to width ratio, 1.25–1.28. Third and fourth male metatarsomere length to length ratio, 1.28–1.34.

of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization indeterminate or nearly flat. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: The current concept of *C. mannerheimii* is based on the female lectotype (UUZM) that we compared with male specimens from Greece identified by Mohr. The male genitalia of these specimens are also very similar to that illustrated in Doguet (1994). *Chaetocnema mannerheimii* is similar to *C. sinuata* by the shape of the ventral groove of the aedeagus, but can be easily separated from it by the apex of the aedeagus narrowing abruptly and the apical denticle of the aedeagus with a flat top (the apex is narrowing more gradually and the apical denticle is with a round apex).

Type material: *Chaetocnema mannerheimii*: Lectotype female: 1) a; 2) Uppsala Univ. Zool. Mus. Gyllenhals saml. TYP nr. 1393; 3) Anglia Kirby; 4) Lectotype *Chaetocnema mannerheimii* Gyllenhal des. A. S. Konstantinov et al., 2009 (UUZM); Paralectotype, the same labels as lectotype except first label with letter b and second handwritten and illegible label (1 UUZM).

Material: AUSTRIA: 1) Austria, Collect. Kaufmann, 2) *Chaetocnema mannerheimii*, Heikertinger det. (1 NHMW); BELARUS: 1) Minskoe res. meadow, 7.IX.1980, Konstantinov, 2) *Chaetocnema mannerheimii* Gyll. (1 USNM); ESTONIA: 1) Estonia, Rutja, 28.VI.31, 2) *mannerheimii* (1 USNM); FRANCE: 1) Environ de Paris, leg. J. C. Deville (1 BMNH); 1) Gallia [France] (3 BMNH); 1) le Mesnil St. Pere, Marais de Frise, St. Symphorien, Lac du Gd. Lieu, Poulans, Perray en Yv., Jaunes, Chemilly, Bugeat, May-September, leg. M. Bergeal (25 BCPF); 1) Env. de Paris, S. C. Deville, 2) *Mannerheimi*, 3) G. C. Champion Coll., B. M. 1927-409 (1 BMNH); GERMANY: 1) Rheinl. Berghelin, leg. Siede (1 BCPF); HUNGARY: 1) Hungaria, Staudinger, 2) *Chaetocn. Mannerheimi* Gyllh., Heik. det. (1 USNM); KYRGYZSTAN: 1) Frunze, Karag roscha, 18.VII.1945, A. Lubischew, 2) *Chaetocnema mannerheimi* Gyl, A. Lubischew det (1 ZMAS); LATVIA: 1) Bausk, 1954, V. Palij, 2) *Chaetocnema mannerheimii*, Gruev det. (4 ZSMC); MOLDOVA: Male 1) Dunai river, 10.8.71, 2) *Chaetocnema mannerheimi* (Gyll.), det. A. S. Konstantinov, 2009 (2 USNM); POLAND: 1) ? Gubrau Schlesien [Silesia], 2) *Chaetocnema mannerheimii*, Heikertinger det. (4 NHMW); RUSSIA: 1) Voronezh oblast', Ramon', 23.VIII.1970, leg. B. Gruev., 2) *Chaetocnema mannerheimii*, Gruev det. (1 ZSMC); 1) Ramon', Voronezh ob., 27.VII.1952, V. V. Palij, 2) *Chaetocnema mannerheimi* Gyl, A. Lubischew det (1 ZMAS).

***Chaetocnema modesta* Gressitt & Kimoto**

Fig. 54, Map 48

modesta Gressitt & Kimoto 1963:780 (type locality: China, "Sui-sa-pa, 1000 m, Lichuan Distr., W. Hupeh Prov."; type depository: CASC)

Distribution: China (Gressitt & Kimoto 1963).

Host plants: unknown.

Description: Body length (excluding head) 2.10–2.37 mm; width 1.24–1.40 mm. Ratio of elytron length at suture to maximum width, 2.42–2.63. Ratio of pronotum width at base to length at middle, 1.28–1.29. Ratio of length of elytron at suture to length of pronotum at middle, 2.59–2.75. Ratio of width of both elytra at base to width of pronotum at base, 1.22–1.25. Ratio of maximum width of both elytra to maximum width of pronotum, 1.50–1.56.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–3 completely yellow. Antennomere 4–5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.84–0.86. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly sinusoidal (concave to straight basally, convex further apically). Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures larger than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.31–1.34. First and second male protarsomere length to length ratio, 1.18–1.23. First and second male protarsomeres width to width ratio, 1.25–1.30. Length of metatibia to distance between denticle and metatibial apex 2.34–2.39. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.27–2.33. First male protarsomere maximum width to width at base ratio, 2.30–2.36. First and second male metatarsomere length to length ratio, 1.41–1.45. First and second male metatarsomere width to width ratio, 1.09–1.13.

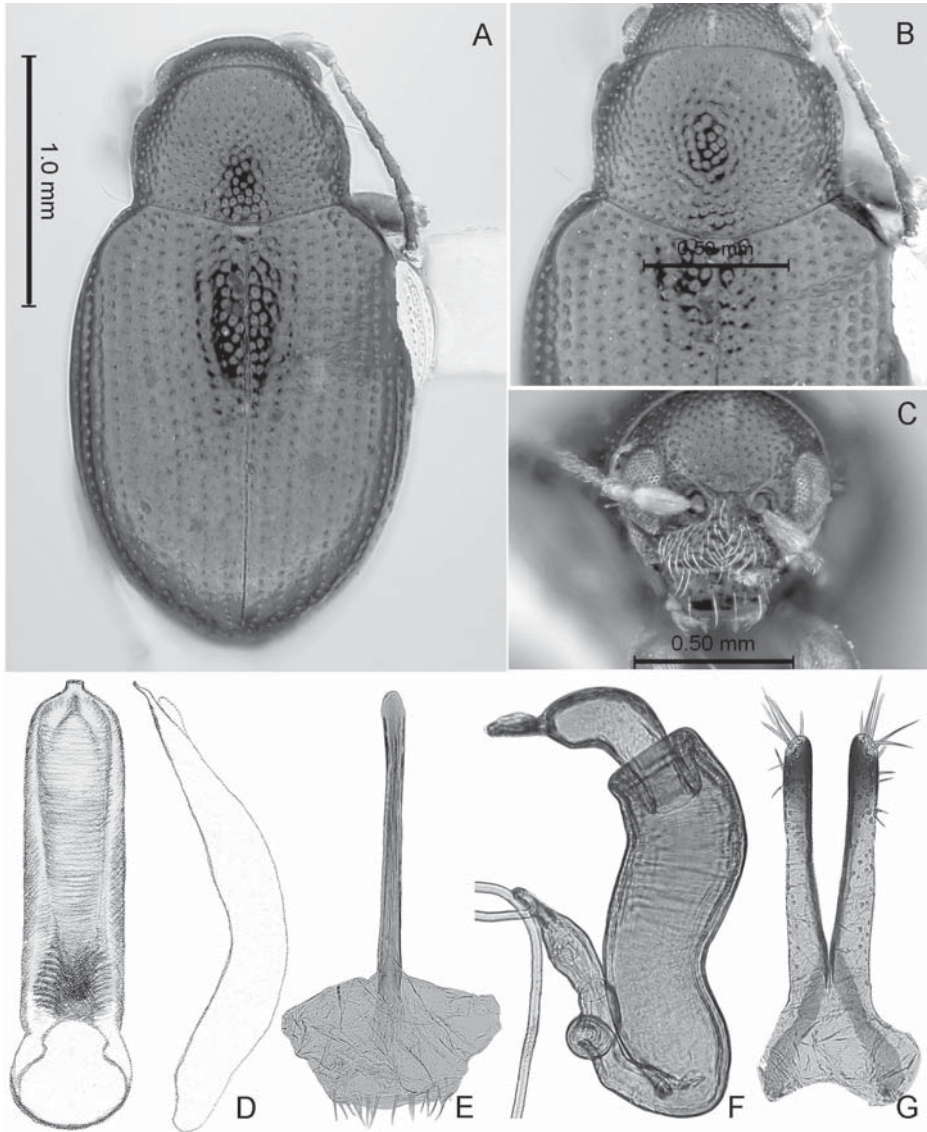
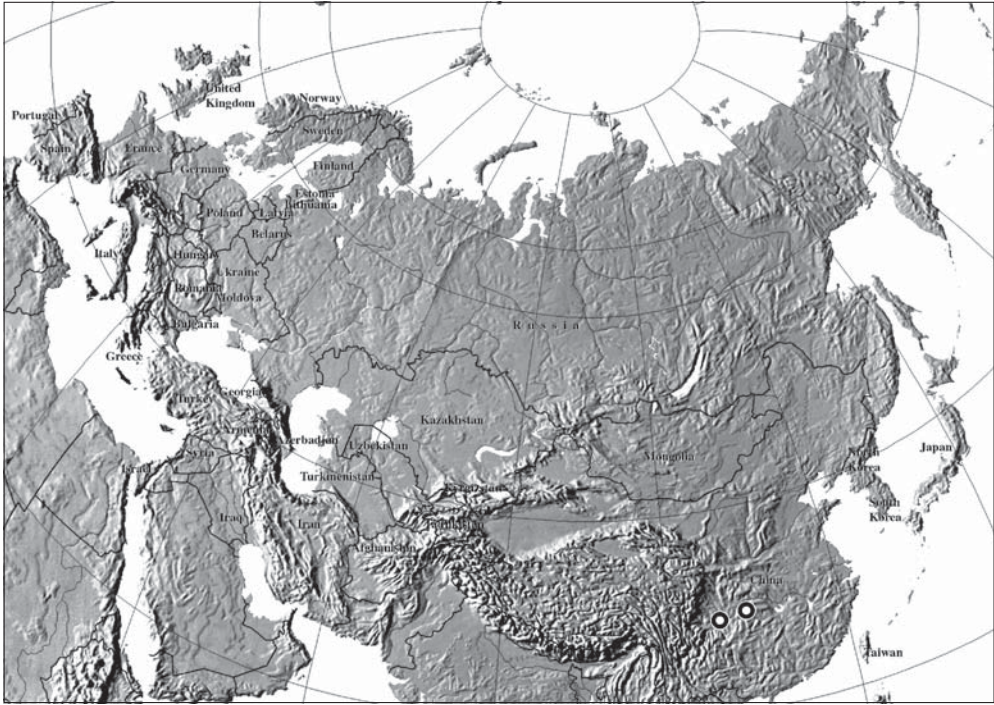


Figure 54. *Chaetocnema modesta*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus shallow with sharp margins; poorly developed, with sharp margins in



Map 48. *Chaetocnema modesta*

basal half. Apical part of longitudinal groove as wide as basal; middle part narrower than basal and apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; present on apical part; narrower than those on basal part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus sinusoidal. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema modesta* has a unique aedeagus that separates it from all other Asian *Chaetocnema*. It has a very wide ventral groove that narrows gradually from the apex to the base of the aedeagus. The apex of the aedeagus is sharply bent dorsally in lateral view.

Type material: *Chaetocnema modesta*: Holotype female: 1) Suisapa, 1000 M., Lichuan Distr., W. Hupeh, China, VIII-31-48, 2) Gressitt, Djou Collrs., 3) Holotype Female, Chaetocnema (*Chaetocnema*) *modesta* Gressitt & Kimoto [Red Label], 4) California Academy of Sciences, Type No. 13258, 5) 22 Konstantinov, 6) 013 (1 CASC); Paratypes: 1) Suisapa, Lichuan Dist., W. Rupah (1000 m.), August 26, 1943, leg. Gressitt and Djou (2 CASC); 1) Suisapa, 1000 M., Lichuan Distr., W. Hupeh, China, VII-23-48, 2) J. L. Gressitt Collector, 3) Paratype, *Chaetocnema* (*Chaetocnema*) *modesta* Gressitt & Kimoto (1 CASC); Male: 1) Szechuan, China, NE. of Motauchi, Wanhsien. IX.26.48, 4200-4800 ft., 2) Gressitt & Djou Collrs., 3) Paratype, *Chaetocnema* (*Chaetocnema*) *modesta* Gressitt & Kimoto (1 CASC).

Chaetocnema montenegrina Heikertinger

Fig. 55, Map 49

montenegrina Heikertinger 1912:44 (as subspecies of *hortensis*; type locality: Montenegro, "Krivošije"; type depository NHMB; lectotype designated by Bechyné 1956:583)

Distribution: Albania (Gruev 1992), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1992), Croatia (Gruev 1992), Greece (Nonveiller 1978, Gruev 1990a), Italy (Biondi 1989), Macedonia (Gruev 1979), Montenegro (Gruev 1992), Romania (Gruev et al. 1993), Russia, Serbia (Gruev 1979), Ukraine.

Host plants: *Phleum pratense nodosum*, *Hordeum bulbosum* (Tölg 1938).

Description: Body length (excluding head) 2.00–2.28 mm; width 1.18–1.28 mm. Ratio of elytron length at suture to maximum width, 2.55–2.60. Ratio of pronotum width at base to length at middle, 1.38–1.50. Ratio of length of elytron at suture to length of pronotum at middle, 2.57–2.63. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.44–1.49.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.71–1.87. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.32–1.53. First and second male protarsomere length to length ratio, 1.54–1.59. First and second male protarsomeres width to width ratio, 1.28–1.31. Length of metatibia to distance between denticle and metatibial apex 2.20–2.25. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.33–2.38. First male protarsomere maximum width to width at base ratio, 2.14–2.17. First and second male metatarsomere length to length ratio, 1.42–1.48. First and second male metatarsomere width to width ratio, 0.98–1.01. Third and fourth male metatarsomere length to length ratio, 1.86–2.05.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove narrower than basal. Middle part of longitudinal groove narrower than basal; wider or narrower than apical. Longitudinal groove in middle compared to distance between groove and lateral margin subequal or smaller. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, narrow, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly or posteriorly as

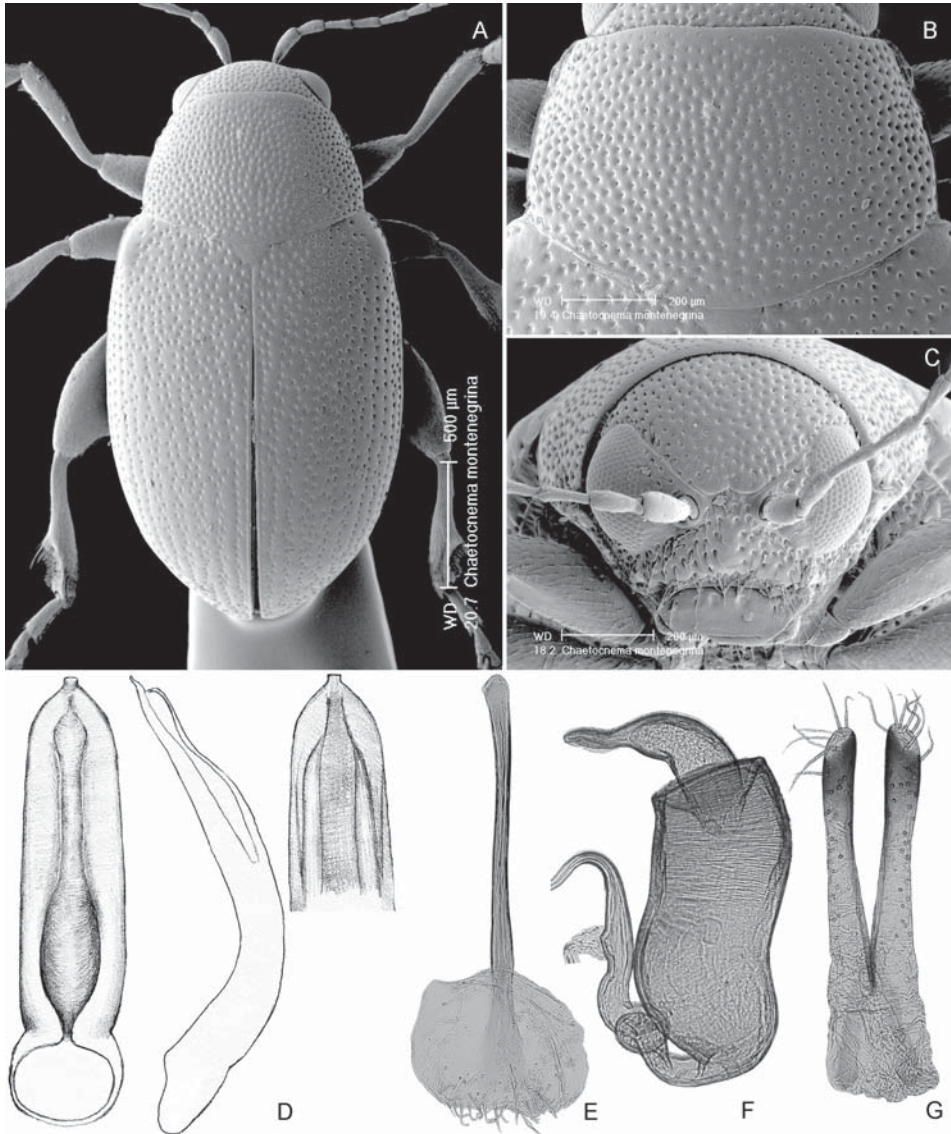
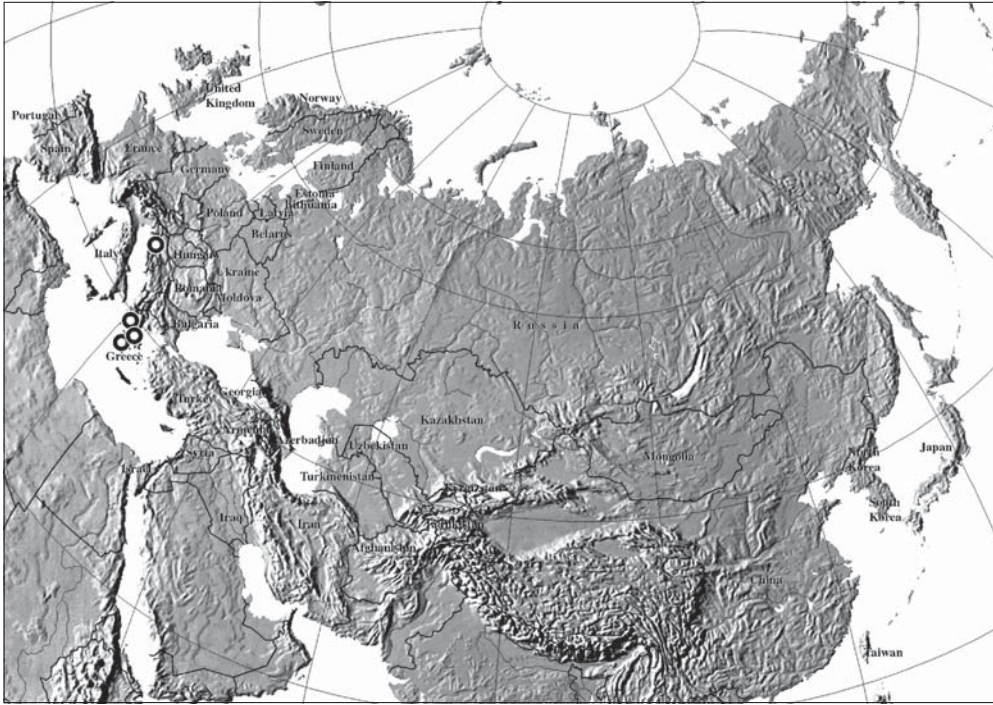


Figure 55. *Chaetocnema montenegrina*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

wide as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: Lectotype and paralectotypes were used here to establish the identity of *C. montenegrina*. Most of *C. montenegrina* specimens are easily separated from *C.*



Map 49. *Chaetocnema montenegrina*

hortensis by the dark color of the top portion of the first antennomere. Records of *C. montenegrina* from Armenia, Turkey, Central and Middle Asia (Berti & Rapilly 1973, Gruev 1988a, Gruev & Döberl 1997, Gruev & Kasap 1985, Lopatin 1977b) most likely belong to *C. igori*.

Type material: *Chaetocnema montenegrina*: Lectotype male: 1) Krivosije, Paganetti, 2) blank blue label, 3) *hortensis montenegrina* m. [red label], 4) 1953 Coll., Heikertinger, 5) lectotype, J. Bechyně det., 1956 (1 NHMB); Paralectotypes: 1) Krivosije, Paganetti, 2) *hortensis montenegrina* m. [red label], 4) 1953 Coll., Heikertinger (1 NHMB); 1) Krivosije, Paganetti, 2) blank blue label, 3) *hortensis montenegrina* m. [red label], 4) 1953 Coll., Heikertinger (1 NHMB); 1) Dalmat. Montenegro, 2) Krivosije, Paganetti, 3) Cotype!, 4) *Chaetocnema hortensis montenegrina* det. Heikertgr. 1923 m. cotype (BMNH).

Material: CROATIA: 1) ? Krivosije Paganetti, 2) *Chaetocnema montenegrina*, Heikertinger det. (1 NHMW); GREECE: 1) ? Parnass [Mt. Parnassus] Paganetti, 2) *Chaetocnema montenegrina*, Heikertinger det. (6 NHMW); 1) Epire, Ariste: Vallée du Voidomatis, June 11, 1978, leg. B. et M. Bergeal (7 BCPF); 1) Epire: Metsovo, 1200 m., June 8, 1997, leg. B. et M. Bergeal (2 BCPF); 1) Macédoine (Samarina-Fourkas, 1700 m), June 10, 1997, leg. B. et M. Bergeal (5 BCPF); 1) GR, Péloponnèse, Ahaïa, Erimanthos, Kalentzi, 14 IV 2000, B. et M. Bergeal leg, 2) Collection, M. Bergeal, Versailles, 3)

Chaetocnema montenegrina Hktr., A. Baselga 2009 (3 BCPF); 1) GR-Epire, Aristi, Vallée du Voidomatis, 11 VI 1978, B. et M. Bergeal, 2) *Chaetocnema montenegrina* Hktr., M. Bergeal det 1997, 3) collbergealversailles (1 BCPF).

***Chaetocnema nebulosa* Weise**

Fig. 56, Map 50

nebulosa Weise 1886:753 (type locality: "Russia merid., in der Umgegend von Derbent"; type depository: ZMHB)

Distribution: Iran (Lopatin 1990), Kazakhstan (Lopatin 1977b), Kyrgyzstan, Mongolia (Medvedev 1982), Russia (Dagestan) (Lopatin 1977b), Ukraine (Lopatin 1960).

Host plants: *Sueda*, *Salicornia*, *Halocnemum strobiculatum* (Lopatin 1977b), *Chenopodium album*.

Description: Body length (excluding head) 1.63–2.00 mm; width 0.89–1.04 mm. Ratio of elytron length at suture to maximum width, 2.57–2.64. Ratio of pronotum width at base to length at middle, 1.76–1.78. Ratio of length of elytron at suture to length of pronotum at middle, 3.48–3.61. Ratio of width of both elytra at base to width of pronotum at base, 1.13–1.15. Ratio of maximum width of both elytra to maximum width of pronotum, 1.34–1.38.

Elytron yellow to brownish. Pronotum bronzyish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus absent. Suprafrontal sulcus shallow and faint, straight, forming obtuse angle and notch. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.54–1.78. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.81–1.87. First and second male protarsomere length to length ratio, 1.22–1.25. First and second male protarsomeres

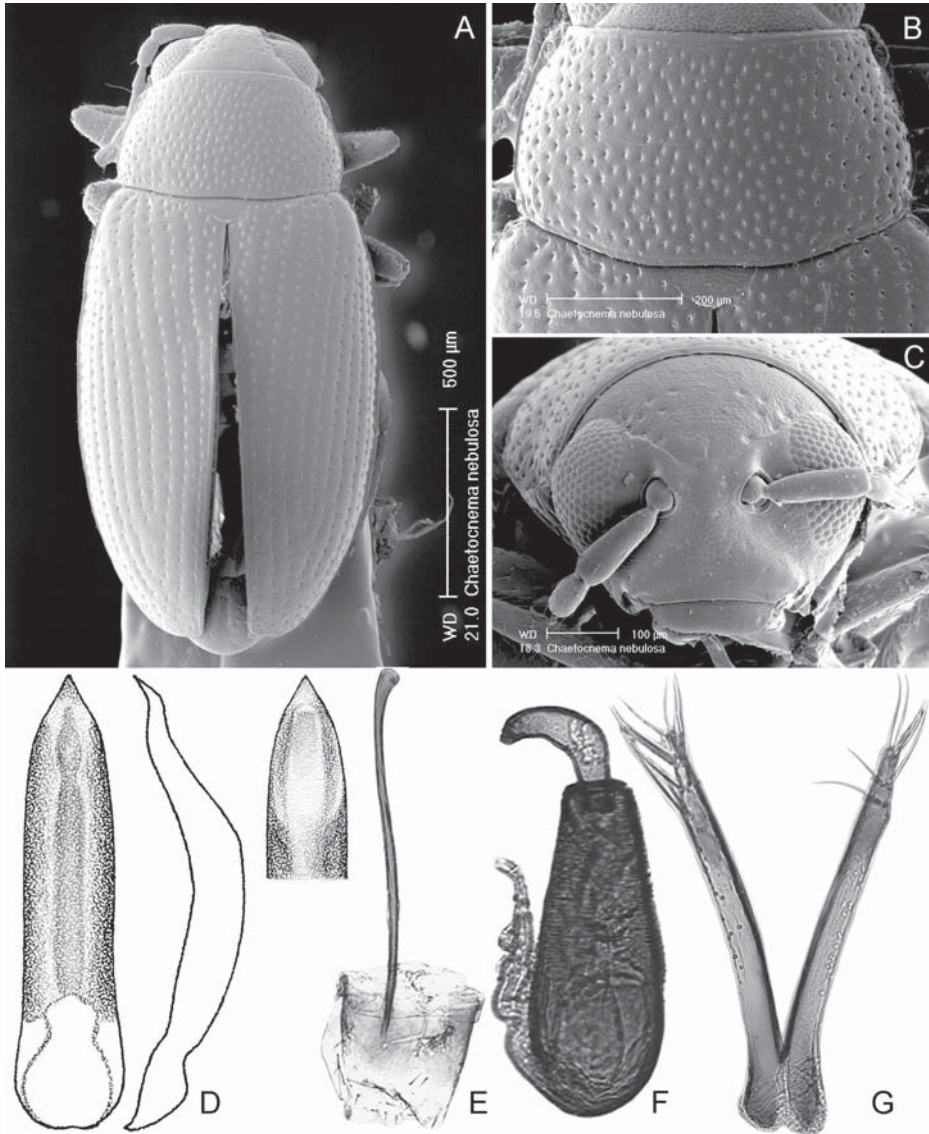
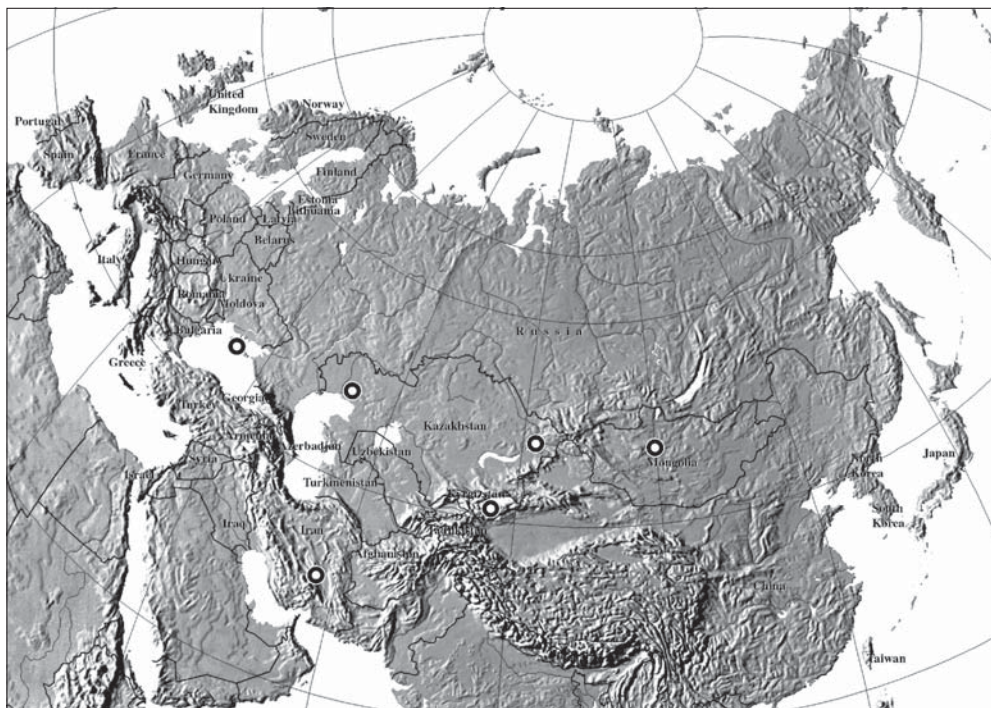


Figure 56. *Chaetocnema nebulosa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

width to width ratio, 1.40–1.45. Length of metatibia to distance between denticle and metatibial apex 2.44–2.47. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.80–3.86. First male protarsomere maximum width to width at base ratio, 1.55–1.59. First and



Map 50. *Chaetocnema nebulosa*

second male metatarsomere length to length ratio, 1.52–1.63. First and second male metatarsomere width to width ratio, 1.00–1.03. Third and fourth male metatarsomere length to length ratio, 2.75–2.81.

Apical third of aedeagus narrowing. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with obtuse margins in basal half. Apical, middle, and basal part of longitudinal groove of equal width. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view sinusoidal near apex with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum strongly curved. Anterior sclerotization

of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great or narrower than width of anterior sclerotization.

Remarks: *Chaetocnema nebulosa* is similar to *C. conducta*, *C. depressa*, and *C. orientalis* in having parts of their elytra yellow. It can be separated from all three species by the aedeagus which has a narrow ventral groove along its entire length. The ventral groove of the aedeagus is narrower than the distance between the groove and lateral margin. Like many other flea beetle species (not only *Chaetocnema*) of arid environments, it differs in having a very long fourth metatarsomere and very small third metatarsomere. Also the tarsi lack setae.

Material: IRAN: 1) SW Iran, Bachtegan, 30 km E Sahlabad, 7.7.1970, 2) Loc. no. 47, Exp. Nat Mus. Praha, 3) *Chaetocnema srihlai* m. Female, J. Král det. 79, Paratypus, 4) Paratypus, 5) *Chaetocnema nebulosa* Ws., det. I. Lopatin, 1988 (1 ZMAS); KAZAKHSTAN: 1) Dossor. Gur'evsk obl. Kazakhst. Mityaev, 22.V.1957, 5) *Chaetocnema nebulosa* Ws., det. I. Lopatin, 1988 (1 USNM); 1) Tarankly-kul, dist. Zaisson [Zaysan], July 1, 1930 (1 BMNH); KYRGYZSTAN: 1) Centr. Tien-Shan, river Naryn, 12.VII.1966, E, Gur'eva, 5) *Chaetocnema nebulosa* Ws., det. I. Lopatin, 1966 (2 USNM); MONGOLIA: 1) Mongolia, Boyan-Hong, 135 km S Shine-Dzhinsta, 28.VIII.1981, Korotyaev, 2) Takyr, Tol'-Bulak, on *Chenopodium album*, 3) *Chaetocnema nebulosa* Wse., No. 18 (1 ZMAS); UKRAINE: 1) Krimea, Nizhnegorsk, Sivash shore, Salicaria, 21.VI.1958, I. Mal'tsev, 2) *Chaetocnema nebulosa* Wse., KP61M Male, No. 17 (1 USNM); 1) Krimea, Sivash shore, 19.7.1980, Mosyakin, S. A., 2) *Chaetocnema nebulosa* Wse., KP61M Male (2 USNM).

***Chaetocnema nocticolor* Rapilly**

Fig. 57, Map 51

nocticolor Rapilly 1978:331 (type locality: "Iran, Patao"; type depository: MNHN)

Distribution: Iran (Rapilly 1978).

Host plants: unknown.

Description: Body length (excluding head) 2.08–2.42 mm; width 1.13–1.35 mm. Ratio of elytron length at suture to maximum width, 2.65–2.88. Ratio of pronotum width at base to length at middle, 1.43–1.45. Ratio of length of elytron at suture to length of pronotum at middle, 2.55–2.75. Ratio of width of both elytra at base to width of pronotum at base, 1.11–1.19. Ratio of maximum width of both elytra to maximum width of pronotum, 1.24–1.36.

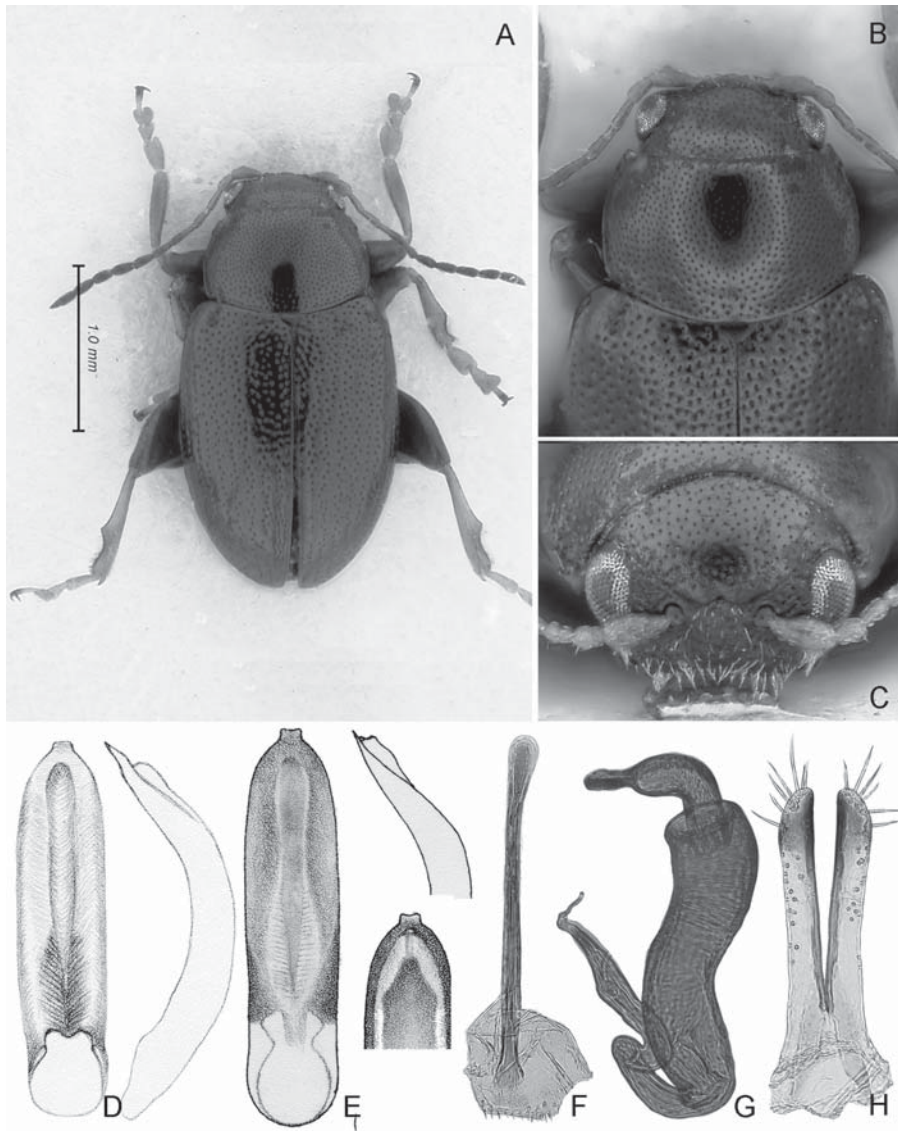
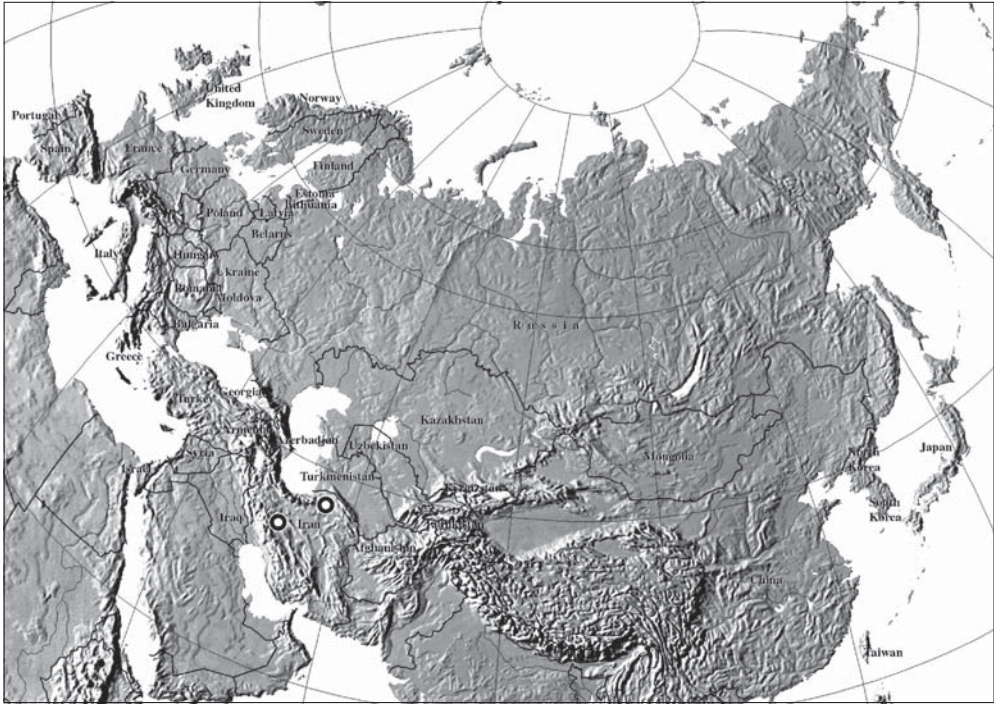


Figure 57. *Chaetocnema nocticolor*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus of the holotype, ventral and lateral; E, aedeagus, ventral, lateral, dorsal; F, tignum; G, spermatheca; H, vaginal palpi.

Elytron blueish without yellow, rarely bronzish without yellow. Pronotum blueish, rarely bronzish. Antennomere 1–4 completely yellow. Antennomere 5 completely yellow or partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown or light brown. Metafemur brown.



Map 51. *Chaetocnema nocticolor*

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.16–2.28. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them or 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.47–1.50. First and second male protarsomere length to length ratio, 1.46–1.60. First and second male protarsomeres width to width ratio, 1.24–1.45. Length of metatibia to distance between denticle and

metatibial apex 2.14–2.33. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.01–3.22. First male protarsomere maximum width to width at base ratio, 2.28–2.42. First and second male metatarsomere length to length ratio, 1.64–1.72. First and second male metatarsomere width to width ratio, 1.00–1.13. Third and fourth male metatarsomere length to length ratio, 2.08–2.13.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; flat, oblique in middle; basally flat. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with sharp or obtuse margins; well-developed, with sharp margins in basal half. Apical and middle parts of longitudinal groove subequal in width; wider than basal part. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; straight in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent from apical part. Aedeagus in lateral view abruptly curved or evenly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex or parallel-sided. Anterior sclerotization of vaginal palpus ensiform. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema nocticolor* has the aedeagus similar to that of *C. tbilisiensis* by the shape of the ventral groove which gradually widens from the base to the apex and by the shape of the apex in ventral view. It can be differentiated by the apex being straight in lateral view (it is curved dorsally in *C. tbilisiensis*) and by the transverse wrinkles which do not reach the middle of the ventral side of the aedeagus (in *C. tbilisiensis* the wrinkles cover the ventral side from base to and beyond the middle).

Type material: *Chaetocnema nocticolor*: Holotype male: 1) Holotype; 2) Iran, Patao, 18.VI.75, 1500 m; 3) Museum Paris; 4) *Chaetocnema* (*Chaetocnema*) *nocticolor* Rapilly, M. Rapilly det. 1978 (MNHN). Paratype female: 1) Iran, Nurabad, 22.VI.75, 1750 m; 3) Museum Paris, (MNHN).

Material: IRAN: male and female: 1) W Iran, Eskandari, 2000 m, 1.7.1970, 2) Loc. no. 36, Exp. Nat. Mus. Praha, 3) *Chaetocnema nocticolor* Rap (2 USNM).

***Chaetocnema obesa* (Boieldieu)**

Fig. 58, Map 52

obesa Boieldieu 1859:480 (type locality: France, "Montpellier"; type depository: MNHN; lectotype designated by Doguet 1989:191), as *Plectroscelis*

meridionalis Foudras 1860:228 (type locality: France, "Hyères et Montpellier"; type depository: unknown); Heikertinger 1951:212 (synonymized)

unicolor Weise 1888:769 (as variety of *meridionalis*; type locality: not given; type depository: ZMHB); Heikertinger 1951:212 (synonymized)

corcyrica Pic 1909:139 (as variety of *meridionalis*; type locality: Greece, "Corfou"; type depository: MNHN); Heikertinger 1951:212 (synonymized)

jurassica Pic 1915b:42 (type locality: France, "Jura: Bois d'Amont"; type depository: MNHN; lectotype designated here); Heikertinger 1951:212 (synonymized)

Distribution: Albania (Gruev 1992), Algeria, Armenia, Austria (Redtenbacher 1874), Azerbaijan, Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1992), China (Tibet), Croatia (Gruev 1992), Czech Republic, France (Doguet 1994), Georgia, Germany (Weise 1886), Greece (Mohr 1965, Gruev 1990a), Hungary (Vig 1996), Iraq (Gruev 1995b), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Latvia (Pūtele 1971), Macedonia (Gruev 1992), Moldova, Mongolia, Poland (Bartkowska 1994), Portugal (Baselga & Novoa 2003), Romania (Gruev et al. 1993), Russia (Altai, Caucasus) (Konstantinov 1988), Serbia (Gruev 1979), Slovakia, Slovenia (Gruev 1992), Spain (Petitpierre & Doguet 1981), Switzerland, Turkey (Gruev & Kasap 1985), Ukraine (Crimea) (Konstantinov 1988).

Host plants: *Eleocharis palustris* (Peyerimhoff 1915); *Juncus* (Caillol 1924, Théron 1976); *Carex distans* (Heikertinger 1925); *Juncus acutus* (Tölg 1938); *Carex vulpina*, *C. distans*, *Scirpus maritimus* (Doguet 1994); Cyperaceae (Biondi 1990a).

Description: Body length (excluding head) 2.33–2.44 mm; width 1.25–1.35 mm. Ratio of elytron length at suture to maximum width, 2.37–2.56. Ratio of pronotum width at base to length at middle, 1.27–1.40. Ratio of length of elytron at suture to length of pronotum at middle, 2.30–2.57. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.30–1.31.

Elytron bronzy without yellow or blueish without yellow. Pronotum bronzy, greenish, blueish or black, without metallic luster. Antennomere 1–2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia partly brown, rarely completely brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, straight with notch in middle. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.24–2.35. Frons

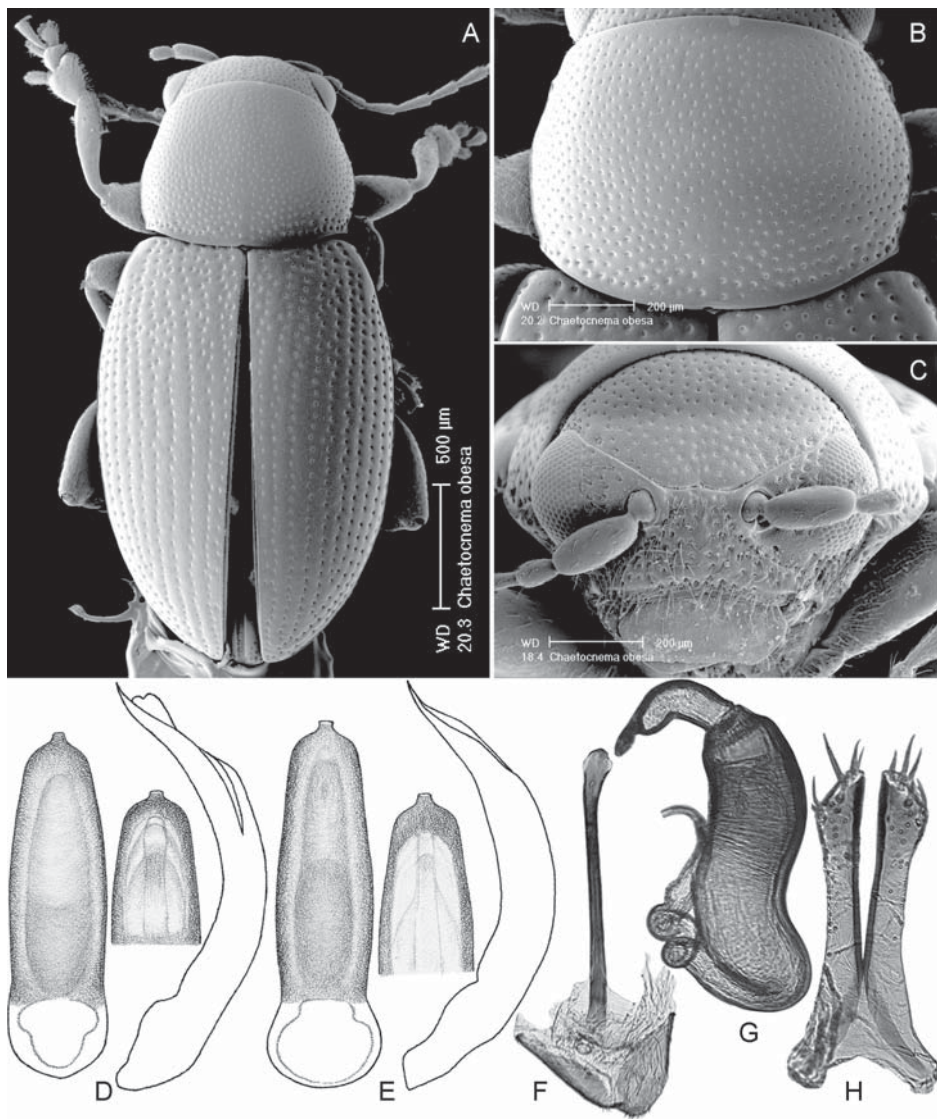
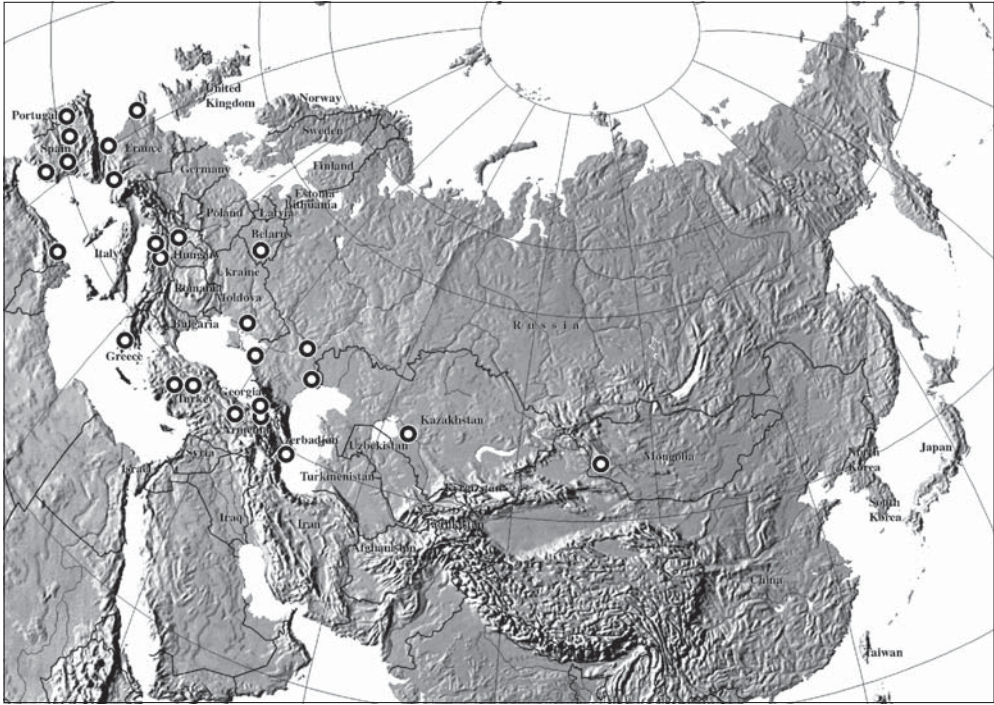


Figure 58. *Chaetocnema obesa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, E, aedeagus, ventral, lateral, and dorsal; F, tignum; G, spermatheca; H, vaginal palpi. Origin of specimens: D, Boieldieu, E, Lenkoran'.

evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered



Map 52. *Chaetocnema obesa*

with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.09–1.14. First and second male protarsomere length to length ratio, 1.50–1.64. First and second male protarsomeres width to width ratio, 1.43–1.50. Length of metatibia to distance between denticle and metatibial apex 2.26–2.29. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.75–1.83. First male protarsomere maximum width to width at base ratio, 3.17–3.23. First and second male metatarsomere length to length ratio, 1.61–1.76. First and second male metatarsomere width to width ratio, 1.20–1.22. Third and fourth male metatarsomere length to length ratio, 1.81–2.10.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly.

Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with obtuse margins in basal half. Apical part of longitudinal groove narrower than basal; middle part wider than basal and apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide or narrow, flat on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization indeterminate or nearly flat. Length of posterior sclerotization about as great as width. Width of posterior sclerotization greater than that of anterior.

Remarks: This is a common and widespread species generally known under the name *C. obesa*. Doguet (1994) designated a female as the lectotype which he mistook for a male. The specimen is not dissected although remounted, presumably by Doguet. We base our concept of *C. obesa* on the lectotype and a male and a female from the Bergeal collection (BCPF).

The name *C. obesa* could potentially be threatened by *C. meridionalis* (Allard, not Foudras). Dejean (1836: 393) listed *Plectroscelis meridionalis* in his catalogue but, like most of his species group names, it was not available. Allard (1859) and Foudras (1860) used this name in combination with a description and made it available; type specimens are known for neither of the two names. Heikertinger (1951) considered *C. meridionalis* (Allard) as a junior synonym of *C. semicoerulea* (Koch) and *C. meridionalis* (Foudras) as a junior synonym of *C. obesa* (Boieldieu). There is rather little information in the description of *C. meridionalis* (Allard) that could be used for or against Heikertinger's interpretation. However, if Allard (like, apparently, Foudras) applied the name to the species currently known as *C. obesa*, *C. meridionalis* (Allard) would take priority over *C. obesa* [for dates, see page CCXC in journal]. As *C. meridionalis* (Allard) is generally accepted as invalid and evidence against this view is lacking, we maintain the status quo and take no further action.

Chaetocnema obesa is very similar to *C. gottwaldi*. Even their aedeagi, spermathecae, and vaginal palpi are very similar. The only feature that separates the aedeagi of *C. obesa* and *C. gottwaldi* is the shape of the apex in lateral view. It is bent dorsally in *C.*

obesa and straight in *C. gottwaldi*. In addition, *C. obesa* can be separated from *C. gottwaldi*, because the third to fifth elytral striae are confused. They are regular in *C. gottwaldi*.

Type material: *Chaetocnema obesa*: Lectotype female: FRANCE: no additional data 1) meridionalis Foud., 2) Museum Paris, 1862, Coll. Jaquelin du Val, 3) Lectotype *Chaetocnema obesa* Boieldieu. Doguet des. 1989, 4) *P. obesa* Boield. (MNHN).

Chaetocnema jurassica Pic. Lectotype female: 1) Bos d'amo ... [illegible]; 2) TYPE; 3) *jurassica*; 4) Museum Paris Coll. M. Pic; 5) Lectotype *Chaetocnema jurassica* des. A. S. Konstantinov et al. 2009 (MNHN)

Material: ALGERIA: 1) Oued Mafrag Annaba, April 6, 1985, leg. M. Bergeal (1 BCPF); ARMENIA: 1) Armenia: Zangezour mountains, 1500-1900 m, vil. Khashab 27.V.1999, 39°51'65"N, 44°56'26E, leg. A. Konstantinov (2 USNM); 1) Armenia: near Khashab, Sweeping at 1500 m in wet Prairie: 39°51.65'N, 44°56.25E, May 28, 1999, Steven W. Lingafelter, Coll., 2) *Chaetocnema obesa* (Boield.), A. Baselga 2009 (1 USNM); 1) Armenia: Near Khashab, Sweeping at 1500 m in wet Prairie: 39°51.65'N, 44°56.25E, May 28, 1999, Steven W. Lingafelter, Coll. (31 USNM); AZERBAIJAN: 1) Lenkoran' 3.V., 2) ?*obesa* Boield., aed as in *obesa* (2 USNM); BELARUS: 1) Gomelskaya obl., c. Narovlya, 1.VI.82, Konstantinov, 2) *Chaetocnema meridionalis* Foudr., 3) *Chaetocnema meridionalis* Foudr., No. 42 (1 USNM); CROATIA: 1) ??? 2) *Chaetocnema obesa*, Heikertinger det. (2 NHMW); 1) ? Slavonien v. Hopffgarten, 2) *Chaetocnema obesa*, Heikertinger det. (1 NHMW); 1) Apfelbeck, c. Epplsh., Steind. d., 2) *Chaetocnema obesa*, Heikertinger det. (2 NHMW); FRANCE: 1) Bord de l'Etange de Cazaux, Feb. 23, 1957 (1 BCPF); 1) Hyeres (1 BCPF); 1) La Roque Esel. de Mol. Boissy (1 BCPF); 1) France, M. et L. La Roche du Thail, Coll. Mequignon, 2) *obesa* var., incerta Rey, 3) F. Monrós Collection, 1959, (2 USNM); 1) la Noe, 2) Lac de Gd Lieu (44) 1 VI 84, M. Bergeal, 3) *Chaetocnema obesa* Boieldieu, M. Bergeal det. 1997, 4) collbergealversailles (1 USNM); 1) Gallia mer., 2) *Chaetocn. meridionalis* ab. *corcyrica* Pic, Heik. det. (1 USNM); GEORGIA: Male 1) Surami, meadow, 25.7.83, Konstantinov (1 USNM); GREECE: 1) Peloponnes, Tripoli, April 25, 1996, leg. Marggi (1 BCPF); 1) Corfu, Paganetti, coll. Dr. J. Fodor, 2) *Chaetocnema obesa*, Gruet det. (1 ZSMC); HUNGARY: 1) bor. Parndorf, Wingelmuller, 2) *Chaetocnema obesa*, Heikertinger det. (1 NHMW); 1) Hungary; 2) *Chaetocnema obesa*, Heikertinger det. (1 NHMW); 1) mer. Nemetbogsan, 2) *Chaetocnema obesa*, Heikertinger det. (3 NHMW); 1) Húngaria, Peneř, Dr. Lenci, 2) *Chaetocnema obesa* Walth. (1 USNM); KAZAKHSTAN: 1) Kazalinsk, 3.V.1919., 2) *Chaetocnema obesa* Boield., I. K. Lopatin det. 1970 (1 USNM); MONGOLIA: 1) Mongolia, Chovol aimak, Dr. R. Piechocki, 2) Bulgan gol, 10 km o von Jarantaj, 3) Auwald, 18.V.1974, 4) *Chaetocnema obesa* Boield., det. I. Lopatin 1976 (1 USNM); PORTUGAL: 1) Tras-os-Montes, Miranda de Douro-Vila Cha, 21-VI-2001, leg. Baselga, 2) *Chaetocnema obesa* (Boield.), Baselga det. (1 BASC); RUSSIA: 1) Russia: Korzhenskoe env., Krasnodar Region: 31 May 1999: 45°12.71'N, 37°45.16'E: Sweeping, Steven Lingafelter, Coll. (14 USNM); 1) Astrakhan', V. Yakovlev, 2) k. Rybakova, 3) *Chaetocnema obesa* (Boieldieu), det. A. S. Konstantinov, 2009 (1 USNM); 1) Bl. st. Elton [Volgograd region] 29.IV.1989, V. Komarov, 2) *Chaetocnema obesa* (Boieldieu), det. A. S. Konstantinov, 2009 (3 USNM); 1) Russia, Krasnodar reg., Taman' Pen. env. of Temryuk,

Military Hill, 31.V.1999, leg. A. Konstantinov, 2) *Chaetocnema obesa* (Boield.), A. Baselga 2009 (5 USNM); 1) Taman' Karabetova gora, swamp, 22.V.1980, Ohrimenko N., 2) *Eleocharis palustris*, 3) *Chaetocnema obesa* (Boieldieu), det. A. S. Konstantinov, 2009 (1 USNM); SERBIA: 1) Serbia: C. Schwarz, 2) *Chaetocnema obesa*, Heikertinger det. (1 NHMW); SPAIN: 1) Cuenca, P. Cubillo-Tragacete, 28-IX-1997, leg. Baselga, 2) *Chaetocnema obesa* (Boield.), Baselga det. (8 BASC); 1) Granada, La Sagra, 2) *Chaetocnema obesa* (Boield.), Baselga det. (3 MNCN); 1) Madrid, 2) *Chaetocnema obesa* (Boield.), Baselga det. (2 MNCN); 1) Madrid, Escorial, 2) *Chaetocnema obesa* (Boield.), Baselga det. (7 MNCN); 1) Madrid, Navacerada, 2) *Chaetocnema obesa* (Boield.), Baselga det. (1 MNCN); 1) Madrid, Villaviciosa de Odón, 2) *Chaetocnema obesa* (Boield.), Baselga det. (3 MNCN); 1) Salamanca, Cerezal de Peñahorcada, 19-VI-2001, leg. Baselga, 2) *Chaetocnema obesa* (Boield.), Baselga det. (1 BASC); 1) Salamanca, Masueco, 19-VI-2001, leg. Baselga, 2) *Chaetocnema obesa* (Boield.), Baselga det. (1 BASC); 1) San Basilio, Murgien, leg. Paganetti, 2) *Chaetocn. meridionalis* Boield., Heik. det, 3) *Chaetocnema obesa* Boield., det. I. Lopatin, 1995 (1 USNM); 1) Zamora, Badilla, 18-VI-2001, leg. Baselga, 2) *Chaetocnema obesa* (Boield.), Baselga det. (5 BASC); TURKEY: 1) Ugurla (Konya), May 17, 1998, leg. B. et M. Bergeal (14 BCPF); 1) N. E. Turkey: 35-40 km NW Erzurum, Dumlu-Dagi, 2200-2500 m, 14.VI.1998 leg. B. Kataev & A. Solodovnikov (3 USNM); 1) Turkey. 5 km N Askale, 07.VI.1999, pass 1500 m, fields along river, leg. A. Konstantinov (6 USNM); 1) Turkey. 8 km S Askale, 07.VI.1999, pass 1600 m, 39°56'79N 40°45'88E, leg. A. Konstantinov (2 USNM); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov (2 USNM); 1) Turkey: Cappadocia, env. Urgüp, Mustafapasha, 16.VI.1999, dry swamp, leg. A. Konstantinov (1 USNM); 1) N. E. Turkey: 35-40 km NW Erzurum, Dumlu-Dagi, 2500-2900 m, 15.VI.1998 leg. B. Kataev & A. Solodovnikov, 2) *Chaetocnema obesa* (Boield.), A. Baselga 2009 (1 USNM); 1) Turkey. Env. of Aksaray 8km S Ciftlik, 39°27'N 33°46'E, 17.VI.1999, 1700 m, leg. A. Konstantinov, 2) *Chaetocnema obesa* (Boield.), A. Baselga 2009 (1 USNM); 1) Turkey: 8 km S. Ciftlik (between Nigde & Aksaray), on Melendiz Dagi Range, 1500-2000 m: June 17, 1999, Steve Lingafelter, Coll., 2) *Chaetocnema obesa* (Boield.), A. Baselga 2009 (2 USNM); UKRAINE: 1) Askania-Nova, Tesgua Rossms. S. Medvedev 92 (1 USNM).

***Chaetocnema oblonga* Lopatin**

Fig. 59, Map 53

oblonga Lopatin 1990:606 (type locality: "South Iran, Fars Province, Mt. Zagros, near Lasui and Karun"; type depository: NMPC)

Distribution: Iran (Lopatin 1990).

Host plants: unknown.

Description: Body length (excluding head) 2.02–2.10 mm; width 1.13–1.24 mm. Ratio of elytron length at suture to maximum width, 2.75–3.00. Ratio of pronotum

width at base to length at middle, 1.44–1.56. Ratio of length of elytron at suture to length of pronotum at middle, 2.50–2.53. Ratio of width of both elytra at base to width of pronotum at base, 1.04–1.05. Ratio of maximum width of both elytra to maximum width of pronotum, 1.25–1.32.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Protibia partly brown. Meso-, metatibia yellow. Pro-, mesofemur light brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.31–1.34. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus poorly developed.

First male protarsomere length to width ratio, 1.43–1.47. First and second male protarsomere length to length ratio, 1.31–1.36. First and second male protarsomeres width to width ratio, 1.30–1.35. Length of metatibia to distance between denticle and metatibial apex 2.57–2.61. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.31–2.34. First male protarsomere maximum width to width at base ratio, 2.38–2.40. First and second male metatarsomere length to length ratio, 1.22–1.27. First and second male metatarsomere width to width ratio, 1.03–1.08. Third and fourth male metatarsomere length to length ratio, 2.19–2.22.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening compared to width just before apical declivity smaller. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove flat, horizontal apically and at middle; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; well-developed, with obtuse margins in basal half. Apical and middle part of longitudinal groove subequal and narrower than basal. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated,

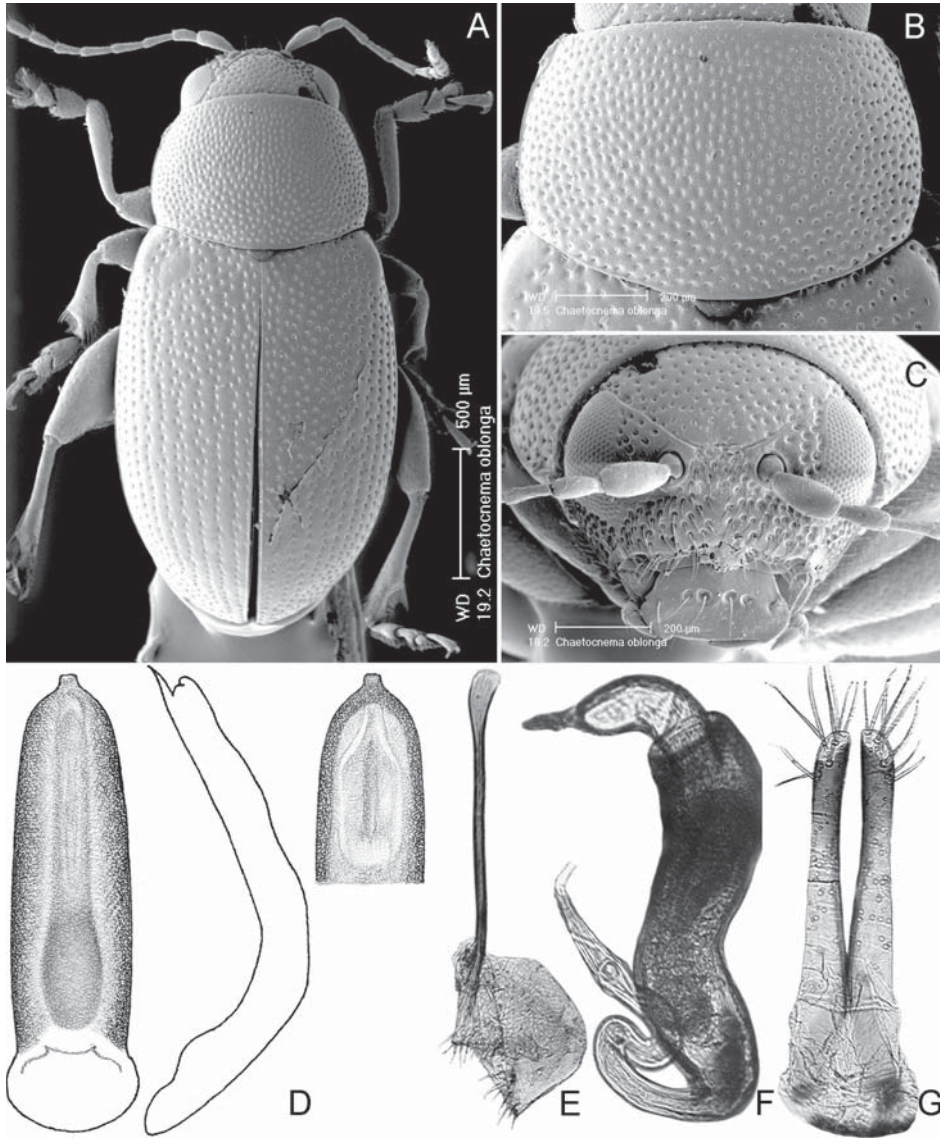
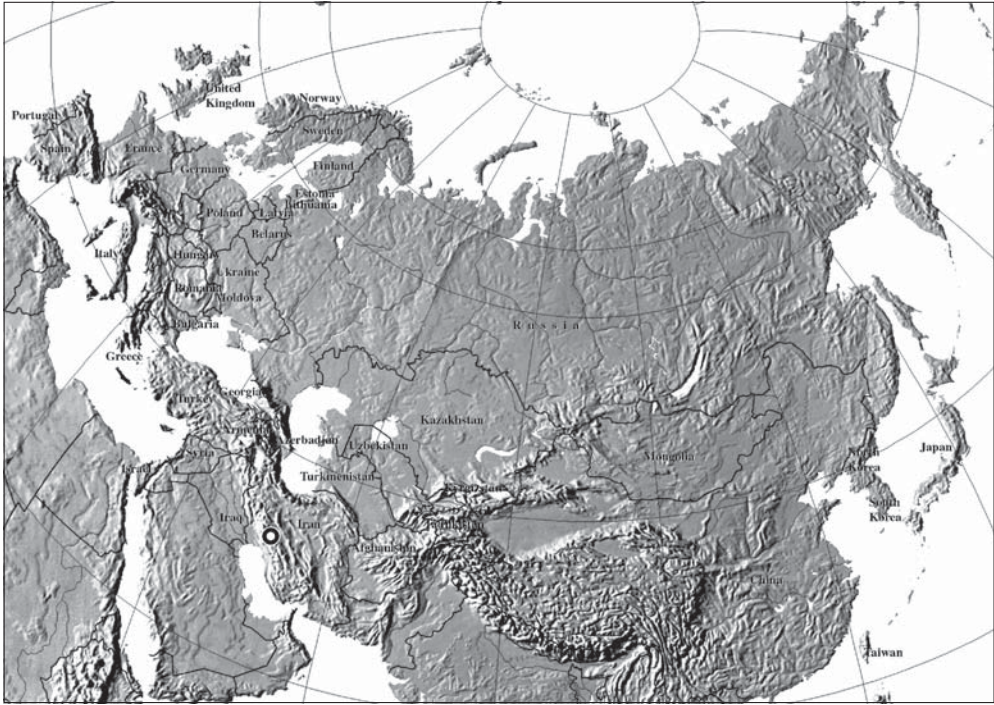


Figure 59. *Chaetocnema oblonga*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

tall, wide, flat on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view abruptly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached



Map 53. *Chaetocnema oblonga*

to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: *Chaetocnema oblonga* is similar to *C. hortensis* in various features including confused punctures on the elytra disc. It can be separated from *C. hortensis* by the ventral groove of the aedeagus being wider basally than apically (it is about as wide basally as apically in *C. hortensis*), by the ventrally bent apex of the aedeagus in lateral view (it is straight in *C. hortensis*) and by the generally more slender body.

Type material: *Chaetocnema oblonga*: Paratypes males and females: 1) S Iran, 29 km, E Yasuj, 2300 m, 16-17.6.1973, 2) Loc no. 245, Exp. Nat. Mus Praha, 3) Paratypus, 4) *Chaetocnema oblonga* sp. n., det. I. Lopatin, 1988 (10 USNM).

***Chaetocnema orientalis* (Bauduér)**

Fig. 60, Map 54

orientalis Bauduér 1874:clxii (type locality: Asian Turkey, "Mersina"; type depository: MNHN; lectotype designated here); as *Plectroscelis*

Distribution: Bulgaria (Gruev 1992), Georgia (Lopatin 1977b), Greece (Gruev 1990a), Iran (Rapilly 1978), Israel (Furth 1985), Jordan, Macedonia (Gruev 1992), Romania (Gruev et al. 1993), Syria (Heikertinger 1951), Turkey (Gruev 1992), Turkmenistan.

Host plants: *Cyperus longus*, *C. papyrus*, *Cyperus* sp. (Furth 1985); *Hordeum vulgare*, *Psidium guajava*, *Azadirachta indica* (Pollard 1956).

Description: Body length (excluding head) 1.43–1.96 mm; width 0.89–1.10 mm. Ratio of elytron length at suture to maximum width, 2.40–2.84. Ratio of pronotum width at base to length at middle, 1.73–1.78. Ratio of length of elytron at suture to length of pronotum at middle, 2.67–2.72. Ratio of width of both elytra at base to width of pronotum at base, 1.08–1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.26–1.34.

Elytron yellow with dark stripe along suture, occupying at least three interspaces near base. Pronotum bronzy. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight to shallowly retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.30–2.41. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 6–10 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.46–1.50. First and second male protarsomere length to length ratio, 1.50–1.61. First and second male protarsomeres width to width ratio, 1.06–1.07. Length of metatibia to distance between denticle and metatibial apex 2.42–2.49. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle

convex in dorsal view. First male metatarsomere length to width ratio, 2.50–2.70. First male protarsomere maximum width to width at base ratio, 1.58–1.62. First and second male metatarsomere length to length ratio, 1.70–1.80. First and second male metatarsomere width to width ratio, 1.00–1.03. Third and fourth male metatarsomere length to length ratio, 1.39–1.43.

Apical third of aedeagus narrowing. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; poorly developed, shallow, with obtuse margins or absent in middle and basal half. Apical part of longitudinal groove wider than or as wide as basal. Middle part narrower than or as wide as apical. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view sinusoidal near apex with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum slightly curved. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema orientalis* is similar to *C. conducta*, *C. depressa*, and *C. nebulosa* in having yellow on the elytra. It can be separated from all three species by the aedeagus having a very shallow ventral groove without sharp margins that is present along its entire length. In *C. orientalis* the groove is much wider than the distance between the groove and lateral margin.

Type material: *Chaetocnema orientalis*: Lectotype female: 1) type, 2) Museum Paris, Coll. M. Pic, 3) *orientalis* Bauduer, type, Syrie, 4) lectotype, 5) Lectotype *Chaetocnema orientalis* Bauduer des. Konstantinov & Lingafelter, 2003 (MNHN).

Material: GEORGIA: 1) Pitsunda, 31.VII.1983, Konstantinov A. (2 USNM); 1) Gagry mys Pitsunda, 22.V.1955, 2) *Chaetocnema orientalis* Baud., A Lubischew det (1 ZMAS); GREECE: 1) Argostoli Cephalonia, 2) Moczarshi, 3) [small blue-green label], 4) *orientalis*, Penispräp, 5) *orientalis*, det. Heiktgr., 6) 1953 Coll. Heikertinger (1 NHMB); 1) Corfu, Paganetti, coll. Dr. J. Fodor, 2) *Chaetocnema orientalis*, Gruev det. (1 ZSMC);

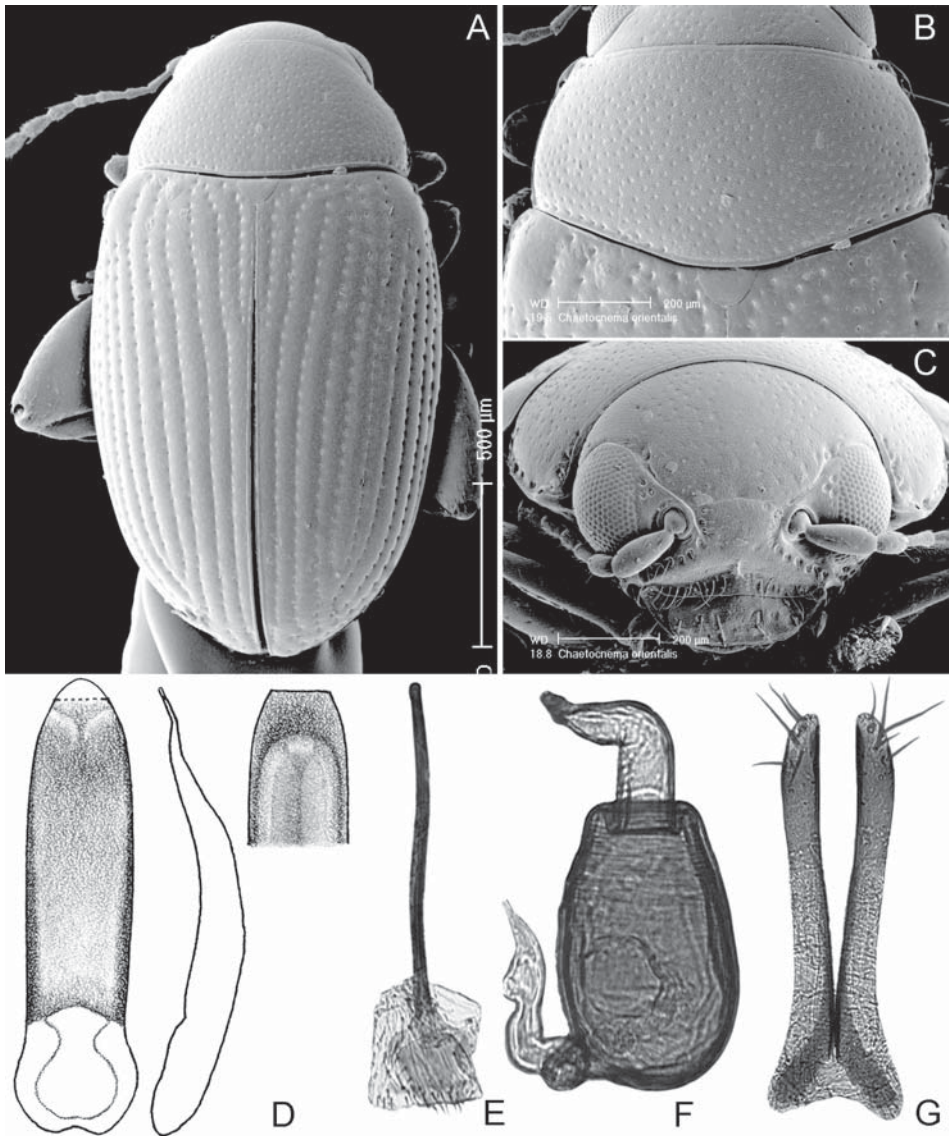
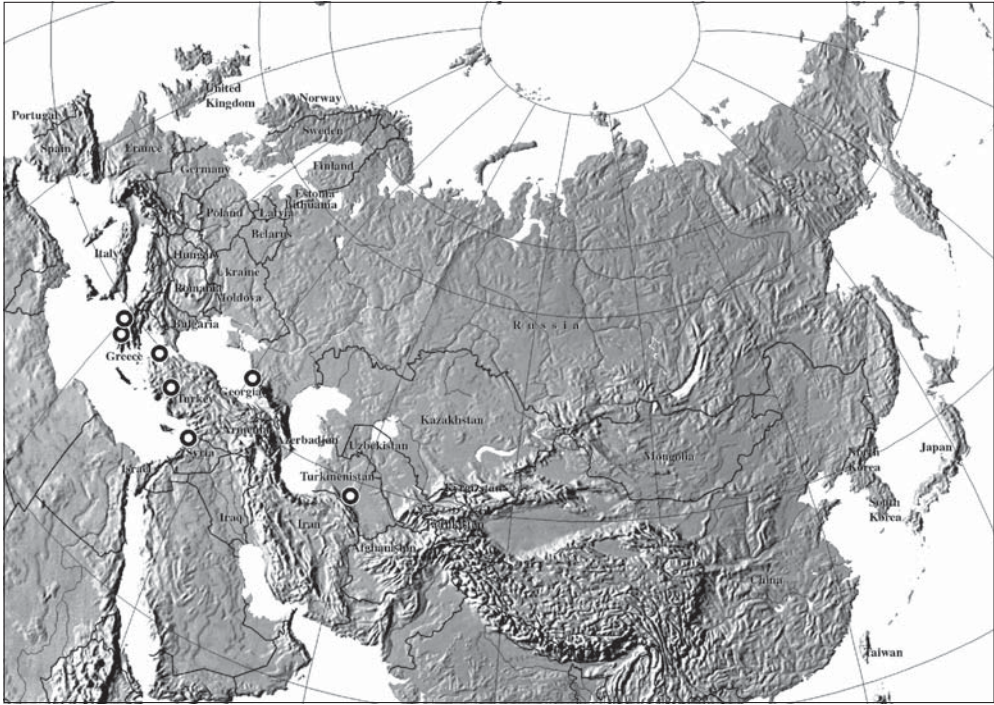


Figure 60. *Chaetocnema orientalis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

TURKEY: 1) Besika Bay (2 BMNH); 1) TR- Beysehir Gölü, Rive Sud, Beysehir, 1222 m, B. & M. Bergeal, 17 V 1998, 2) *Chaetocnema orientalis* Bauduer, M. Bergeal det. 1998, 3) collbergealversailles, 4) *orientalis*, 5) *Chaetocnema orientalis* (Baud.), No. 88 (1 BCPF); TURKMENISTAN: 1) Turkmenia, 25 km E. Kaliniskii, M. Maksimenkov, 10.X.90, 2) *Chaetocnema orientalis* (Motsch.), det. A. S. Konstantinov, 2009 (4 USNM).



Map 54. *Chaetocnema orientalis*

Chaetocnema paganettii Heikertinger

Fig. 61, Map 55

paganettii Heikertinger 1913:143 (type locality: Spain, "Hisp. sept.", "Astorga"; type depository: NHMB; lectotype designated by Bechyné 1956:583)

Distribution: Algeria, Morocco (Jolivet 1967), Portugal, Spain (Heikertinger 1913).

Host plants: unknown.

Description: Body length (excluding head) 2.10–2.16 mm; width 1.08–1.22 mm. Ratio of elytron length at suture to maximum width, 2.34–2.50. Ratio of pronotum width at base to length at middle, 1.39–1.41. Ratio of length of elytron at suture to length of pronotum at middle, 2.58–2.70. Ratio of width of both elytra at base to width of pronotum at base, 1.05–1.08. Ratio of maximum width of both elytra to maximum width of pronotum, 1.26–1.33.

Elytron bronzish without yellow or greenish without yellow. Pronotum bronzish or greenish. Antennomere 1–2 partly dark brown, rarely completely yellow. Antennomere 3–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus absent. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.44–1.55. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through fifth rows of punctures on elytron base confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.27–1.31. First and second male protarsomere length to length ratio, 1.83–1.85. First and second male protarsomeres width to width ratio, 1.41–1.44. Length of metatibia to distance between denticle and metatibial apex 2.33–2.39. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.94–1.96. First male protarsomere maximum width to width at base ratio, 3.18–3.27. First and second male metatarsomere length to length ratio, 1.69–1.70. First and second male metatarsomere width to width ratio, 1.12–1.14. Third and fourth male metatarsomere length to length ratio, 1.75–1.79.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; flat, horizontal in middle; basally convex. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; well-developed with obtuse margins in basal half. Apical part of longitudinal groove as wide as or wider than basal; middle part as wide as apical. Width of longitudinal groove at middle subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, short, flat on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle

of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum strongly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema paganettii* can be separated from most Palearctic species by an unusual ventral groove of the aedeagus that is narrow at the base, widening apically, and narrowing again well before the apex. In addition, the apex of the aedeagus is bent ventrally in lateral view.

Type material: *Chaetocnema paganettii*: Lectotype male: 1) Astorga, Paganetti, 2) Chaetocn. Paganettii m., det. Heiktgr., 3) Chaet. Paganettii, Type! [red label], 4) 1953 Coll. Heikertinger, 5) lectotype, J. Bechyné det., 1956 (1 NHMB); Paralectotype female 1) Manzanal, Paganetti, 2) Chaetocn. Paganettii m., det. Heiktgr., 3) Chaet. Paganettii, Type! [red label], 4) 1953 Coll. Heikertinger (1 NHMB); Paralectotype male: 1) Palencia, Paganetti, 2) [small blue label], 3) Paganettii m., det. Heikerting., 4) Paganettii m., Cotypus, 5) 1953 Coll. Heikertinger (1 NHMB).

Material: PORTUGAL: 1) Braganza, VIII-1958, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); SPAIN: 1) Albacete, Molinicos, Cañada de Morote, 30-VI-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (2 MNCN); 1) Albacete, Riopar, Mesones, 30-VI-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (5 MNCN); 1) Albacete, Vianos, Puerto de barrancazo, 1-VII-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Ávila, Gredos, VIII-1907, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Cuenca, P. Cubillo-Tragacete, 28-IX-1997, leg. Baselga, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 BASC); 1) Espagne (Burgos), 11 VII 2003, Pineda de la Sierra, B. & M. Bergeal leg., 2) *Chaetocnema paganetti* Heikertinger, M. Bergeal det. 2003 (1 USNM); 1) Granada, Sierra Nevada, 2) *Chaetocnema paganettii* Hktr., Baselga det. (2 MNCN); 1) Huesca, Hecho, 9-VIII-1989, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Huesca, Panticosa, 2) *Chaetocnema paganettii* Hktr., Baselga det. (2 MNCN); 1) Jaén, Santa Elena, 2) *Chaetocnema paganettii* Hktr., Baselga det. (2 MNCN); 1) León, Burgos de Fenar, 23-VII-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (3 MNCN); 1) León, Manzanal (COTYPUS), 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Madrid, Canencia, 18-26-VI-1986, 2) *Chaetocnema paganettii* Hktr., Baselga det. (35 MNCN); 1) Madrid, Cercedilla, 2) *Chaetocnema paganettii* Hktr., Baselga det. (2 MNCN); 1) Madrid, Villaviciosa de Odón, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Palencia, Alto de las Portillas, 26-VII-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Palencia, Cardaño de Arriba, 26-VII-1994, 2) *Chaetocnema paganettii* Hktr., Baselga det. (1 MNCN); 1) Segovia,

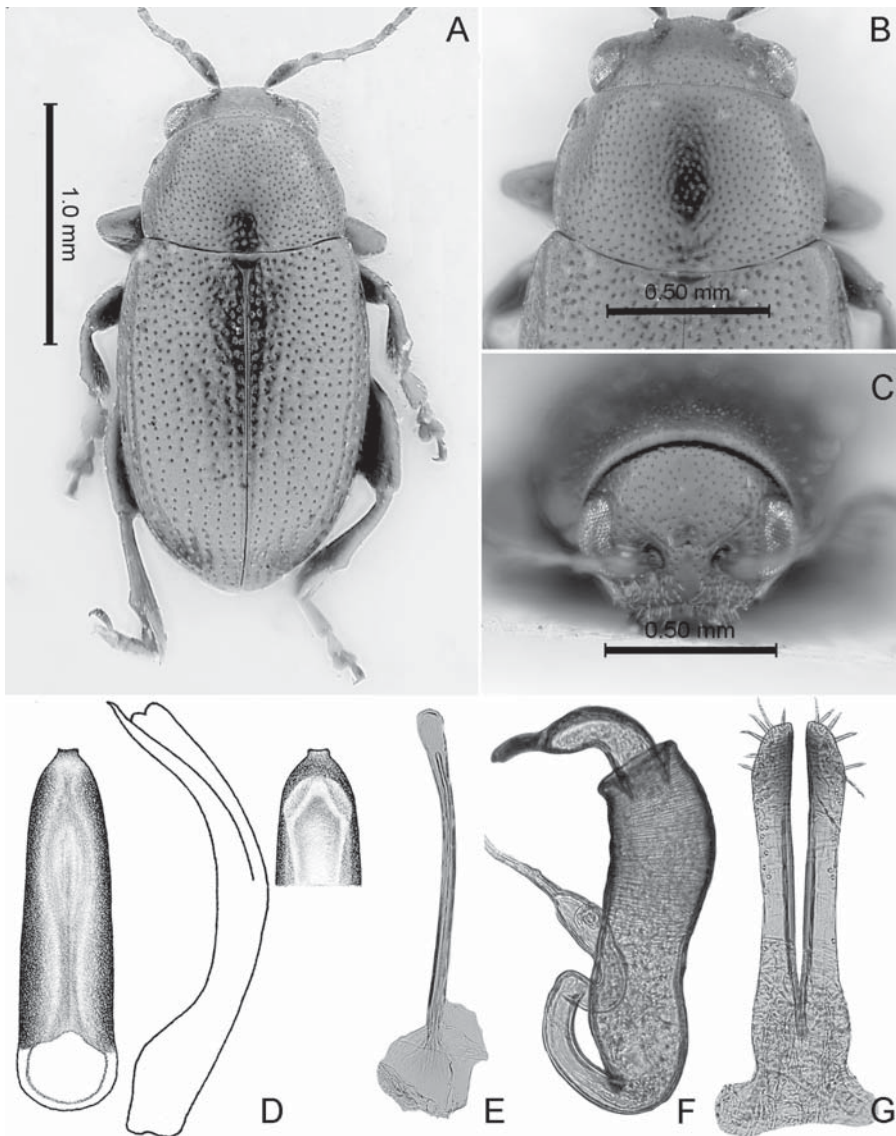
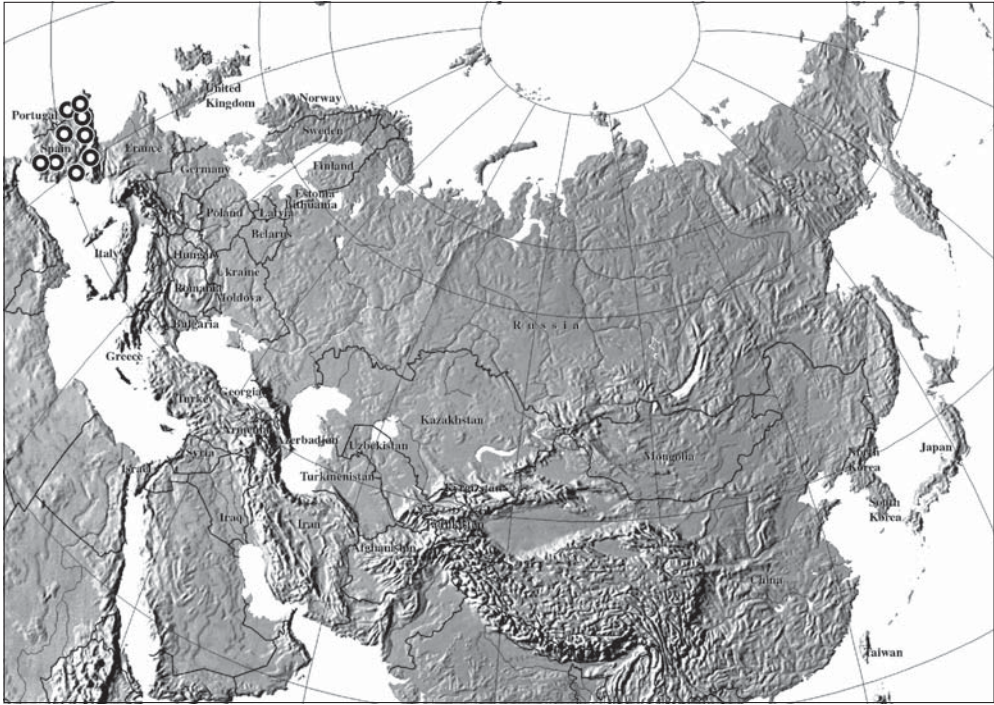


Figure 61. *Chaetocnema paganettii*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

via, Valsain, 15-IX-1931, 2) *Chaetocnema paganettii* Hktr., Baselga det. (3 MNCN); 1) Valencia, Llosa de Ranes, 2) *Chaetocnema paganettii* Hktr., Baselga det. (7 MNCN); 1) Cobayo. 16.VII.69, Peña Trevinca, Orense. ESP, 2) Doguet, 3) *Chaetocnema paganetti* Heikertinger, S. Doguet det., 4) collbergealversailles (1 BCPF); 1) Espagne (Burgos), S. Demanda, 11 VII 2003, Pineda de la Sierra, B. & M. Bergeal leg., 2) *Chaetocnema*



Map 55. *Chaetocnema paganettii*

paganetti Heikertinger, M. Bergeal det. 2003, 3) *Chaetocnema paganetti* Heik., det. A. S. Konstantinov, 2009 (1 USNM); 1) Espagne (Leon) 7 VII 2003, Puerto de San Glorio, B. & M. Bergeal leg., 2) *Chaetocnema paganetti* Heikertinger, M. Bergeal det. 2003 (1 USNM); 1) SP (Burgos) Sierra Demanda, Pineda de la Sierra, 11 VII 2003, B. & M. Bergeal leg., 2) *Chaetocnema paganetti* Heikertinger, M. Bergeal det. 2003 (1 USNM).

***Chaetocnema pelagica* Caillol, new status**

Fig. 62, Map 56

pelagica Caillol 1924:505 (as variety of *chlorophana*; type locality: France, Provence-Alpes-Côte d'Azur; type depository: MNHN); Heikertinger 1951:210 (treated as a subspecies)

Distribution: Algeria, France (Caillol 1924), Italy, Portugal, Spain.

Host plants: unknown.

Description: Body length (excluding head) 2.44–2.94 mm; width 1.35–1.62 mm. Ratio of elytron length at suture to maximum width, 2.67–2.69. Ratio of pronotum width at base to length at middle, 1.75–1.77. Ratio of length of elytron at suture to

length of pronotum at middle, 3.27–3.29. Ratio of width of both elytra at base to width of pronotum at base, 1.06–1.09. Ratio of maximum width of both elytra to maximum width of pronotum, 1.20–1.29.

Elytron greenish without yellow, rarely copperish without yellow. Pronotum greenish, rarely copperish. Antennomere 1–4 completely yellow. Antennomere 5 completely yellow, rarely partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, shallow in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.85–0.87. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.18–1.22. First and second male protarsomere length to length ratio, 1.18–1.22. First and second male protarsomeres width to width ratio, 1.13–1.17. Length of metatibia to distance between denticle and metatibial apex 2.32–2.36. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.29–2.33. First male protarsomere maximum width to width at base ratio, 2.14–2.18. First and second male metatarsomere length to length ratio, 1.51–1.55. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.25–1.33.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus absent; poorly developed with obtuse margins in basal half. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus

in ventral view well-differentiated, tall, rounded on top; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to side of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization sharply curved at apex with anterior end acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: The original description of *C. pelagica* (Caillol 1924) mentions a long list of localities in Provence-Alpes-Côte d'Azur. Which one of them is the type locality is unclear. As was recently indicated (Döberl 2009), the date of publication of *C. pelagica* is 1924. The name was proposed as a variety of *C. chlorophana* (Caillol 1924) and Heikertinger (1951) later treated it as a subspecies. We here elevate it to a species status based on the following characters: the sides of the pronotum are more convex than in *C. chlorophana*; the frontal ridge is wider than in *C. chlorophana*; the ventral groove of the aedeagus extends further from the base towards the apex.

Material: ALGERIA: 1) Amoucha Setif, April 20, 1987, leg. M. Bergeal (6 BCPF); 1) Azazga, Kabylie (1 BMNH); 1) Gouraya (1 BCPF); 1) Oued Mafrag, Annaba (Algeria) M. Bergeal 6.IV.1985, 2) *chlorophana pelagica* Caillol (21 BCPF); 1) Port. Kab. Texenna, April 7, 1979, leg. S. Doguet (1 BCPF); FRANCE: 1) Gallia mer. occ, Env. Bordeaux, J. Bechyné legit, 2) *Ch. pelagica*, I. K. Lopatin det. 196 (1 USNM); 1) Hyeres (2 BMNH); 1) Hyeres, 5 November 1903 (1 BCPF); 1) les Mayons, St. Aygulf, May 13, 1988, leg. M. Bergeal (8 BCPF); 1) Pierrefeu, May 16, 1988, leg. M. Bergeal (1 BCPF); ITALY: 1) Calabria, Antonimina, 1905, coll. Dr. Fodor, 2) *Chaetocnema chlorophana*, Gruév det. (1 ZSMC); 1) Italie, Col. Madar, 2) Roma, 12.4.1959, lgt. Mercati, 3) *chlorophana pelagica* Caill., Det. Ing. Dr. Madar, 4) pencil id label, *Chaetocnema pelagica* Cajl., No. 70 (2 USNM); 1) San Basilio Murgien, leg. Paganetti, coll. Dr. J. Fodor, 2) *Chaetocnema chlorophana*, Gruév det. (1 ZSMC); 1) Sicily (5 BMNH); MOROCCO: 1) 1 km NE Asne (beside R. Reraia), April 21, 1961, leg. P. N. Lawrence (6 BMNH); 1) Bensus Bay, leg. J. Walker (1 BMNH); 1) no specific data, leg. H. Vaucher (1 BCPF); 1) Tangier (3 BMNH); 1) Tetuan, leg. J. Walker (1 BMNH); PORTUGAL: 1) Beira Baixa, Serra de Estrela: Road Belmonte-Sabugal, April 30, 1996, leg. M. Bergeal (11 BCPF); 1) Braganza, VIII-1958, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (46 MNCN); 1) Lusit. 1910, Lissabon, 2) A. Schalzmayer, coll. Leonhard (1 USNM); 1)

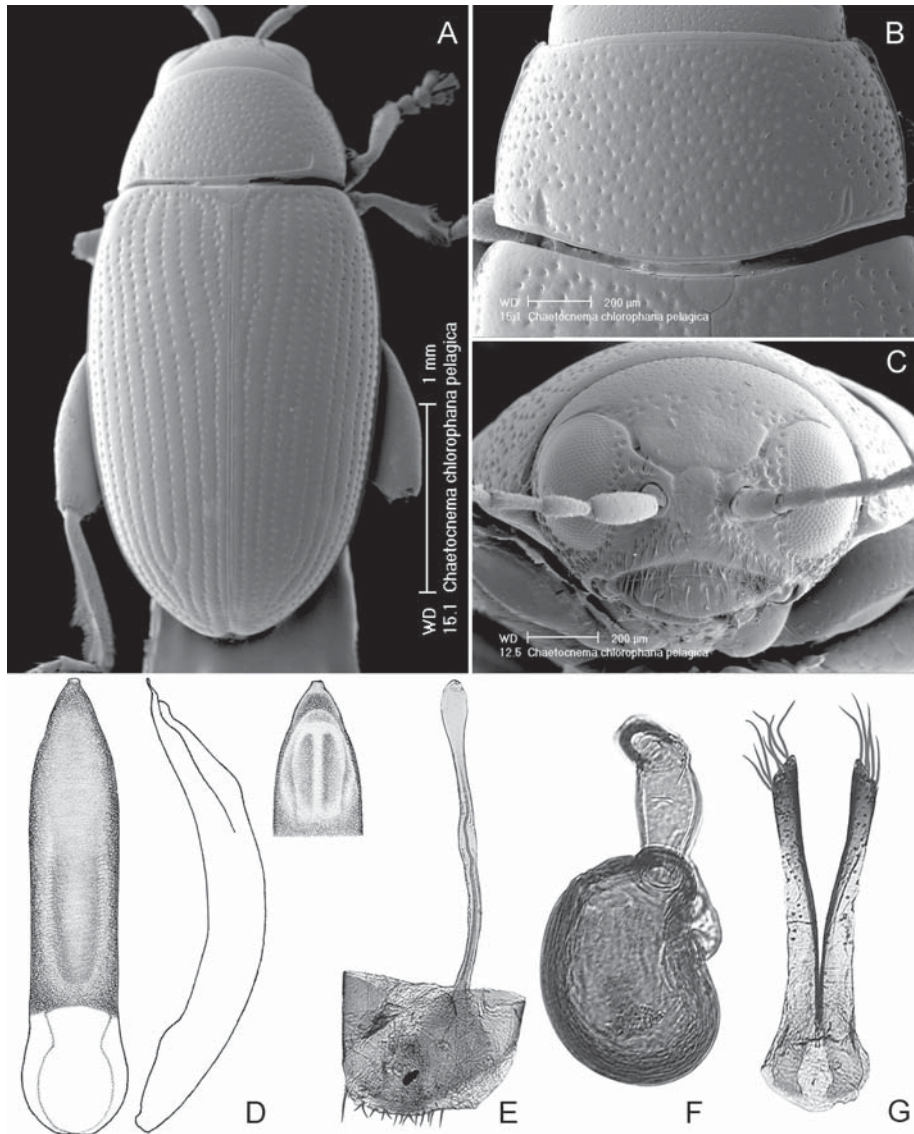
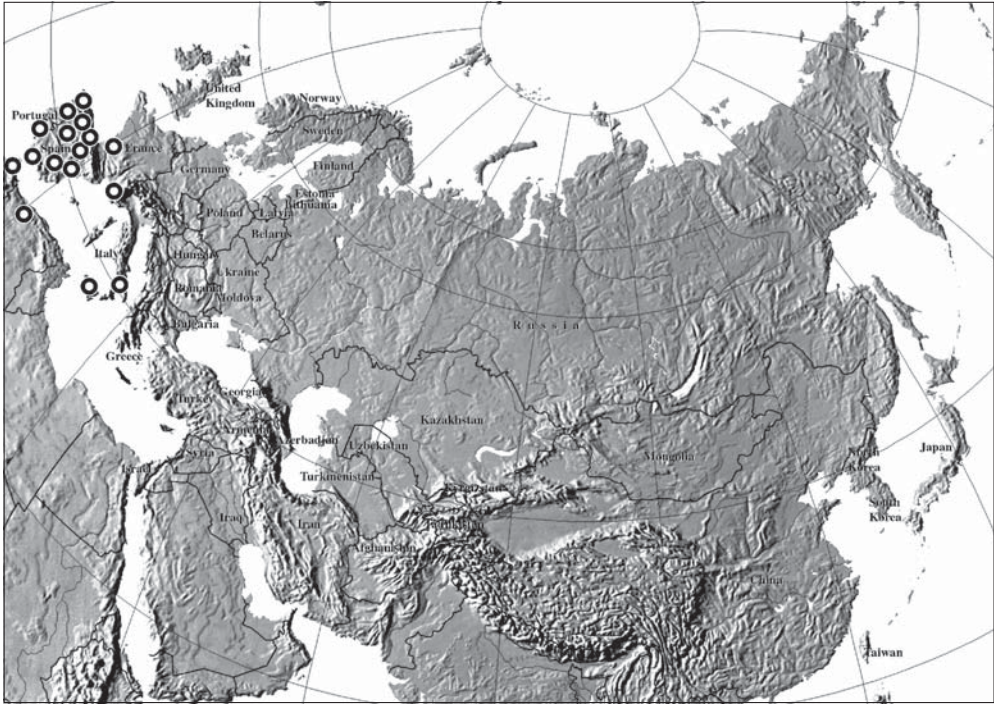


Figure 62. *Chaetocnema pelagica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Minho, Afife, 19-IX-1998, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (3 BASC); SPAIN: 1) A Coruña, Corrubedo, Vixán, 04-X-1997, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) A Coruña, Culleredo, Rutis, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) A Coruña, Culleredo, Rutis, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (15 MNCN); 1) A Coruña,



Map 56. *Chaetocnema pelagica*

Dodro, 30-VIII-1996, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (5 BASC); 1) A Coruña, Oleiros, Nos, 07-XII-1996, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) A Coruña, Traba, 08-II-1998, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (2 BASC); 1) A Coruña, Traba, 25-IV-1998, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) Albacete, Sierra de Segura, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Albacete, Sierra de Segura, Molinicos, El Pardo, VI-1903, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Ávila, Poyales, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Barcelona, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Cáceres, Alcuéscar, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Cadiz, ? Algeciras Andalusien, C. Strobl. 17.IV., 2) *Chaetocnema chlorophana*, Heikertinger det. (5 NHMW); 1) Cadiz, Algeciras, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Cadiz, Algeciras, 6-VI-1895, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (4 MNCN); 1) Cantabria, Reinosa, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Cantabria, San Vicente de la Barquera, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Ciudad Real, Almodóvar del Campo, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Ciudad Real, Fuencaliente, 2) *Chaetocnema chlorophana*

(Duft.), Baselga det. (1 MNCN); 1) Ciudad Real, Manzanares, VI-1909, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (4 MNCN); 1) Cuenca, Cañizares, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (6 MNCN); 1) Cuenca, Tragacete, VII-1906, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Gibraltar, leg. J. Walker (6 BMNH); 1) Granada, May, 1856, leg. Clark (1 BMNH); 1) Granada, Guadix, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (3 MNCN); 1) Granada, La Sagra, 1900, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) N. slope Veleta, Sierra Nevada, Spain 2550 m, 2) 20.VII-1960, J. R. Vockeroth, 3) *Chaetocnema chlorophana pelagica* Cail., Det. B. Gruev '87 (3 USNM); 1) Granada, N. slope Veleta Sierra Nevada, 2550 m, 30.VII.1960, J.R.Vockeroth, 2) *Chaetocnema chlorophana*, Gruev det. (2 ZSMC); 1) Guadalajara, Azañón, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Guadalajara, Humanes, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Guipuzcoa, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Huelva, La Palma [del Condado], 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (4 MNCN); 1) Huelva, Las Marismas: El Rosio (3 m.), July 22, 1979, leg. W. Schacht (1 BCPF); 1) Huelva, Las Marismas: Rio Oraque Bei (500 m), April 20, 1980, leg. W. Schacht (1 BCPF); 1) Huesca, Barbastro, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Jaén, Despeñaperros, VI-1909, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Jaén, Santa Elena, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Lugo, O Incio, Toldaos, 22-VIII-1999, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (13 BASC); 1) Madrid, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Madrid, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (4 MNCN); 1) Madrid, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (8 MNCN); 1) Madrid, Canal, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (10 MNCN); 1) Madrid, El Pardo, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Madrid, El Pardo, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (4 MNCN); 1) Madrid, El Pardo, IX-1903, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Madrid, Escorial, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (30 MNCN); 1) Madrid, Madrid, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (3 MNCN); 1) Madrid, Navacerrada, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Madrid, Torrelaguna, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Madrid, Villaverde, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Malaga-Ardales, Embidel Conde, April 20, 1996, leg. M. Bergeal (16 BCPF); 1) Mallorca, Palma de Mallorca, 26-X-1958, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Murcia, Cartagena, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Murcia, Sierra de Almenara, Purias, VIII-1943, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Ourense, Carballeda, Casoio, 30-IX-1997, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (3 BASC); 1) Ourense, Monterrei, Requeixo, 06-IV-1993, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (3 BASC); 1) Ourense, O Bolo, As Ermitas, 04-IV-1993, leg. Basel-

ga, 2) *Chaetocnema pelagica* Caill., Baselga det. (8 BASC); 1) Pontevedra, A Estrada, 14-VIII-1996, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (8 BASC); 1) Pontevedra, Cuntis, 14-IX-1996, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) Pontevedra, Gándaras de Budiño, 09-V-1999, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (2 BASC); 1) Pontevedra, Ponte Ulla, 07-IX-1997, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (2 BASC); 1) [Salamanca], Bejar (3 BMNH); 1) Salamanca, Ciudad Rodrigo, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Salamanca, Masueco, 19-VI-2001, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (2 BASC); 1) Salamanca, Saucelle, 19-VI-2001, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) Salamanca, Trabanca, 20-VI-2001, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) Santander (1 BMNH); 1) Teruel, VI-1929, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Toledo, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Toledo, Quero, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN); 1) Toledo, Villatobas, IX-1959, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (2 MNCN); 1) Zamora, Fermoselle, Fornillos, 18-V-1998, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (4 BASC); 1) Zamora, Fermoselle, Pinilla, 27-IV-1999, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (2 BASC); 1) Zamora, Fermoselle, Pinilla, 29-III-2000, leg. Baselga, 2) *Chaetocnema pelagica* Caill., Baselga det. (1 BASC); 1) Zaragoza, 1-IV-1902, 2) *Chaetocnema chlorophana* (Duft.), Baselga det. (1 MNCN).

***Chaetocnema picipes* Stephens**

Fig. 63, Map 57

picipes Stephens 1831:327 (type locality: England, "London" and "Bottisham, Suffolk"; type depository: BMNH; lectotype designated by Booth & Owen 1997:88)

chalceola Jacoby 1885:731 (type locality: Japan, "Hosokute"; type depository: BMNH; lectotype designated here); Heikertinger 1951:82 (synonymized with *C. concinna*)

laevicollis Thomson 1866:229 (type locality: Sweden, "Småland"; type depository: NHRS); as *Plectroscelis*; Heikertinger 1951:211 (synonymized)

nitidicollis Jacobson 1902:91 (as variety of *concinna*; type locality: Russia, "Krasnojarsk"; type depository: unknown); Heikertinger 1951:211 (synonymized)

heikertingeri Lubischev 1963:863 (type locality: not given; type depository: ZMAS); Booth & Owen 1997:88 (synonymized)

Distribution: Armenia, Austria, Azerbaijan, Belarus (Lopatin 1986), Belgium, Bulgaria (Gruev 1992), China (Gruev & Döberl 1997), Czech Republic, Estonia, Finland, France (Doguet 1994), Georgia, Germany (Arnold 1991), Hungary (Vig 1996), Iran, Italy (Biondi 1990a), Japan, Kazakhstan, Kyrgyzstan, Korea (Gruev 1990b), Latvia, Liechtenstein, Lithu-

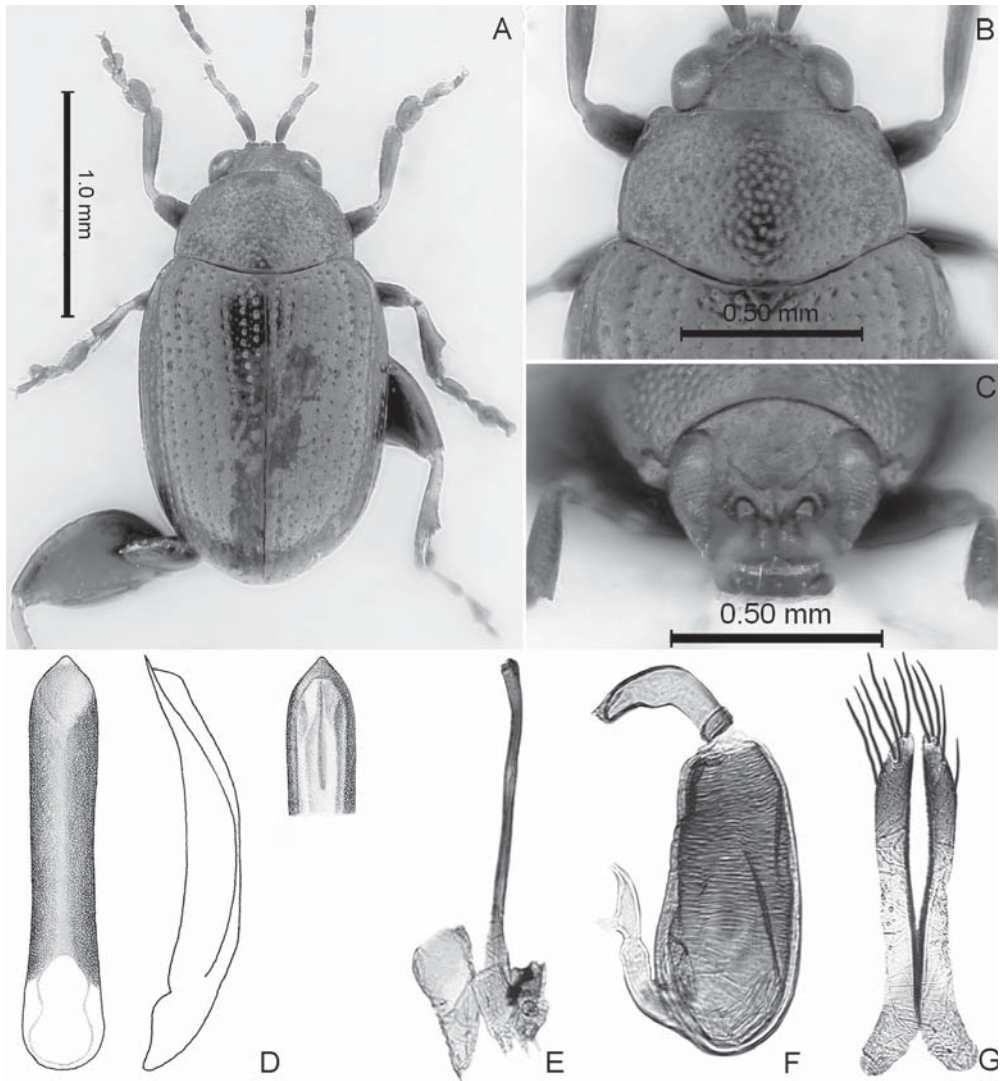
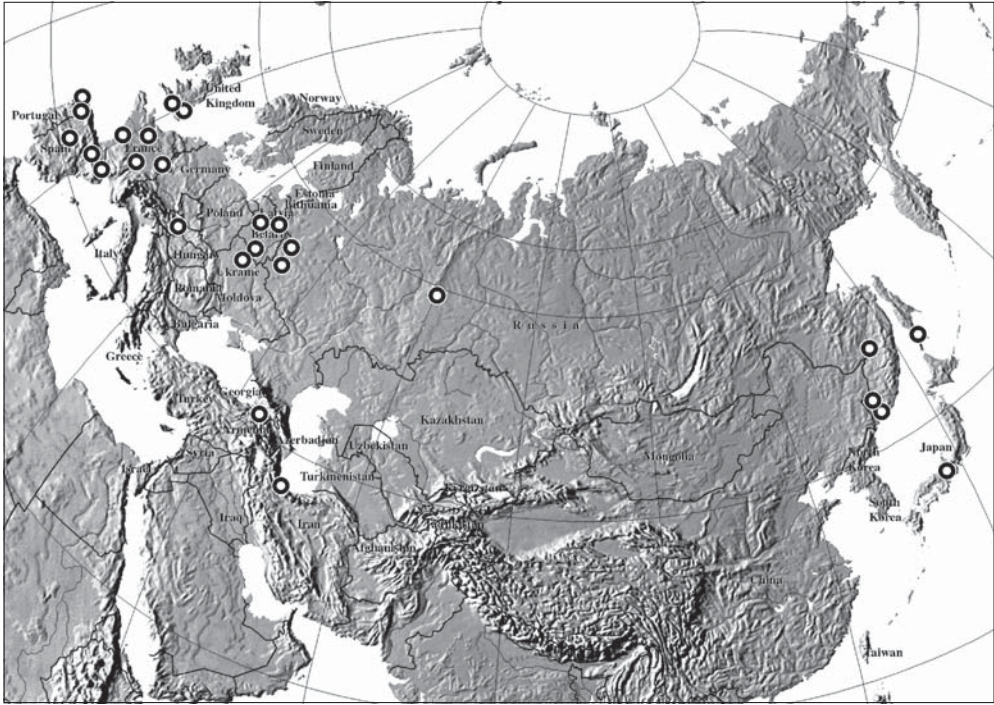


Figure 63. *Chaetocnema picipes*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

ania, Luxembourg, Mongolia, Netherlands, Norway, Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (European part, Caucasus) (Konstantinov 1988), (Buryatia, Tuva, Krasnoyarsk, Primorsky Kray) (Gruev & Döberl 1997), Slovakia, Spain (Bastazo et al. 1993), Sweden (Marseul 1875), Switzerland, Ukraine, United Kingdom (Booth & Owen 1997).

Host plants: *Polygonum persicaria*, *P. aviculare*, *Brassica rapa* (Fogato & Leonardi 1980); Polygonaceae, Cruciferae (Biondi 1990a).



Map 57. *Chaetocnema picipes*

Description: Body length (excluding head) 2.03–2.10 mm; width 1.12–1.13 mm. Ratio of elytron length at suture to maximum width, 2.41–2.49. Ratio of pronotum width at base to length at middle, 1.67–1.68. Ratio of length of elytron at suture to length of pronotum at middle, 2.92–3.01. Ratio of width of both elytra at base to width of pronotum at base, 1.09–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.40–1.41.

Elytron bronzish without yellow, rarely greenish without yellow. Pronotum bronzish, rarely greenish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint or deep laterally, shallow in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.99–1.02. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum

absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.63–1.68. First and second male protarsomere length to length ratio, 2.00–2.06. First and second male protarsomeres width to width ratio, 1.55–1.59. Length of metatibia to distance between denticle and metatibial apex 2.50–2.58. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.01–3.12. First male protarsomere maximum width to width at base ratio, 2.58–2.64. First and second male metatarsomere length to length ratio, 1.87–1.89. First and second male metatarsomere width to width ratio, 0.98–1.04. Third and fourth male metatarsomere length to length ratio, 1.64–1.71.

Apical third of aedeagus widening. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides slightly arching. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: We agree with Lubischev (1963) on distinguishing characters and distribution of *C. picipes*, *C. concinna*, and *C. heptapotamica*. The main characters are the shape of the apical part of the aedeagus (parallel-sided in *C. picipes* and dilated in *C.*

concinna and *C. heptapotamica*) and the shape of the first protarsomere in males (it is much smaller in *C. heptapotamica* compare to *C. concinna* and *C. picipes*). As for the distribution, *C. picipes* is common in Europe and further east to Russian Far East and Japan. In Caucasus (Georgia) *C. picipes* and *C. concinna* occur in the same habitats. Heikertinger (1951) placed *C. chalceola* into synonymy with *C. concinna*, in our opinion it is a synonym of *C. picipes*.

Type material: *Chaetocnema heikertingeri*: Paratype male: 1) Vosges., 2) Deyrolle 900., 3) *Chaetocnema heikertingeri* Lu, A. Lubischew det, 4) Paratypus (1 ZMAS).

Chaetocnema chalceola: Lectotype male: 1) Type H. T., 2) Japan Lewis 1910-320, 3) *Chaetocnema chalceola* Jac., 4) Lectotype *Chaetocnema chalceola* Jacoby des. A. Konstantinov 2010, 5) *Chaetocnema picipes* Stephens det. A. Konstantinov 2010 (BMNH).

Material: AUSTRIA: 1) Bgld. Podersdorf, July 7, 1993, leg. M. Bergeal (1 BCPF); BELARUS: 1) Belarus: Gomel terr. Poles'e, Turov/ Khvoensk/ Khlupki. 11.VI.1987 52°04'00"N 27°44'00"E, leg. A. Pisanenko, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (3 USNM); 1) Belarus: Gomel terr. Poles'e, Turov/ Khvoensk/ Khlupki. 12.VI.1987 52°04'00"N 27°44'00"E, leg. A. Pisanenko, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (1 USNM); 1) Belarus: Gomel terr. Poles'e, Turov/ Khvoensk/ Khlupki. 15.VI.1987 52°04'00"N 27°44'00"E, leg. A. Pisanenko, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (1 USNM); 1) Belarus: Gomel terr. Turov env. 11.VI.1980 52°04'00"N 27°44'00"E, wet meadow swamp, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (4 USNM); 1) Belarus: Gomel terr. Turov env. 13.VI.1980 52°04'00"N 27°44'00"E, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (4 USNM); 1) Belarus: Gomel terr. Turov env. 14.VI.1980 52°04'00"N 27°44'00"E, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (5 USNM); 1) Belarus: Gomel terr. Turov env. 23.VI.1980 52°04'00"N 27°44'00"E, wet meadow hayfield, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (6 USNM); 1) Belarus': Minsk env. "Svalka", 9.V.1980 54°00'00"N 27°17'00"E, meliorat chanal, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (27 USNM); 1) Belarus': Minsk env. "Svalka", 9.V.1980 54°00'00"N 27°17'00"E, wet to dry meadow, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (49 USNM); 1) Belarus': Minsk env. Kryzhovka, 15.V.1977 54°00'00"N 27°17'00"E, pine forest, lake shore, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (1 USNM); 1) Belarus': Minsk env. Minskoe more, 7.IX.1980 54°00'00"N 27°17'00"E, dry meadow, swamp, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (9 USNM); 1) Belarus': Minsk env. Minskoe more, 27. IV.1983 54°00'00"N 27°17'00"E, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (3 USNM); 1) Belarus': Minsk terr. Minsk env. Rudensk, 28.V.1980 Ptich' river, meadow, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (1 USNM); 1) Belarus': Vitebsk terr. Braslav reg. Chernyshki 9.VII.1981 hills, lake env. leg. A. Konstantinov, 2) *Chaetocnema picipes* (Ste-

phens) det. A.S. Konstantinov (2 USNM); 1) Belarus': Vitebsk terr. Braslav reg. Chernyshki, Strusto lake 9.VII.1981, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (1 USNM); 1) Gomel'skaya obl. s. Turov, 9.VI.1980, meliorat. chanel, Konstantinov, 2) *Chaetocnema heikertingeri* Ljub. (1 USNM); FRANCE: 1) Coissac Bugeat, Gourdon, L'Echameil, Marais du Cerisaie, Sidiailles, Pfrungen Reid, Versailles Parc, le Longereux, St. Hilaire les C., Val de Sorgeat (1400 m), April, May, June, July, August, leg. M. Bergeal (3 BCPF); GEORGIA: 1) Georgia, 21.7.33, Ahald., Kura river, Konstantinov, 2) *Ch. heikertingeri* Lub., det. Konstantinov (1 USNM); IRAN: 1) IRAN, Prov. Ghuillan, Lahijan a. Kasp. Meer, 200 m, VII-VIII.1961, leg. J. Klapperich, 2) *Chaetocnema heikertingeri* Lub., I. K. Lopatin det. 1973 (1 USNM); RUSSIA: 1) Khabarovsk, June 1974, leg. Schimanovsk (2 BCPF); 1) Primorski Krai, July 20, 1990, leg. Boukal (3 BCPF); 1) Siberia, Ussuri Region (800m), Oblecchnaya Mt., 14-16 July 1989, leg. R. Dunds (1 BCPF); 1) Russia, Bryansk terr. Unecha, 19.VIII.1979, 52°50'39"N 31°56'03"E, leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (3 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 11.VIII.1979, Skotinino, Ugra river, 55°04'50"N 35°00'18"E leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (3 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 26.VII.1981, Skotinino, dry hill, 55°04'50"N 35°00'18"E leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (11 USNM); 1) Russia, Smolensk terr. 12 km SW Temkino 28.VII.1981, Skotinino, Ugra river dry meadow, 55°04'50"N 35°00'18"E leg. A. Konstantinov, 2) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov (6 USNM); 1) Russia: Saghalin Island, 20 km S Yuzhno-Saghalinsk, St. Aniva, 15.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (25 USNM); 1) Russia: Saghalin Island, 30 km S Vuzhno-Saghalinsk, Dachnoe, 16.VIII.1992, A. S. Konstantinov (2 USNM); 1) Russia: Saghalin Island, Nevel'sk-Gornoza-Vodsk Road, 12.VIII.1992, A. S. Konstantinov (15 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 22.VIII.1992, A. S. Konstantinov (3 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 20.VIII.1992, A. S. Konstantinov (2 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kondratenovka, 23.VIII.1992, A. S. Konstantinov (10 USNM); 1) Russia: Russian Far East, Ussurijsk Territory Kamen-Rybolov Region, Khanke Lake, 25-26.VIII.1992, A. S. Konstantinov (9 USNM); 1) Russia: Russian Far East, Ussurijsk Territory Kamen-Rybolov Region, Khanke Lake, 9.VIII.1992, A. S. Konstantinov (12 USNM); 1) Russia: Russian Far East, Ussurijsk Territory Kamen-Rybolov Region, Khanke Lake, 9.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (1 USNM); 1) Russia: Russian Far East, Ussurijsk Territory, env. Kamen-Rybolov d. Parkhomenko, 28.VIII.1992, A. S. Konstantinov (22 USNM); 1) Russia: Russian Far East, Ussurijsk Territory, env. Kamen-Rybolov d. Parkhomenko, 28.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (1 USNM); 1) Russia: Saghalin Island, Chekhov, 9.VIII.1992, A. S. Konstantinov (26 USNM); 1) Saghalin, 11.08.92, Gornozavodsk, leg. Konstantinov,

2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (18 USNM); 1) Russia: Bryansk terr., Unecha 20.VIII.1979, 52°50'31"N 31°56'03"E, leg. A. Konstantinov, 3) *Chaetocnema concinna* Marsham, det. Konstantinov, 99, 4) *Chaetocnema picipes* (Stephens) det. A.S. Konstantinov 2009 (1 USNM); 1) Russia: Sakhalin Island, env. Yuzho-Sakhalinsk, pik Chehova, 14.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (19 USNM); 1) Russia: Russian Far East, Ussurijsk Region, Ussurijsk Reserve d. Kamenushka, 24.VIII.1992, A. S. Konstantinov, 2) *Chaetocnema picipes* (Steph.), A. Baselga 2009 (22 USNM); SPAIN: 1) A Coruña, Bergondo, Fiobre, 18-VIII-1996, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Bertamiráns, 30-IV-1997, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Cecebre, 01-V-1997, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 02-V-1997, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 05-VIII-1996, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (5 BASC); 1) A Coruña, Lavacolla, 19-VI-1996, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Lavacolla, 28-V-1997, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (2 BASC); 1) A Coruña, Lavacolla, 29-IV-1997, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (4 BASC); 1) A Coruña, Monfero, Piladaleña, 11-VI-1999, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Traba, 08-II-1998, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) A Coruña, Traba, 25-IV-1998, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (3 BASC); 1) Huesca, Candanchú, Arañones, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 MNCN); 1) Lugo, Abadín, Valdeinfernos, 16-VII-2002, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Lugo, Ancares, Vilarello, 22-III-1998, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Lugo, Cospeito, 04-VII-2001, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (10 BASC); 1) Lugo, Cospeito, 26-VII-2001, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (2 BASC); 1) Lugo, O Incio, Toldaos, 22-VIII-1999, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Lugo, Portomarín, León, 12-IV-1992, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Madrid, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (2 MNCN); 1) Ourense, Baltar, 22-V-1999, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Pontevedra, Baión, 28-IX-1996, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (3 BASC); 1) Pontevedra, Fornelos de Montes, 11-VII-1999, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); 1) Pontevedra, Pontearreas, Prado, 09-V-1999, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (2 BASC); 1) Pontevedra, Rosal, Tabagón, 20-IX-1998, leg. Baselga, 2) *Chaetocnema laevicollis* (Thom.), Baselga det. (1 BASC); UKRAINE: 1) Kiev (Ukraine), September 25-29, 1988, leg. A. Schwartz (1 BCPF); UNITED KINGDOM: 1) Milford, June 8, 1915 (1 BMNH); 1) [On Specimen card:] LB [? Illegible], 2) Hildersham, CET, 1.VI.1957 [?

Illegible], 3) C. E. Tottenham Collection, B. M. 1969-77 (1 BMNH); 1) Wherwel NH, CET, 20.IV.1957, 2) C. E. Tottenham Collection, B. M. 1969-77 (1 BMNH); 1) [on card top and underside:] Male, 18 77, 2) Tilgate, Sussex., G. C. C., 3) G. C. Champion, B. M. 1964-540, 4) *Chaetocnema laevicollis* (Thoms.), det. R. G. Booth, 1997 (1 BMNH); 1) S4 Male [Topside of specimen card], Mudeford, 10.VIII.1948, CET [Underside of specimen card], 2) DATA under card, 3) C. E. Tottenham Collection, B. M. 1969-77 (1 BMNH).

***Chaetocnema procerula* (Rosenhauer)**

Fig. 64, Map 58

procerula Rosenhauer 1856:344 (type locality: Spain, Andalusia, "Algeciras, Ronda, Yunquera und Malaga"; type depository: MNHN; lectotype designated by Doguet 1989:191), as *Plectroscelis*

aenescens Weise 1886:764 (as variety of *procerula*; type locality: not given; type depository: ZMHB); Heikertinger 1951:213 (synonymized)

Distribution: Albania (Gruev 1992), Algeria (Peyerimhoff 1911), Austria (Redtenbacher 1874), Azerbaijan, Bulgaria (Gruev 1977, 1988b), Croatia (Gruev 1992), France (Doguet 1994), Germany (Weise 1886), Greece (Gruev 1990a), Hungary, Italy (Biondi 1990a), Macedonia (Gruev 1992), Montenegro (Gruev 1992), Morocco (Jolivet 1967), Poland, Russia (European part) (Konstantinov 1988), Slovakia (Mohr 1966), Spain (Bastazo et al. 1993), Switzerland, Tunisia (Jolivet 1967), Turkey (Gruev & Kasap 1985), Ukraine (Carpathians) (Konstantinov 1988).

Host plants: *Carex divisa* (Peyerimhoff 1926); *Rumex crispus* (Thérond 1976); Cyperaceae (Biondi 1990a).

Description: Body length (excluding head) 2.06–2.37 mm; width 1.04–1.11 mm. Ratio of elytron length at suture to maximum width, 2.77–3.02. Ratio of pronotum width at base to length at middle, 1.25–1.30. Ratio of length of elytron at suture to length of pronotum at middle, 2.44–2.48. Ratio of width of both elytra at base to width of pronotum at base, 1.02–1.06. Ratio of maximum width of both elytra to maximum width of pronotum, 1.16–1.22.

Elytron blueish without yellow, rarely black, without metallic luster. Pronotum black, without metallic luster. Antennomere 1 partly dark brown, rarely completely brown. Antennomere 2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal

socket (including surrounding ridge), 1.51–1.63. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.62–1.67. First and second male protarsomere length to length ratio, 1.44–1.49. First and second male protarsomeres width to width ratio, 0.88–1.00. Length of metatibia to distance between denticle and metatibial apex 2.34–2.39. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.14–3.22. First male protarsomere maximum width to width at base ratio, 1.88–1.92. First and second male metatarsomere length to length ratio, 1.57–1.59. First and second male metatarsomere width to width ratio, 1.00–1.02. Third and fourth male metatarsomere length to length ratio, 1.88–1.93.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, and flat or rounded on top; straight in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view abruptly curved with maximal curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum gradually narrowing, narrower than midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus elongately, acutely deltoid. Midpart of vaginal palpus (before apex) parallel-sided at base, abruptly narrowing towards apex. Anterior sclerotization of vaginal palpus ensiform; slightly

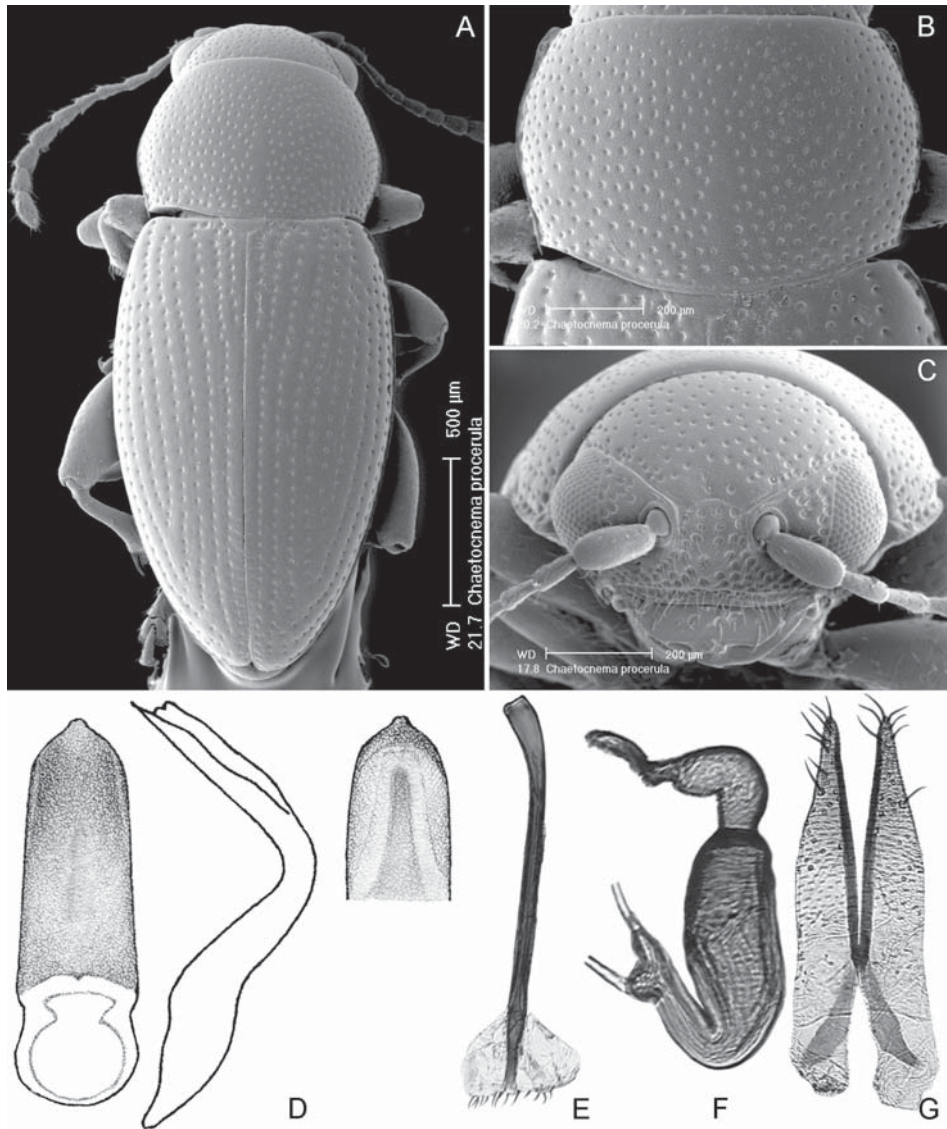
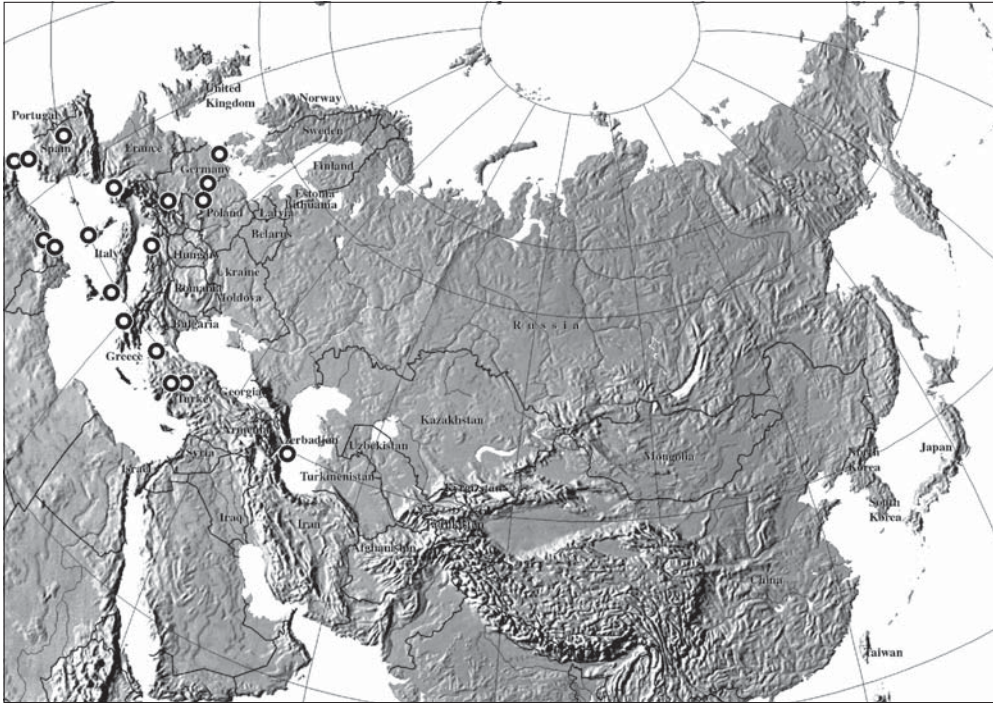


Figure 64. *Chaetocnema procerula*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

and evenly curved along length. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema procerula* is unusual among Palearctic species in having a slender first metatarsomere and a pronotum almost as wide as the elytra. It is similar



Map 58. *Chaetocnema procerula*

to *C. compressa* and *C. ussuriensis* in having the aedeagus strongly bent in lateral view. *Chaetocnema procerula* can be separated from *C. compressa* and *C. ussuriensis* by the ventral side of the aedeagus lacking a well-developed ventral groove; the whole ventral side is slightly concave. In *C. compressa* and *C. ussuriensis* the ventral side has a moderately well-developed ventral groove.

Type material: *Chaetocnema procerula*: Lectotype male: 1) Algeciras.; 2) Thiere, Andalusien, Rosenhauer; 3) Museum Paris ex Coll. P. Oberthur Rosenhauer; 4) Lectotype *Chaetocnema procerula* Rosenh. S. Doguet des. 89 (MNHN).

Material: ALGERIA: 1) Septentrad Sétif (1100 m), May 6, 1986, leg. Warchalowski (2 BCPF); 1) Algeria septentr., ad Sétif, 1100 m, 6.Mai 1986, leg. Warchalowski, 2) *Chaetocnema procerula*, det. Warchalowski (1 USNM); 1) Bône. mars.62, Deyrolle 900., 2) *Plectroscelis procerula* Rosenh, 3) Bône., mars.62 (4 ZMAS); AZERBAIJAN: 1) Lenkoran', 5.V.33, 2) Female [Symbol] (1 USNM); 1) Alexeevka, 12 km SW Lenkoran', Znoiko, 30.VI.932, 2) Female [Symbol], 3) *Chaetocnema procerula* Rosh., det. Konstantinov (1 ZMAS); CROATIA: 1) Dalmatia, Spalato, Collect. Kaufmann, 2) *Chaetocnema procerula*, Heikertinger det. (1 NHMW); FRANCE: 1) Gallia, Collectio Kaufmann, 2) *Chaetocnema procerula*, Heikertinger det. (1 NHMW); 1) Hyeres, S' Cl.Deville, Claire-Deville Provence., 2) *Chaetocnema procerula*, Heikertinger det.

(1 NHMW); 1) Hyères (Le Ceinturon), May 17, 1988, leg. M. Bergeal (15 BCPF); 1) 83-Hyeres, Ceinturon, 17 V 88, M. Bergeal (5 BCPF); GERMANY: 1) Mark: Umgeb. Gr. Machnow, coll. Neresheimer (1 ZSMC); 1) Potsdam, 28.VIII.1952, coll. E. Griep (2 ZSMC); 1) Schleissheim Birket, 1.V.1905 (2 ZSMC); 1) Umg. Gartow Krs. Luchow-Dannenbg., April 11, 1993 (3 BCPF); 1) Germ. Schl.-Holstein, Bad Oldesloe, Traveufer Nütschau, 03.06.1996 D. Siede, 2) *Chaetocnema procerula*, det D. Siede 1996, 3) Colbergealversailles (1 BCPF); GREECE: 1) Corfu, Reitter, 2) *Chaet procerula* Rosh (2 USNM); 1) Corfu, 2) U. Sahlb., 3) 112 *Chaet procerula* Rsh, J. Sahlbrg det. (6 USNM); 1) Corfu, Paganetti, 2) *Chaetocnema procerula*, Heikertinger det. (1 NHMW); 1) Corfu, Paganetti, coll. Dr. J. Fodor, 2) *Chaetocnema procerula*, Gruev det. (1 ZSMC); ITALY: 1) Calabria, ? Gerace, Calab. Paganetti, 2) *Chaetocnema procerula*, Heikertinger det. (1 NHMW); 1) Fluminimaggiore, Sardinia, 24-III-912., 2) Flumini maggiore, Sardinia, 24-III-912, 3) *Chaetocnema procerula* Rosh, A. Lubischew det. (1 USNM); MOROCCO: 1) Tetuan (2 BMNH); POLAND: 1) Wroclaw, Wojnow ad Wroclaw, April 11, 1993, leg. Warchalowski (2 BCPF); SPAIN: 1) Algeciras, November - December (3 BMNH); 1) Gibraltar (4 BMNH); 1) Madrid, 2) *Chaetocnema procerula* (Rosh.), Baselga det. (4 MNCN); 1) Madrid, Canal, 2) *Chaetocnema procerula* (Rosh.), Baselga det. (14 MNCN); TURKEY: 1) Ankara-Konya, Yolu 60 km, 19.V.1979, leg. Kasap, 2) *Chaetocnema procerula*, Gruev det. (5 ZSMC); 1) Besika Bay (2 BMNH); 1) Chanak [Çanakkale] (2 BMNH); 1) Isparta (Hoyran Golu, Rive Ouest 1160 m), May 14, 1998, leg. B. et M. Bergeal (9 BCPF).

Chaetocnema psylloides Pic

Fig. 65, Map 59

psylloides Pic 1909:139 (type locality: Uzbekistan, "Buchara"; type depository: MNHN; lectotype designated here)

altisocia Chen & Wang 1981:493 (type locality: China, Xizang (=Tibet, Zanda, Huang Fusheng); type depository: IZAS). **New synonym**

Distribution: Afghanistan (Gruev 1988a), China (Tibet) (Chen & Wang 1981), Iran, Iraq (Gruev 1995b), Kazakhstan (Lopatin 1977b), Kyrgyzstan (Lopatin 1977b), Pakistan (Kimoto 1972), Tajikistan (Lopatin 1977b), Turkmenistan, Uzbekistan (Lopatin 1977b).

Host plants: unknown.

Description: Body length (excluding head) 2.30–2.76 mm; width 1.26–1.45 mm. Ratio of elytron length at suture to maximum width, 2.44–2.69. Ratio of pronotum width at base to length at middle, 1.53–1.81. Ratio of length of elytron at suture to length of pronotum at middle, 2.62–2.75. Ratio of width of both elytra at base to width of pronotum at base, 1.10–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.32–1.41.

Elytron bronzish without yellow, rarely blueish without yellow. Pronotum bronzish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.75–1.77. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base regular, rarely confused. Third through sixth rows of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.20–1.24. First and second male protarsomere length to length ratio, 1.62–1.66. First and second male protarsomeres width to width ratio, 1.53–1.57. Length of metatibia to distance between denticle and metatibial apex 2.15–2.57. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.97–3.03. First male protarsomere maximum width to width at base ratio, 2.11–2.14. First and second male metatarsomere length to length ratio, 1.78–1.82. First and second male metatarsomere width to width ratio, 1.12–1.15. Third and fourth male metatarsomere length to length ratio, 2.48–2.52.

Apical third of aedeagus narrowing. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; poorly developed, shallow, with obtuse margins or absent in middle; absent in basal half. Apical part of longitudinal groove wider than basal; middle part narrower than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat or rounded on top; straight in lateral view straight. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

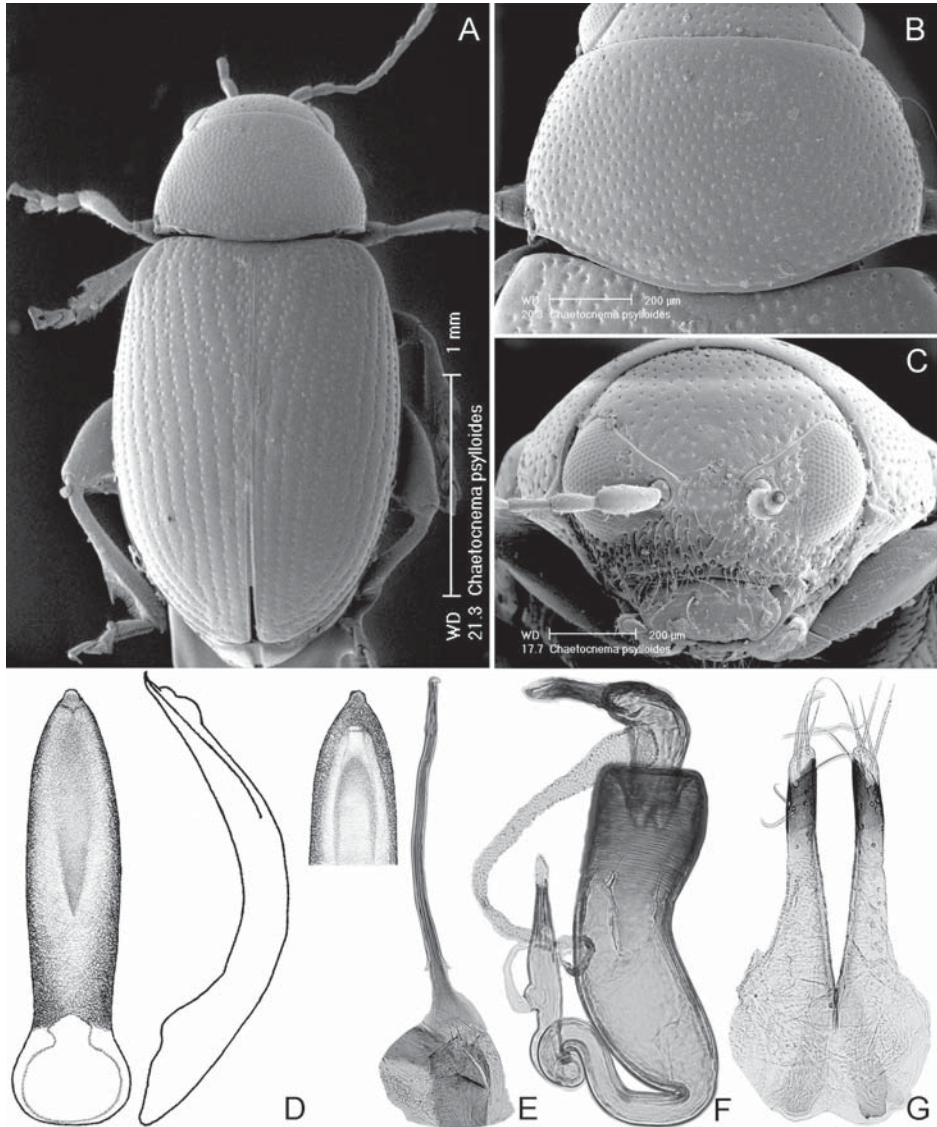
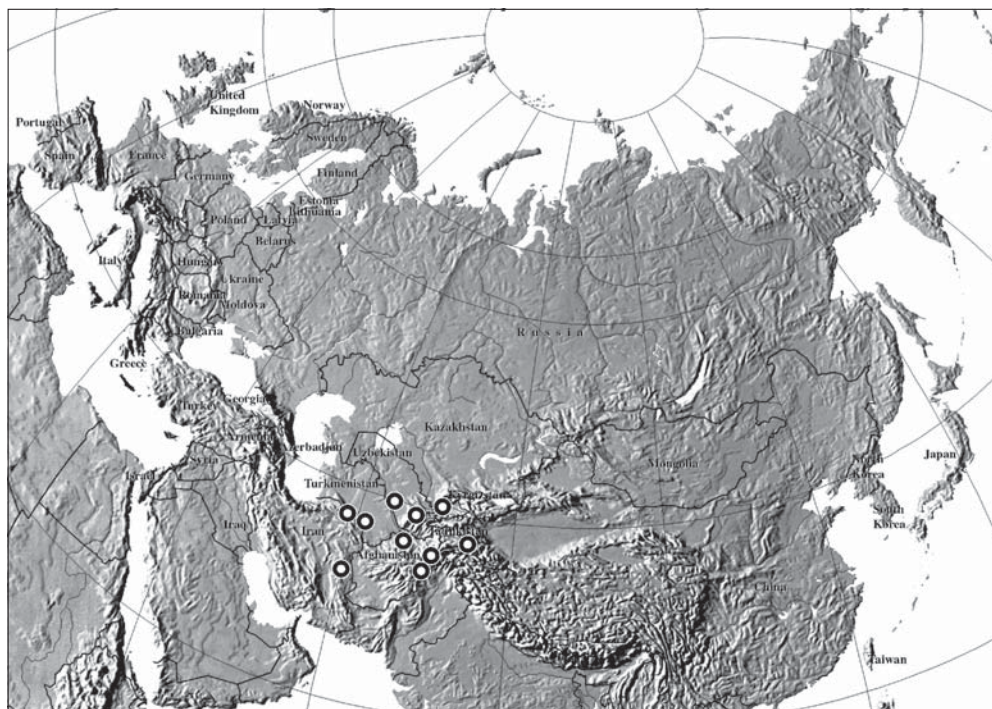


Figure 65. *Chaetocnema psylloides*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum strongly curved. Anterior sclerotization of tignum narrower than midsection.



Map 59. *Chaetocnema psylloides*

Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: Pic (1909) attributed the name *psylloides* to Weise in the description and on the identification label of the only known female specimen, without providing additional information. We could not find such a name among those proposed by Weise. All subsequent authors (Heikertinger & Csiki 1940, Heikertinger 1951) attributed this name to Pic (1909) and did not mention Weise as its author; an approach we follow. We compared the holotype of *C. psylloides* with specimens collected in Uzbekistan and confirmed that they are conspecific. *Chaetocnema psylloides* can be separated from most Palearctic *Chaetocnema* by the ventral groove of the aedeagus present apically and in the middle, but absent basally. Based on the study of the typical material of *C. altisocia* and *C. psylloides* we propose their synonymy.

Type material: *Chaetocnema psylloides*: Lectotype female: 1) type; 2) *Chaetocnema psylloides* Weise, Buchara; 3) Museum Paris, Coll. M. Pic; 4) Lectotype *Chaetocnema psylloides* Pic, des. A. S. Konstantinov 2009 (MNHN).

Chaetocnema altisocia: Paratype male: 1) in Chinese (Tibet, Zhadajinge, Zrjian, 4500 m); 2) 1976.VI.25 in Chinese (Huang Fusheng coll.); 3) paratype; 4) m; 5) *Chaetocnema altisocia* Chen et W. (IZAS).

Material: AFGHANISTAN: 1) Bend-Amir, Bend-Zolfigar (2900 m), July 14, 1962, leg. K. Lindberg (1 BCPF); 1) Koug-DJangoul, June 30, 1962, leg. K. Lindberg (1 BCPF); 1) Oulah, June 12, 1962, leg. K. Lindberg (1 BCPF); 1) Pain Mazar, SW Ghorst (2500 m), July 29, 1962, leg. K. Lindberg (1 BCPF); 1) NO. Afghan. 1952, J. Klapperich, 2) Nuristan, Bashgultal, 3) Achmede Dewane, 2800 m, 27.VII., 4) *Chaetocnema psylloides* Pic, No 31 (1 USNM); 1) O. Afghan. 1953, J. Klapperich, 2) Umg. Kabul, 1740 m, 20.III., 3) *Chaetocnema psylloides* Pic, Il Lopatin det., 1962 (5 USNM); IRAN: 1) Pers. Kopet-Dagh, Siaret 1160 m. 5.99 Coll. Hauser, 2) *Chaetocnema psylloides*, Heikertinger det. (1 NHMW); 1) Prov. Kuliab, Ak-sou-Thal, F. Hauser 1898, 2) *Chaetocnema psylloides*, Heikertinger det. (1 NHMW); 1) S. Iran, 2000 m, 25 km N Birjand, 6-7 6. 1977, 2) Loc. no. 360, Exped Nat Mus Praha, 3) *Chaetocnema marani* sp.n. (1 USNM); 1) S. Iran, 2000 m, 25 km N Birjand, 6-7 6. 1977, 2) Loc. no. 360, Exped Nat Mus Praha (1 USNM); 1) S. Iran, 2000 m, 25 km N Birjand, 6-7 6. 1977, 2) Loc. no. 360, Exped Nat Mus Praha, 3) *Chaetocnema marani* Král, sp.n., 4) *Chaetocnema psylloides* Pic, det. A. S. Konstantinov, 2009 (1 USNM); Male? 1) S, 2) NE, Iran, Kalat, 17 6 1977, 3) Loc. no 373, Exped Nat Mus Praha (1 USNM); TAJIKISTAN: 1) Tadjikistan, Takob, 18.VI.83, Karasev V., 2) *Chaetocnema psylloides* Pic., det. A. S. Konstantinov, 2009 (3 USNM); TURKMENISTAN: 1) Transcaspien, Oase Tedshen, 5.1903 Coll. Hauser, 2) *Chaetocnema psylloides*, Heikertinger det. (2 NHMW); UZBEKISTAN: 1) Buchara [Bukhara], Staudinger (1 BMNH); 1) Ishkent, Yakkobagsk r-on, Uzbekistan, 21.IV.1942, K. V. Arnol'di, 2) *Chaetocnema psylliodes* Pic, A. Lubischew det (2 ZMAS); 1) Taschkent, 2) Ch. taschkentica (1 USNM); 1) Uzbekistan: 10km, SEE Charvak, Ugamski mts., Sidzhak, 2000 m 9.V.1989, leg. A. Konstantinov, 2) *Chaetocnema psylloides* Pic, A. Baselga 2009 (1 USNM).

Chaetocnema punctifrons (Abeille)

Fig. 66, Map 60

punctifrons Abeille 1907:lxix (type locality: Algeria, Theniet el Had and 'Ain Torki, "forêt de cédres de Téniet et á Margueritte"; type depository: MNMH; lectotype designated here); as *Plectroscelis*

Distribution: Algeria (Abeille 1907), Italy (Biondi 1990a).

Host plants: *Carex pendula* (Peyerimhoff 1915, Jolivet 1967); *Juncus* (Biondi 1990a).

Description: Body length (excluding head) 3.01–3.32 mm; width 1.66–1.79 mm. Ratio of elytron length at suture to maximum width, 2.44–2.54. Ratio of pronotum width at base to length at middle, 1.66–1.68. Ratio of length of elytron at suture to

length of pronotum at middle, 2.90–2.92. Ratio of width of both elytra at base to width of pronotum at base, 1.00–1.03. Ratio of maximum width of both elytra to maximum width of pronotum, 1.22–1.28.

Elytron greenish without yellow. Pronotum greenish. Antennomere 1–4 completely yellow. Antennomere 5 completely yellow. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.18–1.19. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides slightly concave in middle. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus poorly developed.

First male protarsomere, length to width ratio 1.22–1.24. First and second male protarsomere length to length ratio, 1.57–1.58. First and second male protarsomeres width to width ratio, 1.12–1.15. Length of metatibia to distance between denticle and metatibial apex 2.45–2.48. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.14–2.19. First male protarsomere maximum width to width at base ratio, 2.23–2.28. First and second male metatarsomere length to length ratio, 1.42–1.45. First and second male metatarsomere width to width ratio, 1.16–1.17. Third and fourth male metatarsomere length to length ratio, 1.61–1.65.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus either well-developed, deep, with obtuse margins or poorly developed, shallow, with obtuse margins; well-developed, with obtuse margins in basal half. Apical, middle, and basal part of longitudinal groove subequal in width. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus

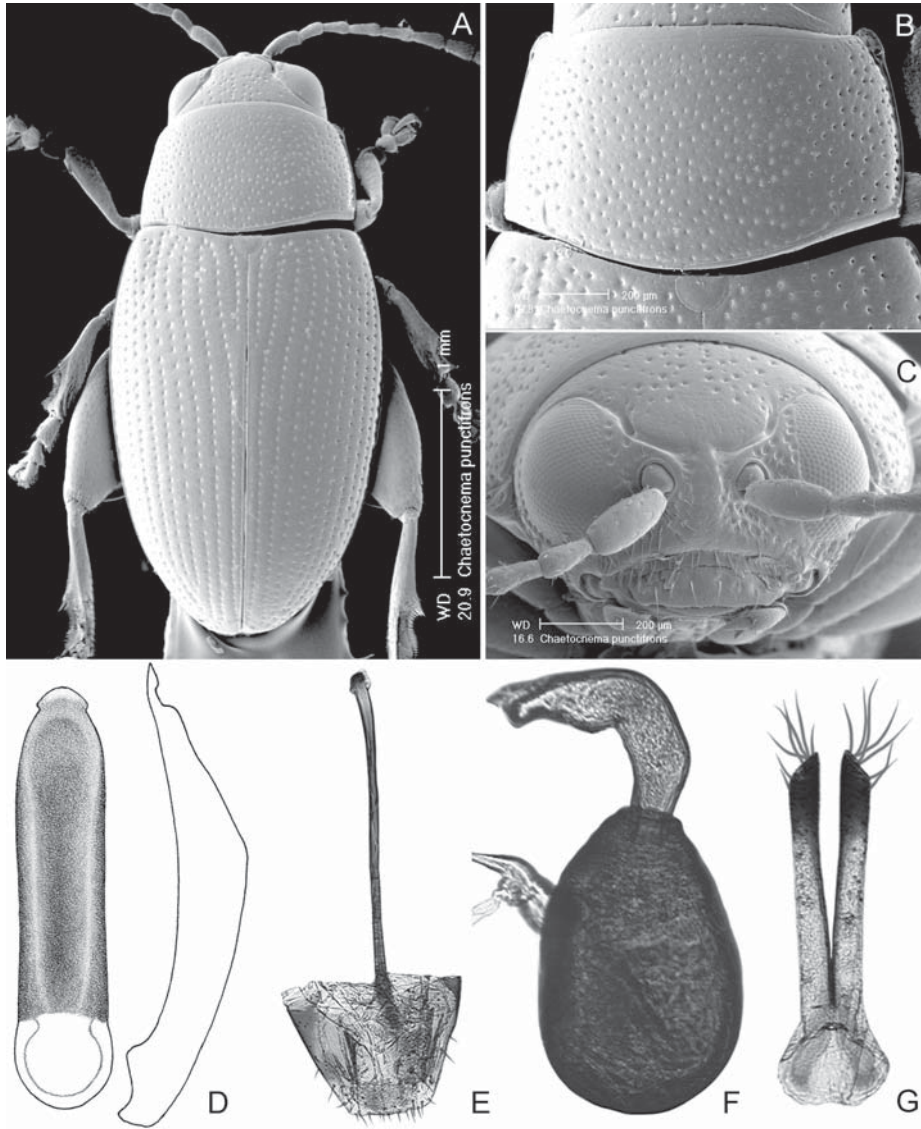
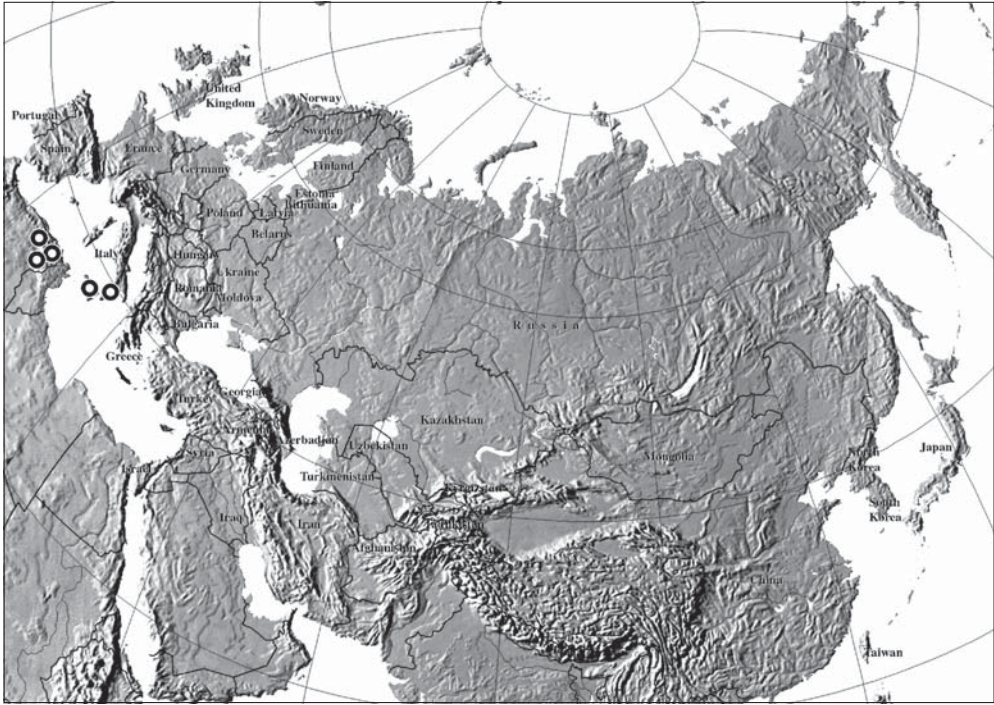


Figure 66. *Chaetocnema punctifrons*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

in ventral view ogival in shape; straight in lateral view straight. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view nearly straight with maximal curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to side of



Map 60. *Chaetocnema punctifrons*

receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum arrow shaped, not much wider than midsection. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema punctifrons* is similar to *C. chlorophana* and *C. pelagica* in external morphology. It can be easily separated from them by the shape of the aedeagal apex. It is wide and round on top in *C. punctifrons* and narrow in *C. chlorophana* and *C. pelagica*.

Type material: *Chaetocnema punctifrons*: Lectotype female: 1) Teniet, 2) Museum Paris, Coll. Abeille de Perrin, 3) type, 4) *Plectroscelis punctifrons* Ab., 5) Lectotype *Chaetocnema punctifrons* (Abeille) des. Konstantinov & Lingafelter, 2003 (MNHN); Paralectotype male: 1) Margueritte, Fin May 1893, Abeille de Perrin, 2) Museum Paris Coll. Abeille de Perrin, 3) type, 4) Paralectotype *Chaetocnema punctifrons* (Abeille) des. Konstantinov & Lingafelter, 2003 (MNHN).

Material: ALGERIA: 1) Amoucha Setif, April 20, 1987, leg. M. Bergeal (10 BCPF); 1) Di. Mahouna, Guelma, April 4, 1985, leg. M. Bergeal (2 BCPF); 1) Meskiana, April 3, 1985, leg. M. Bergeal (2 BCPF); 1) Amoucha Setif, Algerie 20.IV.87, M. Bergeal (2 BCPF); ITALY: 1) Sicily: Mt. ti Nebrodi (1265 m), September 14, 1981, leg. M. Biondi (2 BCPF); 1) Calabria, Gerace, Cal. Paganetti, 2) *Chaetocnema punctifrons*, Heikertinger det. (7 NHMW).

***Chaetocnema rufofemorata* Pic**

Fig. 67, Map 61

rufofemorata Pic 1915b:42 (type locality: Portugal, "Espagne[sic]: Sierra Estrella"; type depository: MNHN; lectotype designated here)

castillana Bergeal & Doguet 2005:30 (type locality: "Espagne, Sierra de la Demanda (Burgos), Pineda de la Sierra"; type depository: MNHN). **New synonym**

Distribution: Portugal (Pic 1915b), Spain (Bergeal & Doguet 2005).

Host plants: unknown.

Description: Body length (excluding head) 1.59 – 2.05 mm; width 1.10 – 1.21 mm. Ratio of elytron length at suture to maximum width, 2.52 - 2.86. Ratio of pronotum width at base to length at middle, 1.41 - 1.50. Ratio of length of elytron at suture to length of pronotum at middle, 1.58 – 1.87. Ratio of width of both elytra at base to width of pronotum at base, 1.06 - 1.10. Ratio of maximum width of both elytra to maximum width of pronotum, 1.26 – 1.33.

Elytron blueish, greenish, or bronzish without yellow. Pronotum blueish, greenish, or bronzish. Antennomere 1 partly dark brown. Antennomere 2 completely yellow or partly brown. Antennomeres 3–4 completely yellow. Antennomere 5 partly brown. Pro-tibia yellow to partly brown, meso- and metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.85 - 2.33. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent or present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum with or without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures or lacking them. Sides of pronotum evenly rounded, with maximum width near middle or slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally or on same level as lateral margin. Posterolateral prothoracic callosity projecting up to

lateral margin of pronotum. Diameter of pronotal punctures larger, subequal or 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through fifth rows of punctures at base of elytron regular or confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.10–1.14. First and second male protarsomere length to length ratio, 1.81–1.86. First and second male protarsomeres width to width ratio, 1.73–1.79. Length of metatibia to distance between denticle and metatibial apex 2.40–2.48. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.71–1.75. First male protarsomere maximum width to width at base ratio, 1.75–1.79. First and second male metatarsomere length to length ratio, 1.68–1.71. First and second male metatarsomere width to width ratio, 1.38–1.43. Third and fourth male metatarsomere length to length ratio, 1.77–1.82.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove apically convex or flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; well-developed, deep, with sharp margins in middle and basal half. Apical part of longitudinal groove wider than basal; middle part as wide as basal; narrower than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus amorphous. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: Heikertinger (1951) suspected that *C. rufofemorata* was a synonym of *C. obesa* (Boieldieu 1859). The type locality is Serra da Estrela in Portugal, even though

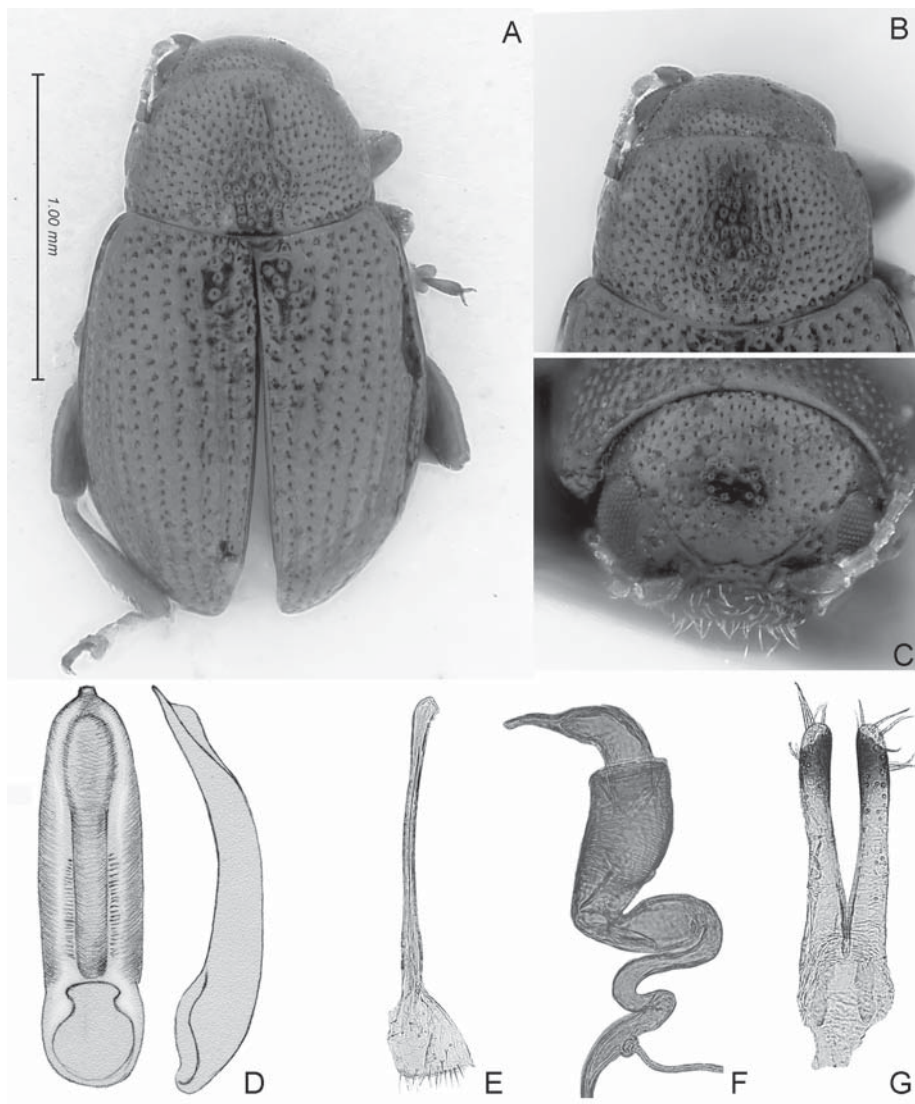
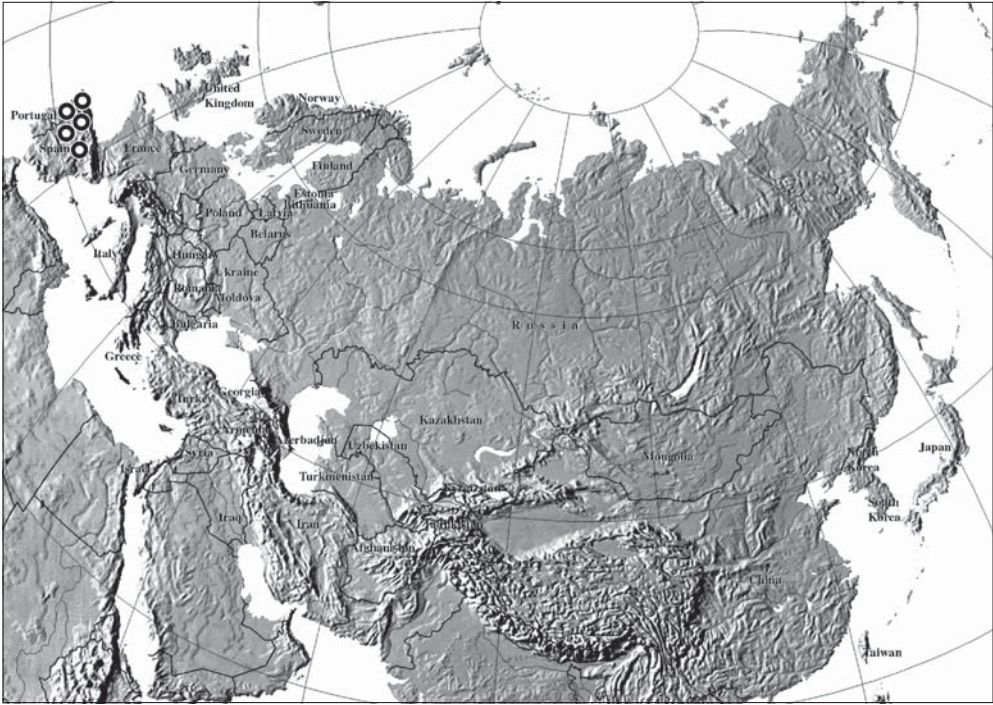


Figure 67. *Chaetocnema rufofemorata*; A, habitus, dorsal (holotype); B, pronotum, dorsal (holotype); C, head, frontal (holotype); D, aedeagus, ventral and lateral; E, tignum (holotype); F, spermatheca (holotype); G, vaginal palpi (holotype).

Pic cited Espagne as the type locality. However, it is quite different from *C. obesa* in all important features of female genitalia, body shape and color, as well as punctuation of pronotum. Based on the color of the dorsum and coarse punctuation of pronotum, *C. rufofemorata* is similar to *C. sahlbergii*, but can be easily differentiated from it based on the following characters: antennomeres 2, 3 and 4 yellow (they are partly brown



Map 61. *Chaetocnema rufofemorata*

in *C. sahlbergii*); anterior sclerotization of tignum broadly rounded at apex (it is flat in *C. sahlbergii*). *Chaetocnema rufofemorata* is also similar to a number of species with the ventral side of the aedeagus with a groove that is wider apically than basally and with the basal sides of the groove covered with wrinkles. This group contains *C. eastafghanica*, *C. franzi*, *C. imitatrix*, and *C. subcoerulea*. It can be separated from all the species of the group by the following features of the aedeagus: basal, “narrow” part of the ventral groove is parallel-sided and much longer than the apical, “wide” part of the groove; apex is narrowing abruptly. Comparison of the holotype of *C. rufofemorata* and a paratype of *C. castillana* revealed that they are conspecific.

Type Material: *Chaetocnema rufofemorata*: Lectotype female: 1) s. Estrella; 2) *Chaetocnema* ... [illegible handwriting (AK)]; type; 3) *rufofemorata* Pic; 4) Museum Paris, Coll. M. Pic; 5) Lectotype *Chaetocnema rufofemorata* Pic, des. A. Konstantinov, 2009 et al. (MNHN).

Chaetocnema castillana: Paratype male: 1) Burgos, Sierra de la Demanda, Pineda de la Sierra (PARATYPE), 11-VII, leg. Bergeal & Doguet, 2) *Chaetocnema castillana* Bergeal & Doguet, Bergeal & Doguet det. (1 BASC).

Material: PORTUGAL: 1) Tras-os-Montes, Miranda de Douro-Vila Cha, 21-VI-2001, leg. Baselga, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (1 BASC);

SPAIN: 1) Espagne (Burgos) S. de la Demanda, Pineda de la Sierra, 11.VII.2003, B. & M. Bergeal, 2) *Chaetocnema paganetti* Heikertinger, M. Bergeal 2003, 3) *Chaetocnema castillana* Bergeal and Doguet, Baselga det. 2009. (1 USNM); 1) Madrid, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (13 MNCN); 1) Pontevedra, Covelo, Fofe, 11-VII-1999, leg. Baselga, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (1 BASC); 1) Salamanca, Trabanca, 20-VI-2001, leg. Baselga, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (1 BASC); 1) Segovia, San Rafael, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (1 MNCN); 1) Segovia, Valsain, 5-IX-1931, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (6 MNCN); 1) SP (Burgos) S. de la Demanda, Pineda de la Sierra, 11.VII.2003, B. & M. Bergeal, 2) *Chaetocnema nov. sp. ?*, M. Bergeal 2003, 3) *Chaetocnema castillana* Bergeal and Doguet, Baselga det. 2009. (1 USNM); 1) SP (Burgos) S. de Urbion Montenegro de Cameros, 12.VII.2003, B. & M. Bergeal, 2) *Chaetocnema nov. sp. ?*, M. Bergeal 2003, 3) *Chaetocnema castillana* Bergeal and Doguet, Baselga det. 2009. (1 USNM); 1) Zamora, Porto, 5-IV-1993, leg. Baselga, 2) *Chaetocnema castillana* Bergeal & Doguet, Baselga det. (2 BASC).

Chaetocnema sahlbergii (Gyllenhal)

Fig. 68, Map 62

sahlbergii Gyllenhal 1827:662 (type locality: Sweden [from title of work]; type depository: UUZM; lectotype designated here); as *Haltica*

insolita Allard 1860:570 (type locality: not given; type depository: not given [Dejean Collection]). **New homonym, new synonym**

insolita Foudras 1860:230 (type locality: not given; type depository: not given [Dejean Collection]); Heikertinger 1951:213 (synonymized)

fairmairei Boieldieu 1852:690 (*fairmairii* [sic], emended by Heikertinger 1951:213; as variety of *sahlbergii*; type locality: "Baie de la Somme" (France); type depository: not given); as *Plectroscelis*; Heikertinger 1951:213 (synonymized)

cyanescens Weise 1886:777 (as variety of *sahlbergii*; type locality: not given; type depository: ZMHB); Heikertinger 1951:213 (synonymized)

Distribution: Albania (Gruev 1992), Austria (Redtenbacher 1849), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bulgaria (Gruev 1988b), Czech Republic, Denmark (Hansen 1927), England (Stephens 1839), Estonia, Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Germany (Weise 1888), Greece (Mohr 1965, Gruev 1990a), Hungary (Vig 1996), Ireland (Anderson et al. 1997), Italy (Biondi 1990a), Latvia (Pūtele 1971), Liechtenstein, Lithuania, Luxembourg, Mongolia, Montenegro, Netherlands (Leesberg 1881), Norway (Klefbeck & Sjöberg 1957), Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (European part, Caucasus) (Konstantinov 1988), (Siberia) (Medve-

dev & Dubeshko 1974), Serbia, Slovakia, Slovenia (Gruev 1992), Sweden, Switzerland (Stierlin 1886), Turkey (Kral 1967a), Ukraine.

Host plants: *Juncus* (Bargagli 1878); *Carex*, *Vaccinium oxycoccos* (Weise 1886-1891(1888)); *Carex* (Heikertinger 1925); *Carex*, *Juncus* (Doguet 1994); Cyperaceae (Biondi 1990a).

Description: Body length (excluding head) 1.93–2.13 mm; width 1.08–1.25 mm. Ratio of elytron length at suture to maximum width, 2.05–2.38. Ratio of pronotum width at base to length at middle, 1.29–1.43. Ratio of length of elytron at suture to length of pronotum at middle, 1.89–2.48. Ratio of width of both elytra at base to width of pronotum at base, 1.18–1.20. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31–1.38.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present or absent. Suprafrontal sulcus relatively deep, well-defined, emarginate or obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.57–1.62. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures larger than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through fifth rows of punctures on elytron base confused. Sixth row of punctures regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.40–1.43. First and second male protarsomere length to length ratio, 1.90–1.94. First and second male protarsomeres width to width ratio, 1.25–1.29. Length of metatibia to distance between denticle and metatibial apex 2.62–2.66. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.00–2.05. First male protarsomere maximum width to width at base ratio, 2.31–2.36. First and second male metatarsomere length to length ratio, 1.67–1.72. First and second male metatarsomere width to width ratio, 1.22–1.24. Third and fourth male metatarsomere length to length ratio, 2.10–2.13.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral

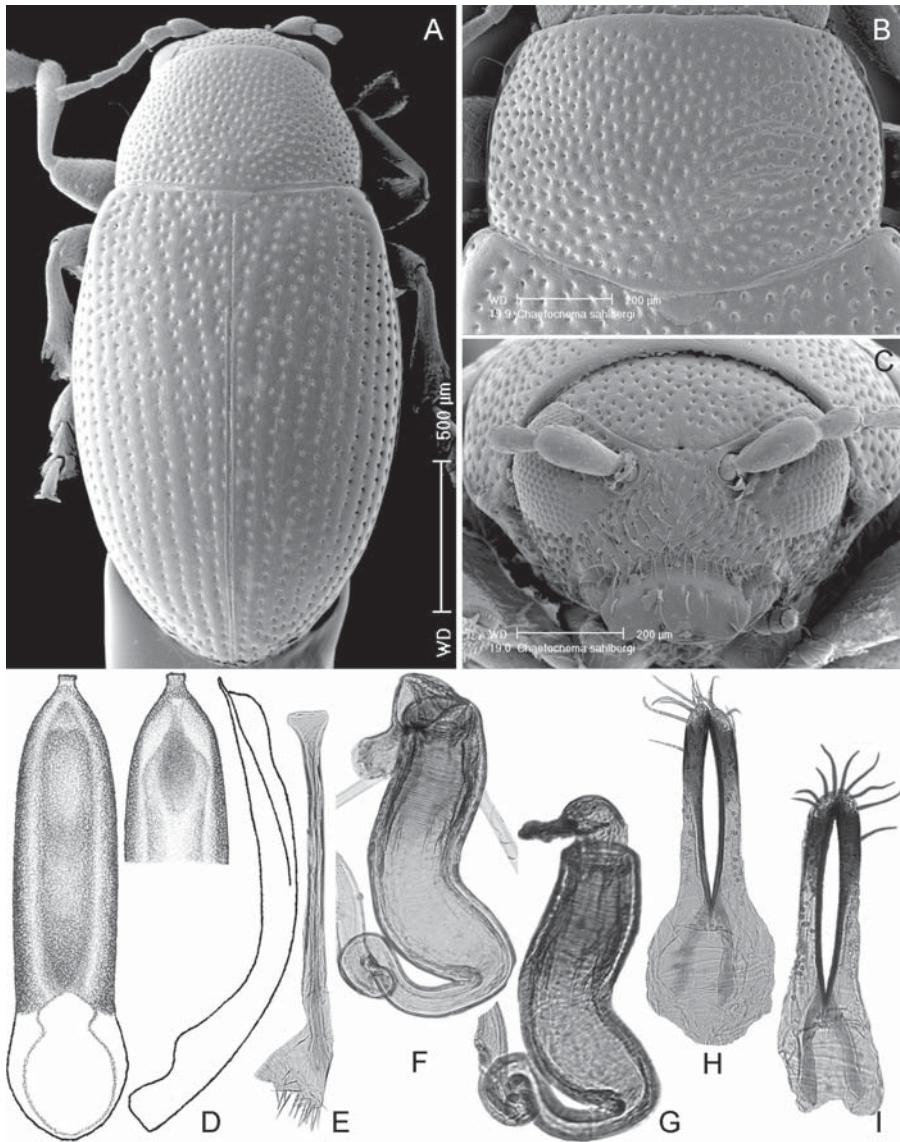
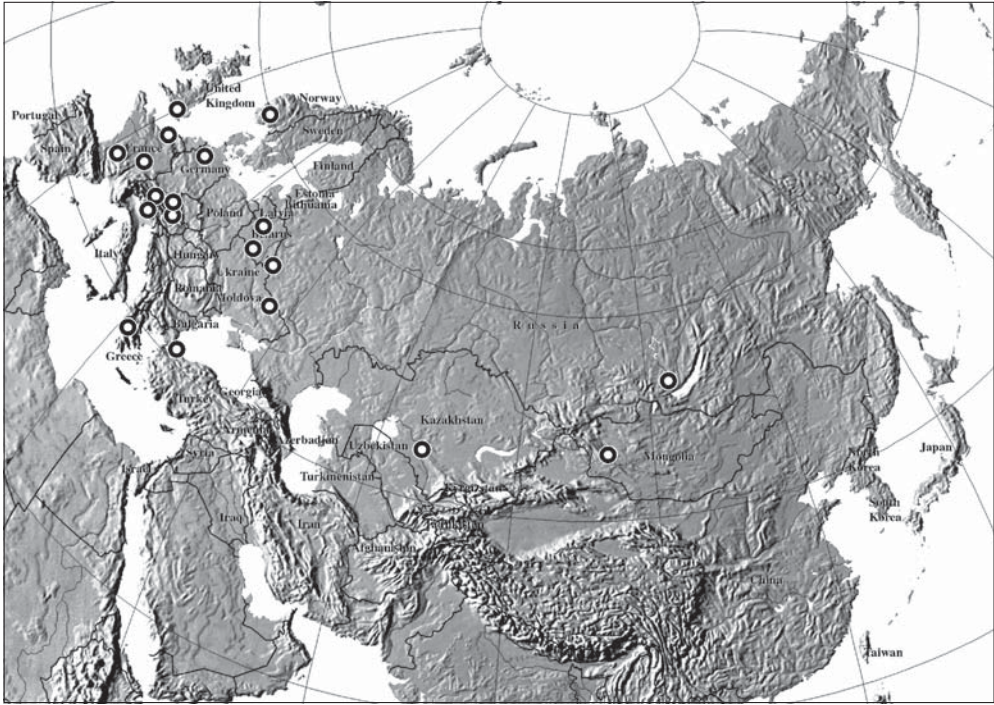


Figure 68. *Chaetocnema sahlbergii*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, G, spermatheca; H, I, vaginal palpi.

view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins or poorly developed, shallow, with obtuse margins; well-developed, deep, with obtuse margins in middle; well-developed, with sharp margins in basal half. Apical and middle part of lon-



Map 62. *Chaetocnema sahlbergii*

itudinal groove as wide as basal. Width of longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, narrow, flat on top; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present or absent; absent on apical part. Aedeagus in lateral view evenly and slightly curved with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly widening anteriorly or amorphous; slightly and evenly curved along length. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: Dejean's manuscript name, *Plectroscelis insolita*, was used by several authors in combination with a description. The name has been made available under Foudras (1860) and Allard (1860), but not under Mulsant & Rey (1874) who referred to Foudras (1860). Foudras's work was probably published in early 1860 (as a late 1859 volume, covering 1859 to January 1860 according to title page); Allard's work was published on December 26, 1860 (p. CXXXIV in journal).

Chaetocnema sahlbergii is similar to *C. jelineki* and *C. sinuata*. It can be separated from *C. jelineki* by the relatively wide ventral groove of the aedeagus (the groove is narrow in *C. jelineki*). From *C. sinuata*, it can be separated by the aedeagus lacking transverse wrinkles on the sides of the ventral groove (they are present in *C. sinuata*).

Type Material: *Chaetocnema sahlbergii*: Lectotype male: 1) g; 2) Uppsala Univ. Zool. Mus. Gyllenhals saml. TYP nr. 1391; 3) Lectotype *Chaetocnema sahlbergii* Gyllenhal des. A. S. Konstantinov et al., 2009 (UUZM). Paralectotypes, the same labels as lectotype except first label with letters a, b, c, d, e, f, h, i (8 UUZM).

Material: AUSTRIA: 1) Golling., Slzb [Salzburg], leg. Heikertinger (3 BMNH); 1) Vorahlberg: Laterns Gapfohl Schipiste (1200-1300 m), July 17, 1985, leg. Kapp (1 BCPF); BELARUS: 1) Belarus: Gomel terr. Poles'e, Turov/ Khvoensk/ Khlupki. 11.VI.1987 52°04'00"N 27°44'00"E, leg. A. Pisanenko, 2) *Chaetocnema sahlbergii* (Gyllenhal) det. A.S. Konstantinov (1 USNM); 1) Belarus: Gomel terr. Turov env. 23.VI.1980 52°04'00"N 27°44'00"E, wet meadow, hay field, leg. A. Konstantinov, 2) *Chaetocnema sahlbergii* (Gyllenhal) det. A.S. Konstantinov (3 USNM); 1) Poles'e, Luninetsk r-on, swamp, 14.7.72, 2) *Chaetocnema sahlbergii* Gyll., det. I. Lopatin, 1977 (1 USNM); 1) Minskaya obl., Pleschenitsy, meadow, Konstantinov, 29.VI.1979, 2) *Chaetocnema sahlbergii* Gyll (1 USNM); FRANCE: 1) Env. du Bourges (1 BMNH); 1) St. Christophe, June 18, 1983, leg. M. Bergeal (1 BCPF); 1) Tourbieres, April 7, 1984, leg. M. Bergeal (1 BCPF); 1) Tourbieres, June 7, 1984, leg. M. Bergeal (6 BCPF); 1) Limoges, Bugeat, Etg. Goursolle, June 1, 1984, leg. M. Bergeal (2 BCPF); 1) Limoges, Bugeat, May 25, 1986, leg. M. Bergeal (10 BCPF); 1) Limoges, Bugeat, Viam, May 25, 1986, leg. M. Bergeal (10 BCPF); 1) Limoges, Bugeat, Viam, May 26, 1986, leg. M. Bergeal (20 BCPF); GERMANY: 1) Gollachosth. GG91 (4 ZSMC); 1) Indersdorf, 3.VIII.05 (7 ZSMC); 1) Oettel Munchen 29.IX.01, 2) *Chaetocnema sahlbergii*, Mohr det. (4 ZSMC); 1) Ruthe (1 BMNH); 1) Bayerischer Wald, Rusel, 3.8.1977, +400, leg. Döberl, 3) *Chaetocnema sahlbergii*, det. Döberl 1977 (1 USNM); 1) Bayerischer Wald, Rusel, 6.8.1977, +400, leg. Döberl, 3) *Chaetocnema sahlbergii*, det. Döberl 1977 (1 USNM); GREECE: 1) Argostole [Argostoli] (2 BMNH); ITALY: 1) Balzano (1 BMNH); ITALY?: 1) S:Nb. Ranea, Vita, July 31, 1972, leg. B. Vidgren (2 BCPF); KAZAKHSTAN?: 1) Turkestan, Sansar, Glasunov 1892, 29/ III, 2) *sahlbergii* Gyll., mit 2 var *synnescens* Ws, *cupricollis* MTs n. var, I femorileus ant et med. madinu, park ferrugira [illegible handwritten label], 3) *Chaetocnema sahlbergii* Gyll., I. Lopatin det., 1962 (1 ZMAS); MONGOLIA: 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, 25.V.1975 (1 USNM); 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, 25.V.1975, 3) *Chaetocnema sahlbergii* Gyll., det. I. Lopatin, 1976

(1 USNM); 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, Wüste, 25.V.1975 (1 USNM); 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, Wüste, 25.V.1975, 3) *Chaetocnema sahlbergi* Gyll., det. I. Lopatin, 1976 (1 USNM); 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, Wüste, 25.V.1975, 3) *Chaetocnema sahlbergi* Gyll., det. I. Lopatin, 1976, 4) *Chaetocnema sahlbergi* Gyll. (1 USNM); 1) Mongolia, Chord aimak, Dr. R. Piechocki, 2) Farantaj, 25.V.1975 (1 USNM); NORWAY: 1) “Norweg.”, 2) *Chaetocnema sahlbergii*, Heikertinger det. (2 NHMW); 1) Norweg., 2) sahlbergi, 3) Collectio, Kaufmann, 4) Coll. Mus. Vindob. (2 NHMW); RUSSIA: 1) Irkutsk, leg. Bokor, 2) *Chaetocnema sahlbergii*, Gruev det. (5 ZSMC); 1) Russia, Bryansk terr. Unecha, 23.VI.1981, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema sahlbergi* (Gyllenhal) det. A.S. Konstantinov (1 USNM); 1) Russia, Bryansk terr. Unecha, Unecha river, 20.VI.1980, 52°50'39"N 31°56'03"E, leg. A.Konstantinov, 2) *Chaetocnema sahlbergi* (Gyllenhal) det. A.S. Konstantinov (1 USNM); TURKEY: 1) Constantinople [Istanbul] (2 BMNH); UKRAINE: 1) Poltava, April 17, 1925, leg. det. by Ogloblin (1 BMNH); UNITED KINGDOM: 1) Anglia [England] (1 BMNH); 1) Tottenham, Scarborough (Yorkshire), Mudford, Gravesend Dist., August (1 BMNH).

***Chaetocnema scheffleri* (Kutschera)**

Fig. 69, Map 63

scheffleri Kutschera 1864:315 (type locality: north-east Austria, “Niederösterreich”; type depository: unknown); as *Plectroscelis*

longula Weise 1890:111 (type locality: “Kaukasus”; type depository: ZMHB; lectotype designated here); Heikertinger 1951:211 (synonymized)

tunisea Pic 1909:162 (type locality: “Tunisia, Kairoaan”; type depository: MNHN); Heikertinger 1951:211 (synonymized)

Distribution: Algeria, Austria (Redtenbacher 1874), Bulgaria (Gruev 1988b), Croatia, France (Bergeal et al 2005), Germany (Weise 1886), Greece (Mohr 1965, Gruev 1990a), Hungary, Iran (Rapilly 1978), Iraq (Gruev 1995a), Israel (Furth 1985), Italy (Biondi 1990a), Moldova, Romania (Gruev et al. 1993), Russia (Caucasus) (Weise 1890, Lopatin 1960), Serbia (Gruev 1992), Slovakia, Slovenia, Spain (Biondi 1990c), Switzerland, Tunisia, Turkey (Gruev & Kasap 1985), Ukraine (Crimea), Uzbekistan.

Host plants: *Rumex pulcher*, *R. acetosella*, *R. angiocarpus* (Peyerimhoff 1926); *Rumex* (Biondi 1990a); *Polygonum patulum* (Korotyayev, pers. com), *Fagopyrum esculentum* (Palij 1961).

Description: Body length (excluding head) 1.72–2.06 mm; width 1.01–1.15 mm. Ratio of elytron length at suture to maximum width, 2.39–2.41. Ratio of pronotum width at base to length at middle, 1.64–1.72. Ratio of length of elytron at suture to length of pronotum at middle, 3.07–3.14. Ratio of width of both elytra at base to width

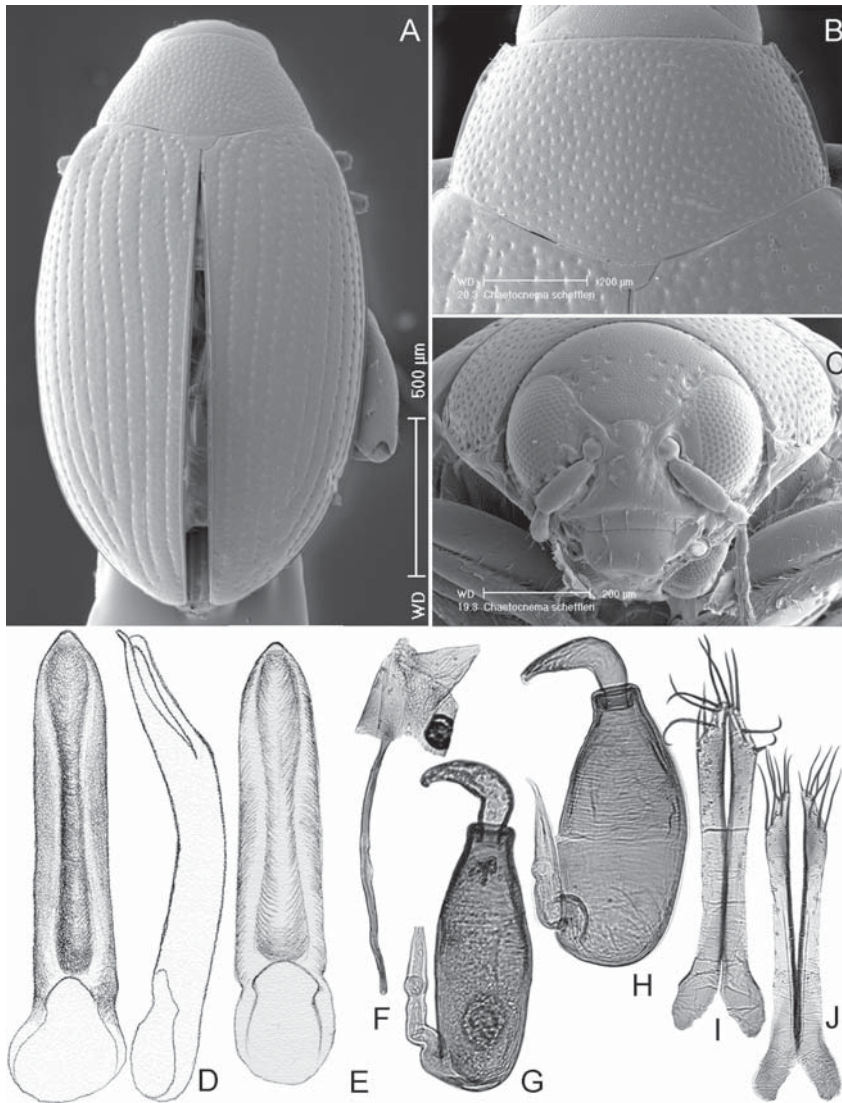
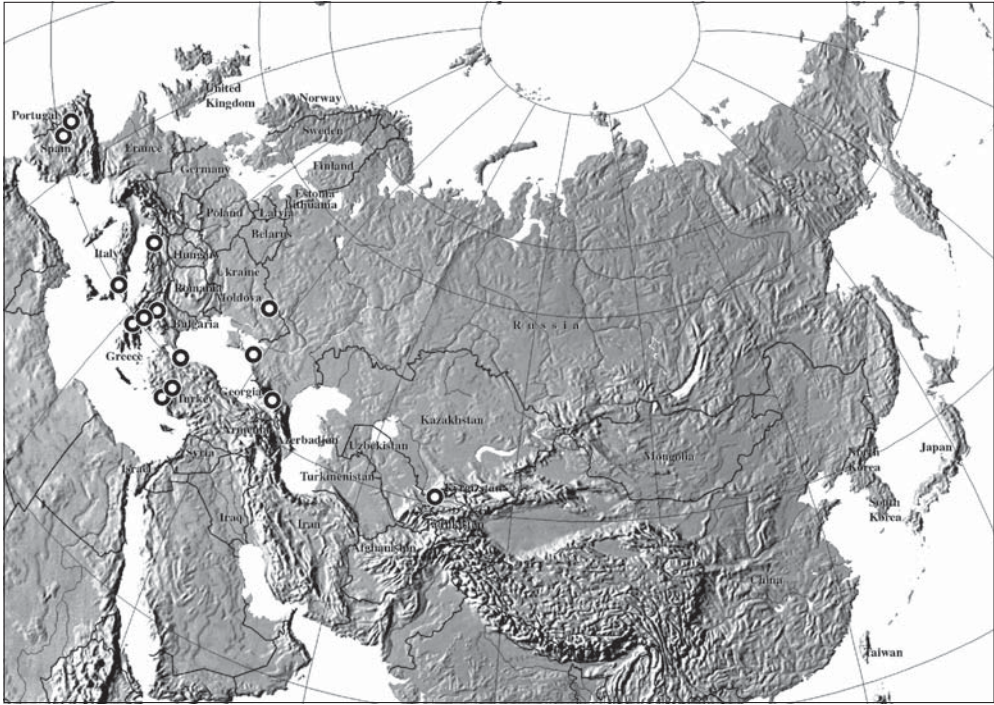


Figure 69. *Chaetocnema scheffleri*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, France; E, aedeagus, ventral view, Krasnodar region; F, tignum; G, H, spermatheca; I, J, vaginal palpi.

of pronotum at base, 1.10–1.11. Ratio of maximum width of both elytra to maximum width of pronotum, 1.37–1.38.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia partly brown. Pro-, meso-, metafemur brown.



Map 63. *Chaetocnema scheffleri*

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.80–0.87. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting beyond lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.59–1.71. First and second male protarsomere length to length ratio, 1.22–1.30. First and second male protarsomeres

width to width ratio, 1.00–1.02. Length of metatibia to distance between denticle and metatibial apex 2.73–2.82. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.20–3.38. First male protarsomere maximum width to width at base ratio, 1.88–1.92. First and second male metatarsomere length to length ratio, 1.75–1.79. First and second male metatarsomere width to width ratio, 1.00–1.03. Third and fourth male metatarsomere length to length ratio, 1.87–2.03.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with obtuse margins in basal half. Apical part of longitudinal groove as wide as basal; middle part narrower than basal and apical. Longitudinal groove in middle subequal to or narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; strongly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum strongly curved. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly; slightly and evenly curved along length. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: Our concept of this species is based on specimens from Croatia, identified as *C. scheffleri* by Heikertinger and from Bulgaria, identified by Döberl. *Chaetocnema scheffleri* is similar to *C. breviscula* and *C. tibialis*. It can be separated from them by the aedeagus having the ventral groove occupying the entire length of the ventral side.

Type material: *Chaetocnema longula*: Lectotype male. 1) Kaukas, Leder; 2) ex. Coll. J. Weise; 3) *Chaetocnema longula*; 4) Syntypus, *Chaetocnema sinuata* Weise 1889, labelled by MNHUB 2009; 5) Lectotype *Chaetocnema sinuata* Weise des. A. S. Konstantinov et al. 2009 (ZMHB). Paralectotypes, the same label as lectotype (5 ZMHB)

Material: BULGARIA: 1) Bulgarie mer., Sandanski, 6 VII 74 Hoffer, 2) collbergealversailles, 3) *Chaetocnema scheffleri* Kutschera, M. Bergeal det. 1996 (1 BCPF); 1)

Bulgarie mer., Sandanski, 6 VII 74 Hoffer, 2) *Chaetocnema scheffleri*, det. Döberl 1998 (1 DCAG); CROATIA: 1) Bakovac, Croatia, Götzelmann, 2) det. Heikertgr., *scheffleri*, 3) 1953 Coll. Heikertinger (1 NHMB); GREECE: 1) Epire: Botzaras, 615 m., June 7, 1997, leg. B. & M. Bergeal (2 BCPF); 1) Macedonia: Anavrita-Filipei, June 9, 1997, leg. B. & M. Bergeal (1 BCPF); 1) Macedonia: Panorama pres. Filipei, June 9, 1997, leg. B. & M. Bergeal (1 BCPF); ITALY: 1) Basilicata: Oasi, Lago Pantano di Pignota, June 23, 1991, leg. Angelini (6 BCPF); 1) I-Basilicata (PZ) 770 m., Oasi WWFLago Pantano di Pignola 9 V 1991, leg. Angelini, St.44, 2) *Chaetocnema concinna* Marsham, M. Bergeal det 1997, 3) collbergealversailles (1 BCPF); RUSSIA: 1) Kaukas Leder, 2) longula Weise, 3) longula Weise, Cotypus, 4) *scheffleri*, det. Heiktgr., 5) 1953 Coll. Heikertinger (1 NHMB); 1) Kaukas Leder, 2) longula, cotype., Retter, 4) longula Weise, Cotypus, 5) *scheffleri*, det. Heiktgr., 6) 1953 Coll. Heikertinger, 7) Museum Frey Tutzing (1 NHMB); 1) Russia Krasnodar Terr., Taman' Peninsula, 3 km W of Suvorov-Cherkesskii Vill., 9.VI.2007 B. A. Korotyaev, 2) 2) *Polygonum salsugineum* M. B. (USNM); 1) Russia Krasnodar Terr., Taman' Peninsula, 3 km W of Suvorov-Cherkesskii Vill., 9.VI.2007 B. A. Korotyaev (3 ZMAS, USNM); 1) Krasnod Krai, Taman', Korotyaev, 28.IV.1980, 2) ? Korotyaev det., 3) Zool. Inst, St. Petersburg (1 ZMAS); SPAIN: 1) Madrid, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (4 MNCN); 1) Madrid, El Pardo, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (1 MNCN); 1) Madrid, Madrid, Chamartín, XI-1899, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (1 MNCN); 1) Madrid, Rivas, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (1 MNCN); 1) Zamora, Fermoselle, Fornillos, 20-V-1998, leg. Baselga, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (1 BASC); 1) Zamora, Fermoselle, Pinilla, 19-V-1998, leg. Baselga, 2) *Chaetocnema scheffleri* Kutsch., Baselga det. (1 BASC); TURKEY: 1) Antalya: Burdur: Lac Oanakli (1000 m), May 13, 1998, leg. B. & M. Bergeal (1 BCPF); 1) Konya: Asagisigil (Prairie humide), May 16, 1998, leg. B. & M. Bergeal (3 BCPF); 1) Prinkipo [Büyükada], April 1902 (1 BMNH); UKRAINE: 1) Poltava, April 5, 1925, 2) *Chaetocnema scheffleri*, Oglobin det. (1 BMNH); UZBEKISTAN: 1) Uzbekistan, Chimgan, 28.IV.1989, A. Konstantinov (1 USNM); 1) Uzbekistan, Chimgan, 29.V.1990, A. Konstantinov (1 USNM).

Chaetocnema schlaeflii (Stierlin)

Fig. 70, Map 64

schaeflini; Stierlin (1866:31), incorrect original spelling

schlaeflii Stierlin 1866:31 [Heikertinger (1951:183), emendation here considered as justified because of prevailing usage of name (Article 33.2.3.1) rather than evidence for inadvertent error in description (Article 32.5.1)]; (type locality: Iraq, "Bagdad"; type depository: unknown); as *Plectroscelis*

tarda Motschulsky 1845a:107 (not Foudras 1860; type locality: "Caucase"; type depository: unknown); as *Cardiapus*; Heikertinger 1951:210 (synonymized)

persica Baly 1877b:167 (type locality: "Persia"; type depository: BMNH, lectotype designated here); Heikertinger 1951:210 (synonymized)

impunctifrons Pic 1909:138 (type locality: "Turcménie"; type depository: MNHN); Heikertinger 1951:210 (synonymized)

Distribution: Afghanistan, Iran (Lopatin 1990), Iraq (Gruev 1995a), Turkmenistan.

Host plants: Cotton, *Cajanus indicus*, *Corchorus olitorius* (Pollard 1956).

Description: Body length (excluding head) 2.97–3.54 mm, width 1.54–1.83 mm. Ratio of elytron length at suture to maximum width, 2.65–2.84. Ratio of pronotum width at base to length at middle, 1.75–1.82. Ratio of length of elytron at suture to length of pronotum at middle, 3.17–3.21. Ratio of width of both elytra at base to width of pronotum at base, 1.08–1.11. Ratio of maximum width of both elytra to maximum width of pronotum, 1.17–1.26.

Elytron copperish without yellow. Pronotum copperish. Antennomere 1–5 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus wide and deep with vertical walls or relatively deep, well-defined, emarginate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.40–1.50. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum present throughout. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum nearly straight, converging anteriorly. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with sides parallel to each other. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.31–1.33. First and second male protarsomere length to length ratio, 1.50–1.54. First and second male protarsomeres width to width ratio, 1.15–1.23. Length of metatibia to distance between denticle and metatibial apex 2.68–2.78. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, obtuse. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 3.44–3.58. First male protarsomere maximum width to width at base ratio, 2.62–2.67. First and second male metatarsomere length to length ratio, 1.82–1.91. First and second male

metatarsomere width to width ratio, 0.90–1.00. Third and fourth male metatarsomere length to length ratio, 1.93–2.11.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle and basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top, rarely poorly differentiated; slightly curved dorsally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle wider than apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly. Anterior sclerotization of vaginal palpus sinusoidal. Anterior end of anterior sclerotization acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great or greater than width of anterior sclerotization.

Remarks: We were unable to find the type material of this species so we based our concept of it on the specimens from the Heikertinger collection (NHMB) that seem to come from the Stierlin collection and are marked by a word “type” which in the case of Heikertinger often means that they either come from the type locality or are compared with the types. By the presence of the conspicuous longitudinal impressions at the base of the pronotum, *C. schlaeflii* is similar to *C. chlorophana* and *C. pelagica*. It can be easily differentiated from them by the aedeagus being more cylindrical in lateral view and the ventral side lacking a ventral groove at the base (the groove is present in *C. chlorophana* and *C. pelagica*).

Type material: *Chaetocnema persica*: Lectotype male. 1) (illegible, small green lable), 2) Persia, 3) Type H.T., 4) *Chaetocnema persica* Baly, Persia, 5) Lectotype *Chaetocnema persica* Baly des. A. S. Konstantinov 2010, 6) *Chaetocnema schlaeflii* Stierlin det. A. Konstantinov, 2010 (BMNH).

Material: AFGHANISTAN: 1) Kuschke, Coll. Hauser 1896, 2) *Chaetocnema schlaeflii* Stierl., Heikertinger det. (14 NHMW); 1) Afghanistan, Kuschke, Coll. Hauser 1896, 2) Collect. Hauser, 3) *Chaetocnema schaffleri* Kutsch, 4) Coll. Mus. Vindob., 5) *Chaet. schlaeflii* Stier. (1 NHMW); IRAN: 1) Iran, 4.IV.1909, Zarudnyi (4 ZMAS); 1) Persia, Serars, 1.VIII.92b, 2) on light, 3) *Ch. schlaeflii* Strl., det. Konstantinov A., 4) Fe-

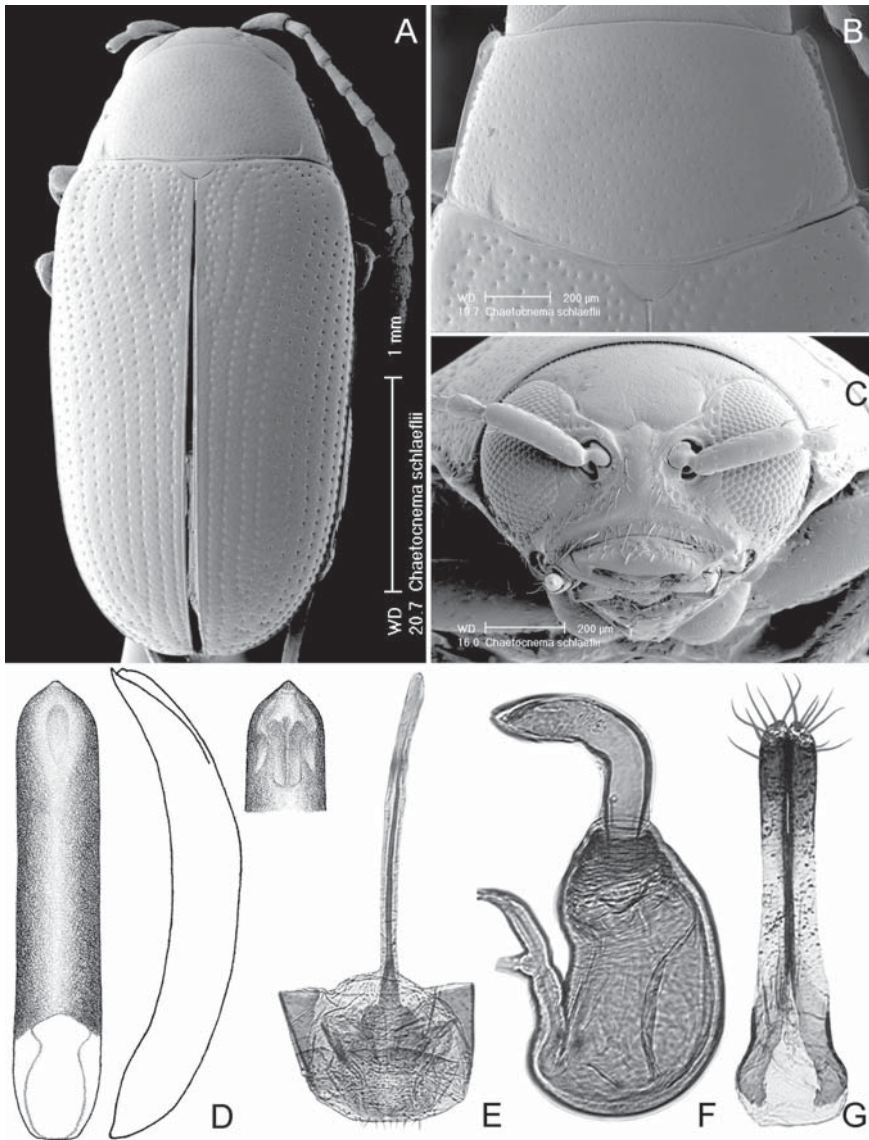
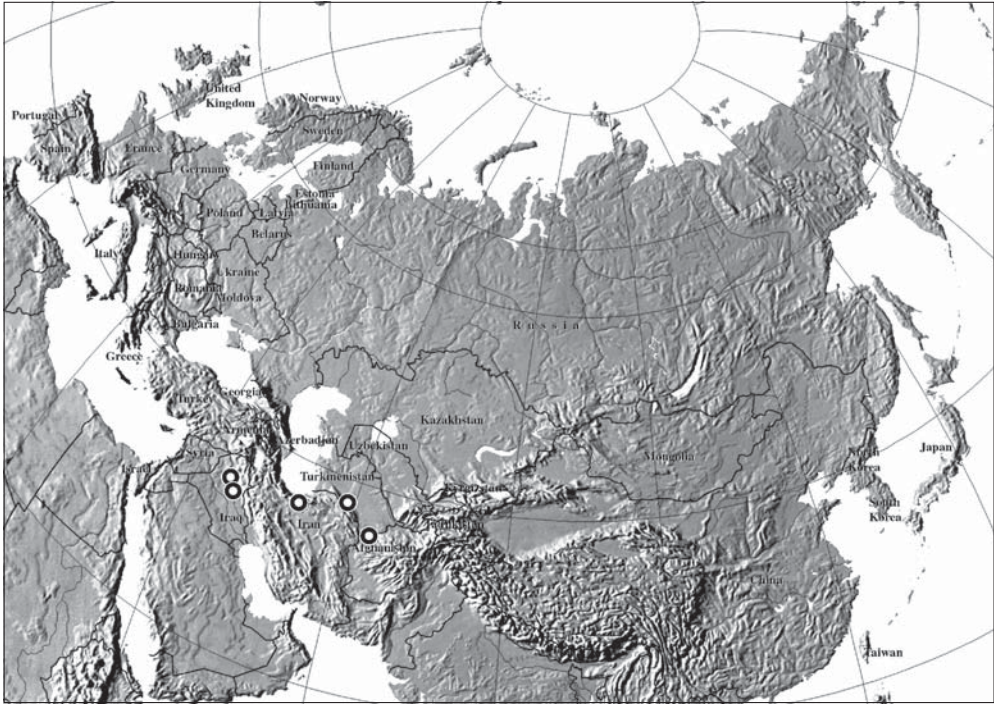


Figure 70. *Chaetocnema schlaeflii*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

male [symbol] (1 USNM); IRAQ: 1) erseng Pietschmann, Mesopot. Exp. Nat. O.V.1910, 2) *Chaetocnema schlaeflii* Stierlin, Heikertinger det. (11 NHMB); 1) gegenüber von Samarra, Pietschmann, Mesopot. Exp. Nat. O.V. 1910., 2) *Chaetocnema schlaeflii* Stierlin, Heikertinger det. (14 NHMW); 1) Kasr Nagib (Bagdad) Pietschm., Mesopot. Exp. Nat. O.V.1910, 2) *Chaetocnema schlaeflii* Stierlin, Heikertinger det. (15 NHMB); 1) Kasr



Map 64. *Chaetocnema schlaeflii*

Nagib, (Bagdad) Pietschm. Mesopot. Exp. Nat. O.V. 1910. (Heikertinger's "det" label on the first specimen of this series has the name "schaefflini". A. K.), 2) *Chaetocnema schlaeflii* Stierl., Heikertinger det. (52 NHMW); 1) Bagdad, Coll. Stierlin, 2) Type ! e Coll. Stierl., "Schlaeflini", 3) *Chaet. Schlaeflini* Stierl., *Cotypus, Schläflii*, det. Heiktgr., 4) 1953 Coll. Heikertinger (1 NHMB); 1) Coejai All, *Schlaeflini*, Bagd. Strl. x, 2) *Schläflii*, det. Heiktgr., 3) 1953 Coll. Heikertinger (1 NHMB); 1) Kasr Nagib (Bagdad) Pietschm., 2) Mesopot. Exp., Nat. O. V. 1910, 3) Coll. Mus. Vindob. (2 NHMW); TURKMENISTAN: 1) Transcasp., Dartkuju 4.1900, Coll. Hauser., 2) Collect. Hauser, 3) *Chaetocn. Schlaeflii*, det. Heiktgr., 4) Coll. Mus. Vindob. (1 NHMW).

***Chaetocnema semicoerulea* (Koch)**

Fig. 71, Map 65

semicoerulea Koch 1803:40 (type locality: Germany, Rheinland, "Kusel und Meisenheim"; type destroyed *teste* Doguet 1994); as *Haltica saltitans* Stephens 1831:327 (type locality: "Suffolk"; type depository: unknown); Weise 1886:760 (synonymized)

meridionalis Allard 1859:cv (type locality: "France méridionale"; type depository: unknown); as

Plectroscelis; Heikertinger 1951:211 (synonymized)

saliceti Weise 1886:758 (as variety of *semicoerulea*; type locality: not given; type depository:

ZMHB); Heikertinger 1951:211 (synonymized)

femoralis Weise 1886:758 (as variety of *semicoerulea*; type locality: not given; type depository:

ZMHB); Heikertinger 1951:211 (synonymized)

Distribution: Albania (Gruev 1992), Austria (Redtenbacher 1849), Azerbaijan (Samedov & Mirzoeva 1986), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1988b), Croatia (Gruev 1992), Czech Republic, Estonia, France (Doguet 1994), Georgia (Konstantinov 1988), Germany (Weise 1886), Greece (Gruev & Döberl 1997), Hungary (Vig 1996), Italy (Biondi 1990a), Kazakhstan (Lopatin 1977b), Latvia (Pūtele 1971), Lithuania, Luxembourg, Macedonia (Gruev 1992), Montenegro (Gruev 1979), Netherlands (Leesberg 1881), Poland, Romania (Gruev *et al.* 1993), Russia (Caucasus) (Konstantinov 1988), Serbia (Gruev 1979), Slovakia, Slovenia, Spain (Bastazo *et al.* 1993), Switzerland (Stierlin 1886), Turkey (Gruev & Kasap 1985), Ukraine.

Host plants: *Salix alba*, *S. purpurea*, *S. triandra*, *S. incana*, *S. viminalis*, *Calamagrostis*, *Phalaris* (Heikertinger 1925); *Salix alba*, *S. purpurea*, *S. triandra*, *S. viminalis*, *S. elaeagnos* (Doguet 1994); *Salix alba*, *S. purpurea* (Fogato & Leonardi 1980).

Description: Body length (excluding head) 2.08–2.70 mm; width 1.24–1.67 mm. Ratio of elytron length at suture to maximum width, 2.26–2.46. Ratio of pronotum width at base to length at middle, 1.61–1.65. Ratio of length of elytron at suture to length of pronotum at middle, 3.13–3.16. Ratio of width of both elytra at base to width of pronotum at base, 1.15–1.16. Ratio of maximum width of both elytra to maximum width of pronotum, 1.40–1.50.

Elytron bronzish without yellow, blueish without yellow or copperish without yellow. Pronotum bronzish, greenish or copperish. Antennomere 1–4 completely yellow. Antennomere 5 completely yellow or partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 0.81–1.11. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly; rarely with two short impressions visible only near basal margin. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered

with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 2.20–2.25. First and second male protarsomere length to length ratio, 1.13–1.19. First and second male protarsomeres width to width ratio, 1.61–1.67. Length of metatibia to distance between denticle and metatibial apex 2.37–2.45. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.97–3.06. First male protarsomere maximum width to width at base ratio, 2.12–2.19. First and second male metatarsomere length to length ratio, 1.71–1.78. First and second male metatarsomere width to width ratio, 1.00–1.06. Third and fourth male metatarsomere length to length ratio, 1.54–1.59.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half, middle, and basal half of aedeagus poorly developed, shallow, with obtuse margins or absent. Apical and basal parts of longitudinal groove subequal in width, wider than middle. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view sinusoidal near apex with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum strongly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrow at base, widening posteriorly. Anterior sclerotization of vaginal palpus slightly widening anteriorly; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or greater.

Remarks: *Chaetocnema semicoerulea* is the only species among Palearctic *Chaetocnema* that feeds on woody plants, mostly willows. It has an unusual aedeagus that helps to distinguish it from most Palearctic *Chaetocnema*, including its former subspecies *C.*

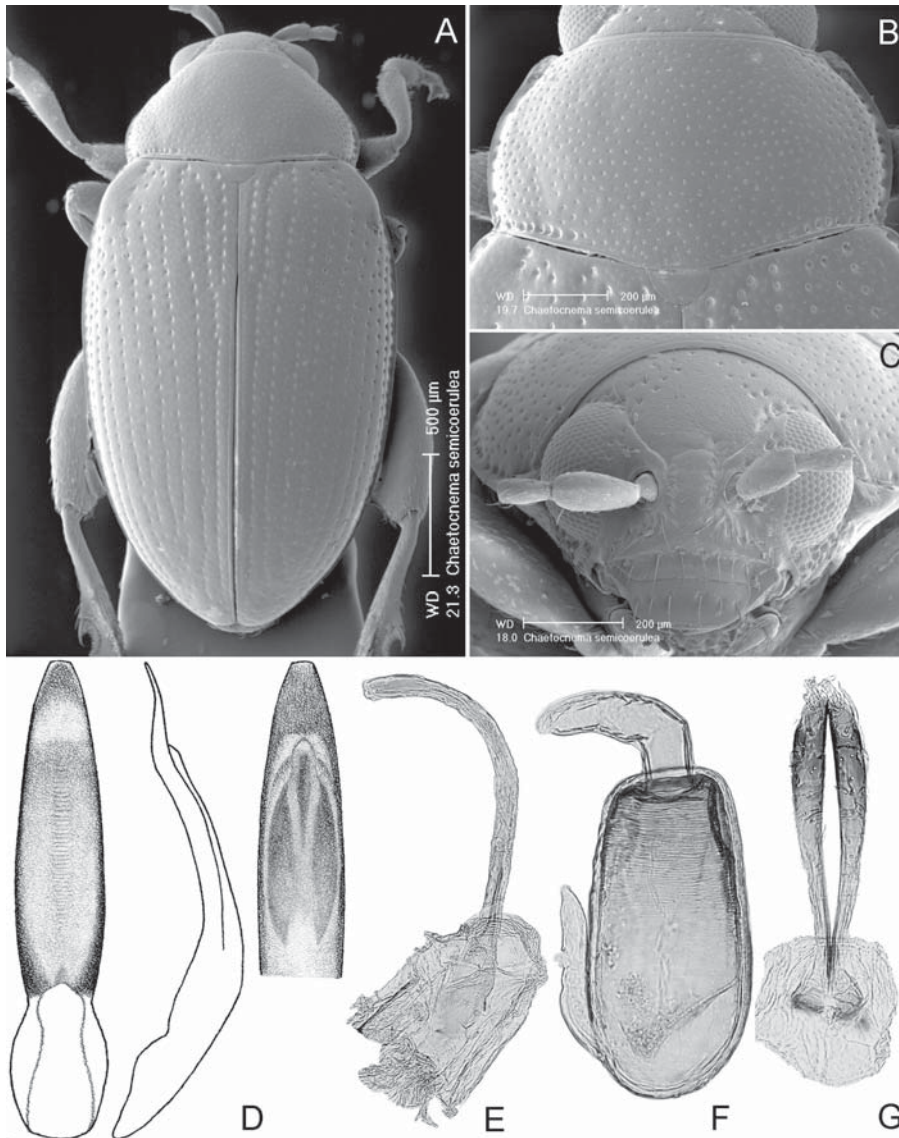
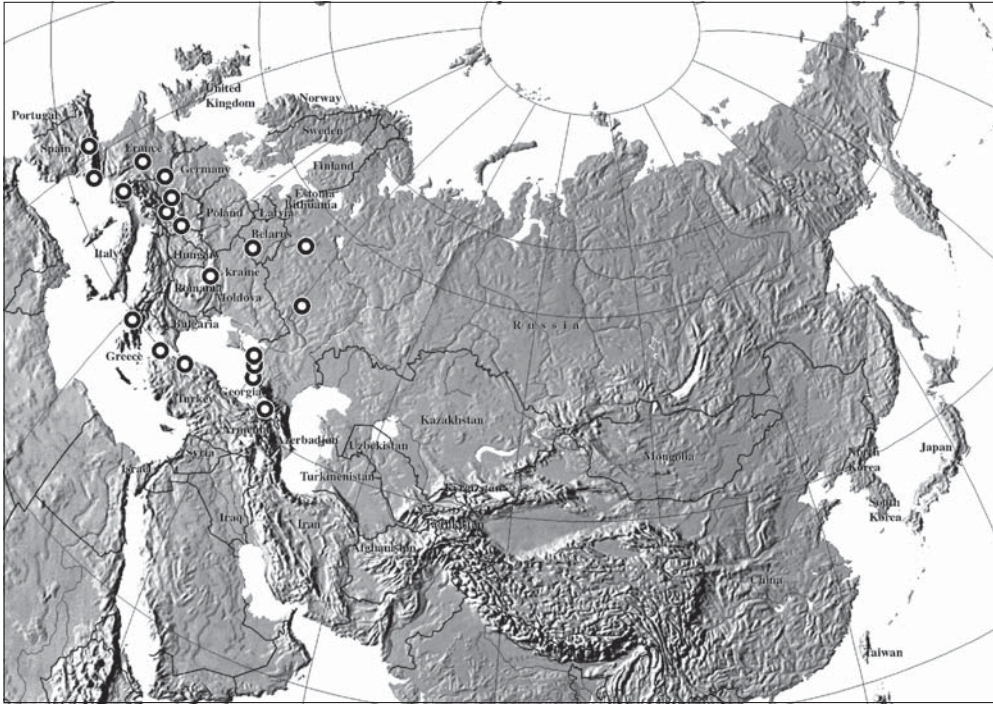


Figure 71. *Chaetocnema semicoerulea*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

transbaicalica, which we elevate here to species status. The aedeagus of *C. semicoerulea* narrows gradually from the base to the apex, in *C. transbaicalica* the aedeagus is more or less parallel-sided.

Heikertinger (1951) considered *C. meridionalis* (Allard) as a junior synonym of *C. semicoerulea* and *C. meridionalis* (Foudras) as a junior synonym of *C. obesa*. As discussed



Map 65. *Chaetocnema semicoerulea*

under *C. obesa*, the descriptions provide very little support for these conclusions and types do not seem to exist; Allard (1859) and Foudras (1860) merely used a Dejean manuscript name for undocumented material. We follow here Heikertinger (1951) and maintain *C. meridionalis* (Allard, not Foudras) in synonymy with *C. semicoerulea*, thereby protecting the name *C. obesa*.

Material: AUSTRIA: 1) Ascholding. Au. Obb. 18.V.1960, leg. Freude, 2) *Chaetocnema semicoerulea*, Mohr det. (1 ZSMC); 1) Golling., Slzb [Salzburg] (2 BMNH); 1) Wien, Donau (1 BMNH); 1) Wien, Donau., 2) *Chaetocnema semicoerulea*, Heikertinger det. (5 NHMW); BELARUS: 1) Belarus: Gomel terr. Turov env. 11.VI.1980 52°04'00"N 27°44'00"E, wet meadow swamp, leg. A. Konstantinov, 2) *Chaetocnema semicoerulea* (Koch) det. A.S. Konstantinov (1 USNM); FRANCE: 1) Ange Gardien, Savines, Bec d'Allier, Chatel de Neuvre, Chemilly, Reutte Tirol, May-July, leg. M. Bergeal (20 BCPF); 1) Evian, Haute-savoie, June, 1909, leg. G. A. K. Marshall (1 BMNH); 1) Larche, Basses-Alpes (2 BMNH); GEORGIA: 1) Georgia, Abhasia, Pitsunda, Bzyb' river, 4.VIII.1983, 43°09'25"N 40°21'00"E, leg. A. Konstantinov, 2) *Chaetocnema semicoerulea* (Koch) det. A.S. Konstantinov (3 USNM); 1) Georgia: Abkhazia, NW Caucasus, N Gudauta, Pskhu 43°23'38"N 40°49'31"E, 17.VI.1984, Bzyb' river, 1700 m, leg. A. Konstantinov, 2) *Chaetocnema semicoerulea*, det. A. S. Konstantinov, 2004 (9 USNM); 1) Georgia: Abkhazia,

NW Caucasus, N Gudauta, Pskhu 43°23'38"N 40°49'31"E, 17.VI.1984, Bzyb' river, 1700 m, leg. A. Konstantinov, 2) *Chaetocnema semicoerulea*, det. A. S. Konstantinov, 2004 (24 USNM); 1) Tbilisi, 10.VIII.64, 2) *Chaetocnema semicoerulea* Koch, I. K. Lopatin det. 1968, 3) *Chaetocnema semicoerulea* Koch No. 28 (1 USNM); 1) Georgia, 24.7.83, Ahaldaba, willow, Konstantinov, A.S. (3 USNM); 1) Ahaldaba-Hashuri, 19.7.83, Konstantinov A.S. (1 USNM); GERMANY: 1) Grunwald, 7.V.-27.IX.1913, L. Dycke (3 ZSMC); 1) Isartal, Grunwald, 6.VI.1918, Dycke (2 ZSMC); 1) Wurzach Ried: Biberach, July 28, 1987, leg. M. Bergeal (1 BCPF); GREECE: 1) Epire: Korytiani (Sauliae), June 7, 1997, leg. B. & M. Bergeal (7 BCPF); RUSSIA: 1) N.W. Caucasus, 11.VI.84, env. Krasnaya Polyana, Azmich, 1600-2100 m, leg. A. Konstantinov (4 USNM); 1) Russia, Krasnodar reg., 5 km NE Golovinka, 03.VI.1999, leg. A. Konstantinov (1 USNM); 1) Russia: NW Caucasus, env. of Krasnaya Polyana, ur Azmich 1600 m, 11.VI.1984 alp meadows, leg. A. Konstantinov, 2) *Chaetocnema semicoerulea* (Koch) det. A.S. Konstantinov (3 USNM); 1) env. of Tuapse, 29.6.82, A. Konstantinov, 2) *Chaetocnema semicoerulea* Koch. (1 USNM); 1) Michurinsk, 2) *Chaetocnema semicoerulea* Koch, I. K. Lopatin det. 1975 (1 USNM); 1) Russia: 5 km NE Golovinka, Sweeping along Shakhe River, 43°47'28"N, 39°28'33"E, June 3, 1999, S. Lingafelter, 2) *Chaetocnema semicoerulea* (Koch) (1 USNM); SPAIN: 1) "España", 2) *Chaetocnema semicoerulea* (Koch), Baselga det. (2 MNCN); 1) Gerona, Tordera, July 20, 1994, leg. Stehling (1 BCPF); 1) La Rioja, Nieva de Cameros, 2) *Chaetocnema semicoerulea* (Koch), Baselga det. (1 MNCN); TURKEY: 1) Besika Bay (1 BMNH); 1) NW Sabanja (Sapanca), 9-10.V.1966, leg. A. Reichter, 2) *Chaetocnema semicoerulea*, Mohr det. (2 ZSMC); UKRAINE: 1) Carpathians, 23.VIII.90, mount Goverla, Maksimenkov M., 2) Ch. (Tl.) *semicoerulea* (Koch), det. A. S. Konstantinov, 2002 (1 USNM).

***Chaetocnema septentrionalis* Kimoto, status restored**

Fig. 72, Map 66

septentrionalis Kimoto 1963:18 (type locality: Japan, "Ashoro in Tokachi, Hokkaido"; type depository: KUEC); Kimoto & Hiura 1971:5 (synonymized with *C. koreana* Chûjô).

Distribution: Japan (Kimoto 1963).

Host plants: unknown.

Description: Body length (excluding head) 2.27–2.32 mm, width 1.29–1.34 mm. Ratio of elytron length at suture to maximum width, 2.78–2.93. Ratio of pronotum width at base to length at middle, 1.71–1.73. Ratio of length of elytron at suture to length of pronotum at middle, 3.15–3.43. Ratio of width of both elytra at base to width of pronotum at base, 1.12–1.15. Ratio of maximum width of both elytra to maximum width of pronotum, 1.38–1.43.

Elytron greenish without yellow. Pronotum bronzyish. Antennomere 1–4 completely yellow. Antennomere 5 partly brown. Pro-, mesotibia yellow. Metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, re-tuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.12–1.33. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 3–10 punctures near eye.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum present throughout. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.27–1.40. First and second male protarsomere length to length ratio, 1.52–1.63. First and second male protarsomeres width to width ratio, 1.16–1.21. Length of metatibia to distance between denticle and metatibial apex 2.22–2.40. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.52–2.67. First male protarsomere maximum width to width at base ratio, 1.73–1.91. First and second male metatarsomere length to length ratio, 1.51–1.56. First and second male metatarsomere width to width ratio, 0.98–1.02. Third and fourth male metatarsomere length to length ratio, 1.82–1.86.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening subequal to or wider than region just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal. Ventral surface of aedeagus lateral to median groove convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus absent; poorly developed with obtuse margins in basal half. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated or absent; straight in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; apically present and wider than those on basal part. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Remarks: Although *C. septentrionalis* and *C. koreana* are undoubtedly close to each other, we found some differences between them: suprafrontal sulcus deep laterally, absent in middle (in *C. koreana* it is deep laterally, but shallow in middle); deep row of large punctures on base of pronotum present throughout (present only on sides in *C.*

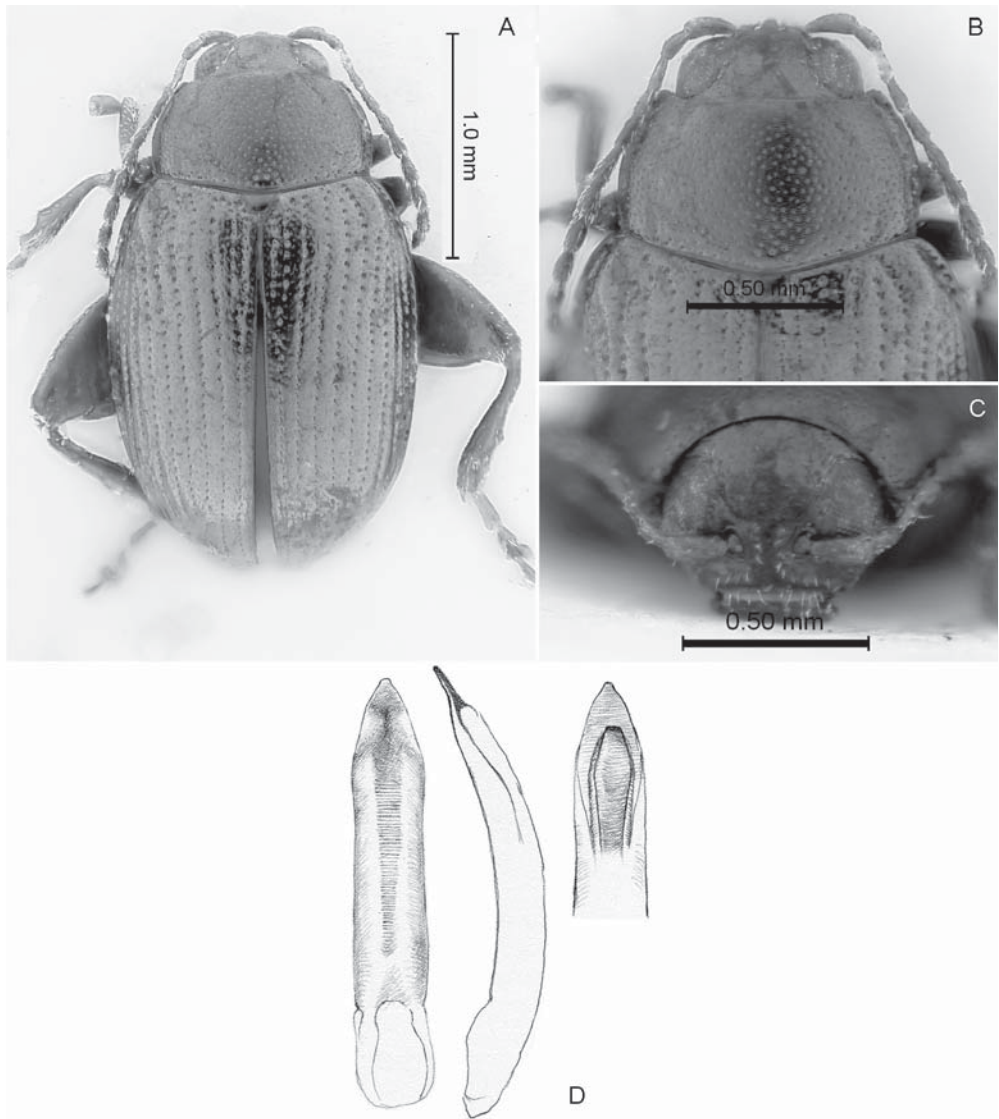
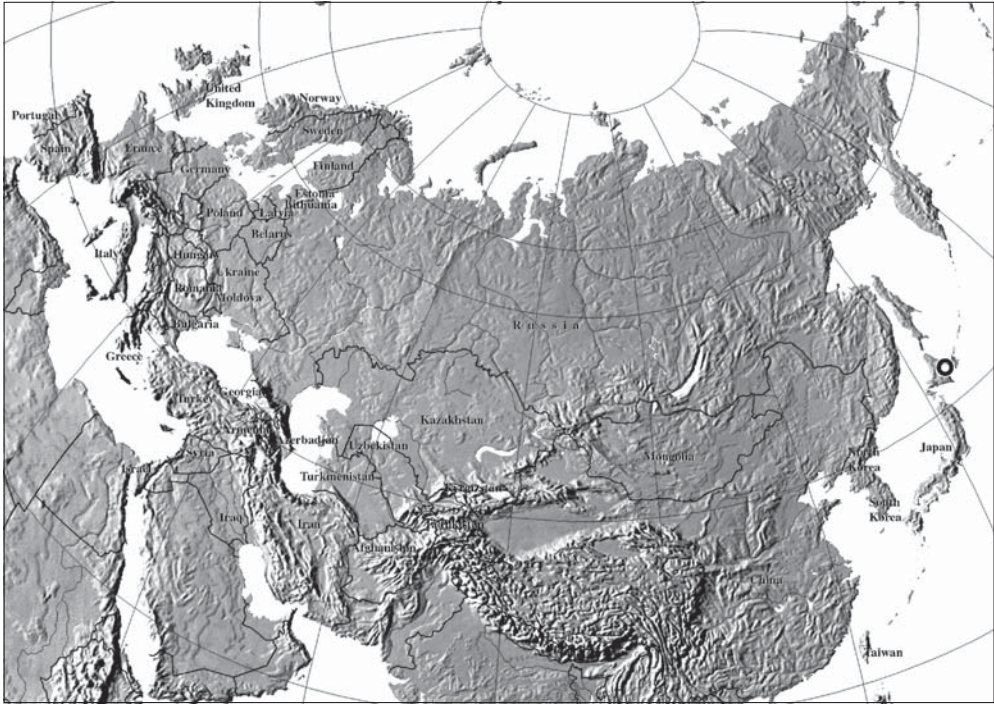


Figure 72. *Chaetocnema septentrionalis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.

koreana); pronotal base evenly convex (slightly expanded in middle in *C. koreana*); apical denticle of aedeagus in lateral view straight (slightly curved dorsally in *C. koreana*); and minute transverse wrinkles on apical part of ventral side of aedeagus wider than those on base of aedeagus (narrower than those on base of aedeagus in *C. koreana*). Based on these characters we treat *C. septentrionalis* as a valid species.



Map 66. *Chaetocnema septentrionalis*

Type material: *Chaetocnema septentrionalis*: Paratype male: 1) Hokkaido (Tokachi Prov.), Ashoro, July 29, 1959, leg. K. Morimoto (2 BMNH); Paratype male: 1) Paratype, 2) (Hokkaido), Ashoro, Tokachi Prov., 29.VII.1959, K. Morimoto, 3) Brit. Mus., 1967-133, 4) *Chaetocnema* (*Tlanoma*) *septentrionalis* Kimoto, 6) Male (1 BMNH).

***Chaetocnema shabalini* Palij**

Fig. 73, Map 67

shabalini Palij 1968:17 (type locality: Kyrgyzstan, "Tien-Shan, intersection of Chatkal and Fergana mountain ridges, Tash-Kumyr"; type depository: unknown; paratypes ZMAS)

Distribution: Kyrgyzstan (Palij 1968, Lopatin 1977b).

Host Plants: *Salsola* (Palij 1968)

Description: Body length (excluding head) 1.62–1.69 mm; width 0.86–0.91 mm. Ratio of elytron length at suture to maximum width, 2.87–2.89. Ratio of pronotum width at base to length at middle, 1.68–1.71. Ratio of length of elytron at suture to length of pronotum at middle, 3.09–3.12. Ratio of width of both elytra at base to width

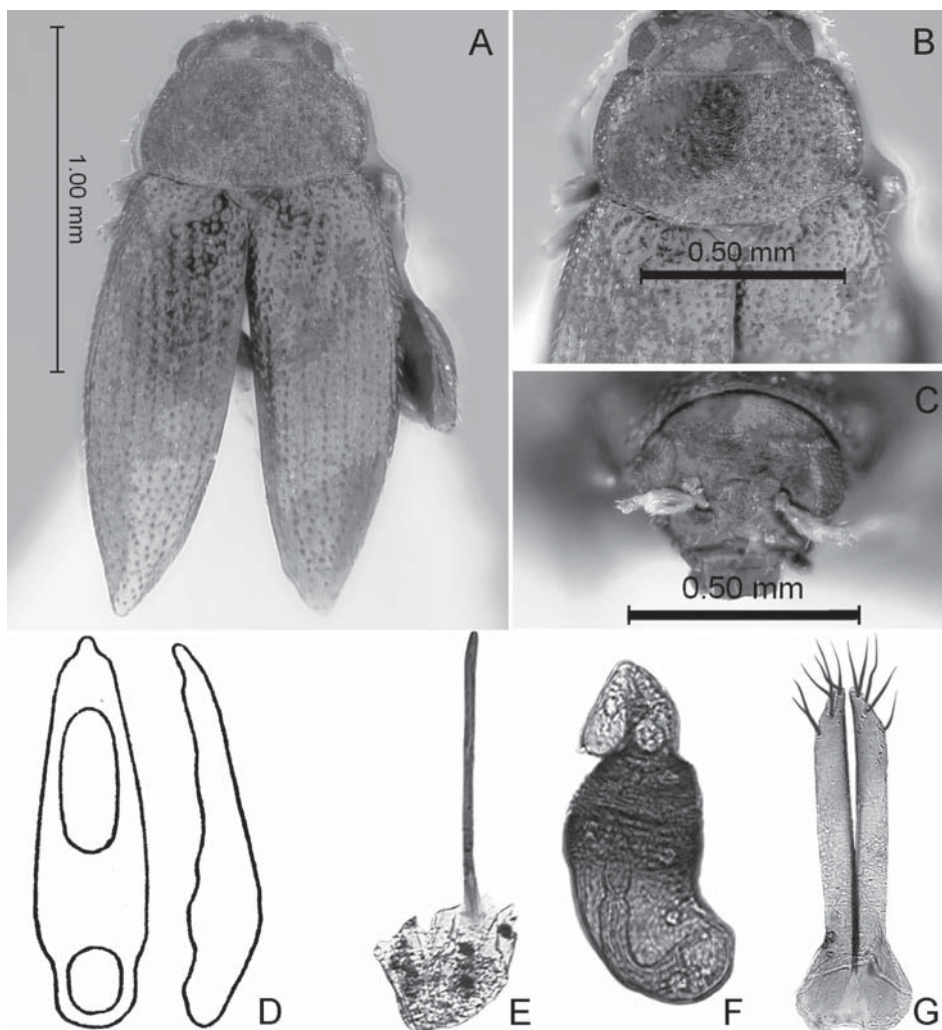
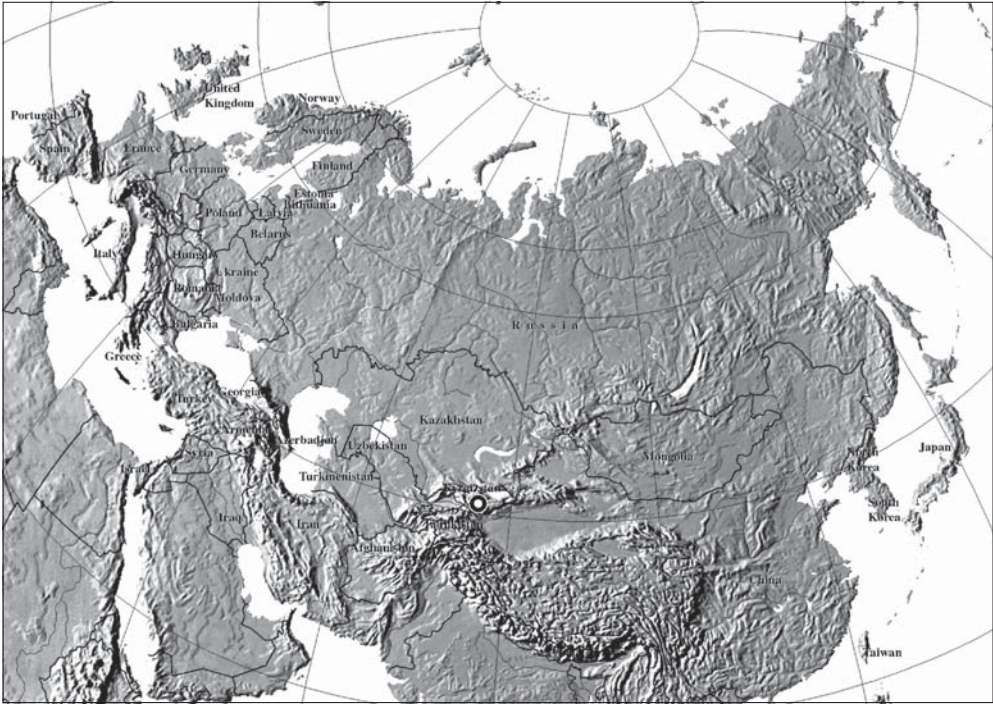


Figure 73. *Chaetocnema shabalini*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

of pronotum at base, 1.00–1.02. Ratio of maximum width of both elytra to maximum width of pronotum, 1.20–1.24.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, mesofemur partly brown. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present or absent. Suprafrontal sulcus shallow and faint, straight to shallowly retuse. Ratio of width of frontal ridge between outer ridge of antennal



Map 67. *Chaetocnema shabalini*

sockets to width of antennal socket (including surrounding ridge), 2.50–2.54. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 3–5 punctures near eye.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity shorter than lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second row of punctures on elytron base confused. Third through sixth rows of punctures regular. Elytral humeral callus poorly developed.

Length of metatibia to distance between denticle and metatibial apex 2.42–2.44. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle convex in dorsal view.

Apical third of aedeagus narrowing. Apical part of aedeagus in ventral view narrowing abruptly. Ventral longitudinal groove in apical half and middle of aedeagus poorly devel-

oped, shallow, with obtuse margins; well-developed, with obtuse margins in basal half. Apical, middle, and basal parts of longitudinal groove subequal in width. Width of ventral longitudinal groove in middle greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, rounded on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view nearly straight with maximal curvature situated basally.

Spermathecal pump much shorter than receptacle. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum widening into amorphous sclerotization. Midsection of tignum nearly straight. Anterior sclerotization of tignum narrower than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Midpart of vaginal palpus (before apex) parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization about as great as that of anterior.

Remarks: The original description of *C. shabalini* states that the holotype of this species is deposited in the collection of the Institute of Zoology of the Ukrainian Academy of Sciences in Kiev (Palij 1968), however it could not be located (V. Korneev, personal communication). We base our concept of this species on the female paratype that is kept at the collection of ZMAS. Unfortunately that paratype is slightly teneral, so its spermatheca is misshaped. The illustration of the aedeagus comes from Palij (1968).

Type material: *Chaetocnema shabalini*: Paratype female: 1) Tien-Shan, p. Charkala, 22.IV.66, 2) Allotypus, *Chaetocnema schabalini* Palij, 3) *Chaetocnema schabalini* Palij, No. 94 (1 ZMAS).

Material: KYRGYZSTAN: 1) Middle Asia, Tash-Kumyr, 22IV.1966, leg. Palij, 2) *Chaetocnema shabalini* Palij, Gruiev det. (3 ZSMC).

***Chaetocnema sinuata* Weise**

Fig. 74, Map 68

sinuata Weise 1889:633 (type locality: not given; type depository: ZMHB; lectotype designated here)

Distribution: China (Inner Mongolia) (Weise 1889, Medvedev 1979).

Host plants: unknown.

Description: Body length (excluding head) 2.21 mm; width 1.32 mm. Ratio of elytron length at suture to maximum width, 2.88. Ratio of pronotum width at base to length at middle, 1.41. Ratio of length of elytron at suture to length of pronotum

at middle, 2.58. Ratio of width of both elytra at base to width of pronotum at base, 1.14. Ratio of maximum width of both elytra to maximum width of pronotum, 1.41.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1 partly dark brown or completely brown. Antennomere 2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia yellow or partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.57. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.31. First and second male protarsomere length to length ratio, 1.75. First and second male protarsomeres width to width ratio, 1.45. Length of metatibia to distance between denticle and metatibial apex 2.70. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.60. First male protarsomere maximum width to width at base ratio, 2.66. First and second male metatarsomere length to length ratio, 1.73. First and second male metatarsomere width to width ratio, 1.11. Third and fourth male metatarsomere length to length ratio, 2.40.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening compared to width just before apical declivity greater or subequal. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove flat and horizontal, apically and at middle; basally convex or flat. Ventral longitudinal groove in apical half and middle of aedeagus shallow with sharp margins; well-developed, with sharp margins in basal half. Apical and middle part of longitudinal groove narrower than basal; middle part wider than apical. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top, or well-differentiated, tall,

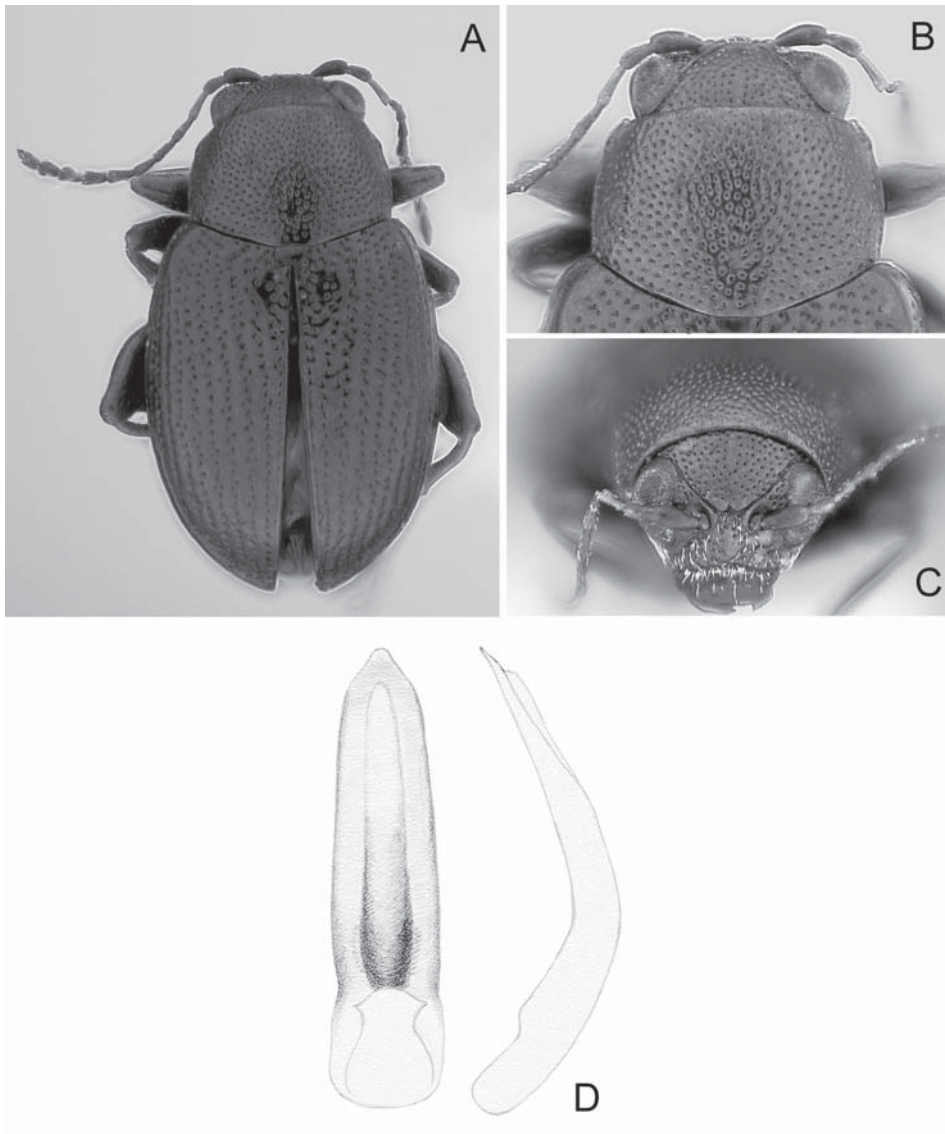
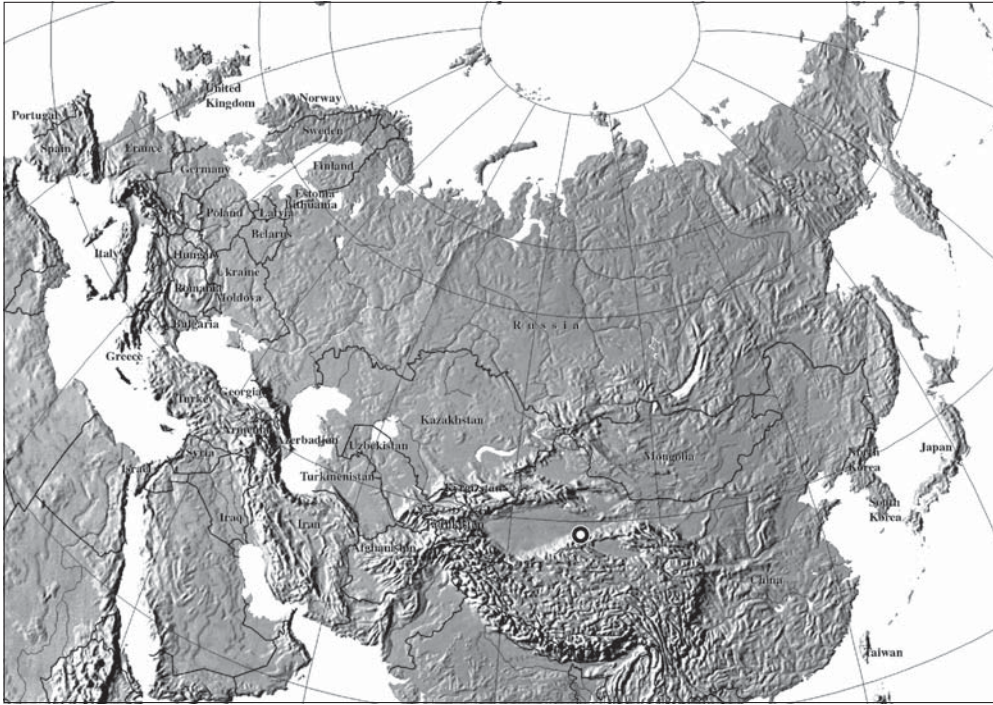


Figure 74. *Chaetocnema sinuata*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral.

rounded on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view abruptly curved with maximal curvature situated basally.

Remarks: The original description of *C. sinuata* does not give the type locality, however based on G. N. Potanin's travel, it is North China, Inner Mongolia, and



Map 68. *Chaetocnema sinuata*

the lectotype label confirms this. Relatively large, blue *Chaetocnema* specimens from Middle and Central Asia were previously identified as *C. sinuata* (Lopatin 1977a), which included *C. grandis* Pic as a synonym. However, our study of the type material of *C. sinuata* and *C. grandis* showed that they belong to two different species that can be identified based on the shape of the aedeagus. In *C. sinuata* the transverse wrinkles are present on the sides of the ventral groove of the aedeagus. They are absent in *C. grandis* as well as in *C. igori* (another species similar to *C. sinuata*).

Type material: *Chaetocnema sinuata*: Lectotype male: CHINA. 1) Kan ssu, Potanin; 2) male symbol; 3) ex Coll J. Weise; 4) *Chaetocnema sinuata* Ws.; 5) Syntypus, *Chaetocnema sinuata* Weise 1889, labelled by MNHUB 2009, 6) Lectotype *Chaetocnema sinuata* Weise des. A. S. Konstantinov et al. 2009 (ZMHB)

***Chaetocnema splendens* (Motschulsky)**

Figs. 6, 75, Map 69

splendens Motschulsky 1845a:108 (type locality: Russia, "Daourie"; type depository: ZMAS; lectotype designated here), as *Udorpes*

aenea Motschulsky 1860:235 (not Waterhouse 1838) (type locality: Russia, "Daourie"; type depository: unknown); Heikertinger 1951: 212 (synonymized)

daurica Heyden 1881:212 (replacement name for *aenea* Motschulsky 1860, not Waterhouse 1838 [Heyden referred to Baly without date]); Heikertinger 1951:212 (synonymized)

Distribution: China, Kazakhstan (Konstantinov 1988), Mongolia (Král 1967b), Russia (Irkutsk, Buryatia, Tuva, Primorsky Krai) (Motschulsky 1860).

Host plants: unknown.

Description: Body length (excluding head) 2.37–2.75 mm; width 1.24–1.51 mm. Ratio of elytron length at suture to maximum width, 2.74–2.92. Ratio of pronotum width at base to length at middle, 1.31–1.45. Ratio of length of elytron at suture to length of pronotum at middle, 2.71–3.05. Ratio of width of both elytra at base to width of pronotum at base, 1.19–1.28. Ratio of maximum width of both elytra to maximum width of pronotum, 1.43–1.51.

Elytron blueish without yellow, rarely bronzy without yellow or copperish without yellow. Pronotum bronzy or copperish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Protibia partly brown. Meso-, metatibia yellow. Pro-, mesofemur brown or yellow with metallic green anteriorly. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate or retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.00–2.03. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum with longitudinal strip lacking punctures. or absent. Area adjacent to mid-basal margin of pronotum lacking punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.87–1.93. First and second male protarsomere length to length ratio, 2.00–2.04. First and second male protarsomeres width to width ratio, 1.23–1.33. Length of metatibia to distance between denticle and metatibial apex 2.79–2.85. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.21–2.27. First male

protarsomere maximum width to width at base ratio, 2.00–2.04. First and second male metatarsomere length to length ratio, 1.67–1.71. First and second male metatarsomere width to width ratio, 1.23–1.27. Third and fourth male metatarsomere length to length ratio, 2.29–2.33.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; well-developed, deep, with obtuse margins or poorly developed, shallow, with obtuse margins in middle; poorly developed with obtuse margins in basal half. Apical and middle part of longitudinal groove as wide or wider than basal; middle part of longitudinal groove as wide as or narrower than apical. Width of longitudinal groove at middle subequal to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent strongly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximal curvature situated basally.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening, losing sharp border. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly narrowing anteriorly; slightly and evenly curved along length or nearly straight. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema splendens* can be separated from most Palearctic species based on the apical part of the aedeagus that is sharply bent ventrally in lateral view. *Chaetocnema ljudmilae*, a former subspecies of *C. splendens* that we here elevated to specific status, has the same character state. *Chaetocnema splendens* can be separated from *C. ljudmilae* based on the apex of the aedeagus, which narrows more abruptly than that of *C. ljudmilae*.

Type material: *Chaetocnema splendens*: Lectotype, male: 1) [gold circle], 2) *Hydropus splendens* Motsch, Dauria Baie, 3) c. Motschulsky, 4) Lectotype *Chaetocnema splendens* Motschulsky des. A. Konstantinov (ZMAS). Paralectotypes: the same label as lectotype (3 ZMAS).

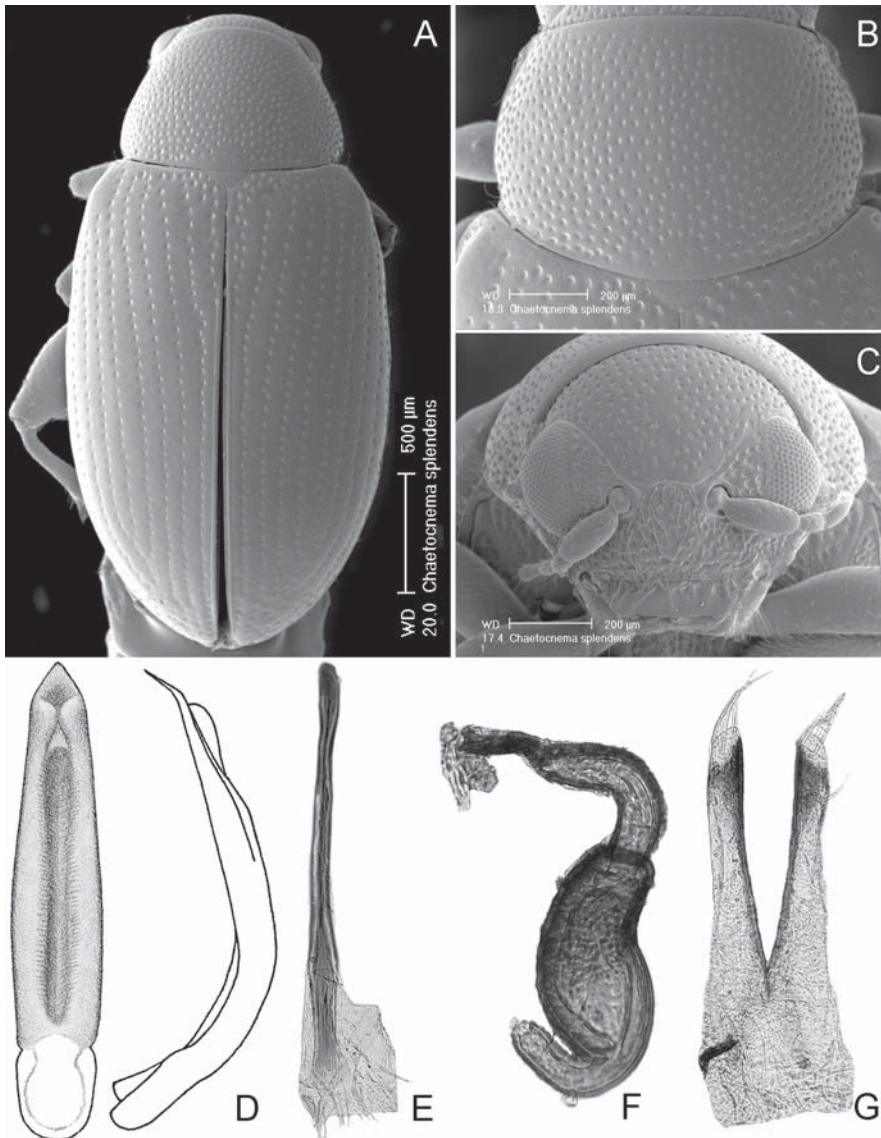
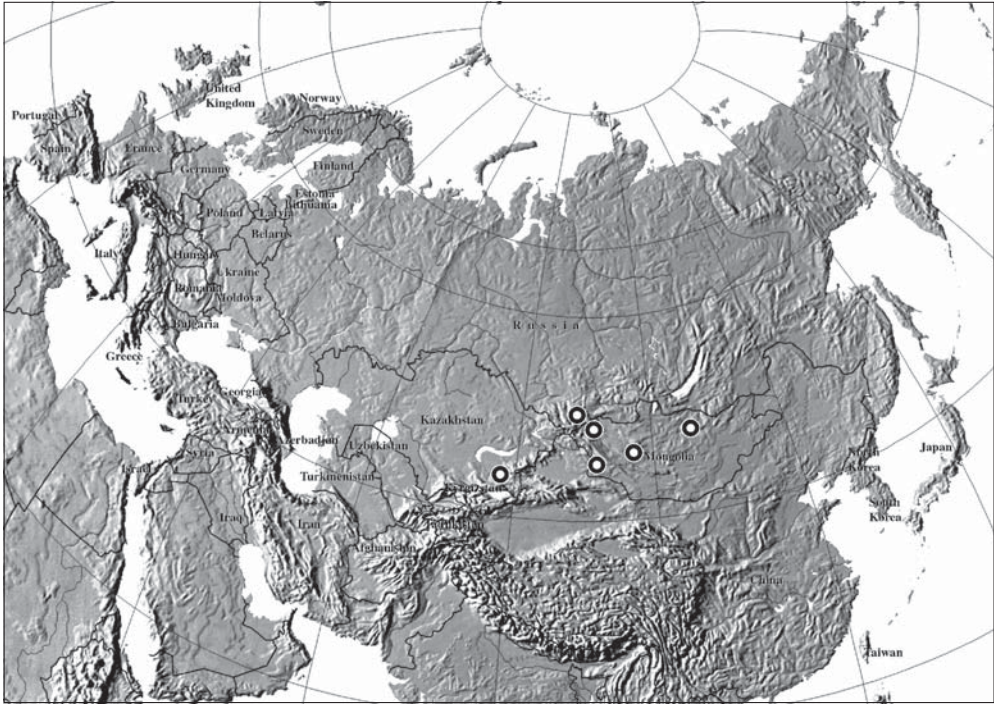


Figure 75. *Chaetocnema splendens*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

Material: KAZAKHSTAN: 1) Iliisk. r-on, river Ili, B. S. Kuzmin, 6.VI.1947, 2) *Chaetocnema splendens* Motsch, A. Lubischew det (1 ZMAS); MONGOLIA: 1) Kobdoskii aimak, 15 km S Bulgan, 29.VII.1970, leg. Kerzhner, 2) *Chaetocnema splendens* Motsch., Medvedev det. (2 ZSMC); 1) U.-Hang. aimak, 20 km NE Hahan-Dulan, river Tamiin-Gol, meadow, 5.VII.1973, leg. Medvedev, 2) Chae-



Map 69. *Chaetocnema splendens*

Chaetocnema splendens Motsch., Medvedev det. (1 ZSMC); 1) Mongolia, NW shore of Ureg-Hur, Ubsunuskii aimak, 15.VIII.968 Kozlov. (1 ZMAS); 1) Mongolia, Uburchangaj aimak, Changaj Gebirge, Ongijn gol, 10 km ONO, von Arbajcher, 1800 m, Exp. Dr. Z. Kaszab, 1964, 2) Nr. 220, 29.VI.1964, 3) [Female symbol], 4) *splendens* Motsch. det. J. Král (1 USNM); 1) Mongolia, Uburchangaj aimak, Changaj Gebirge, Ongijn gol, 10 km ONO, von Arbajcher, 1800 m, Exp. Dr. Z. Kaszab, 1964, 2) Nr. 220, 29.VI.1964, 3) *Chaetocnema splendens* (Motsch. 1845), Král det 66, 4) *Chaetocnema splendens* Motsch. (1 USNM); 1) Tsentral'nyi Aimak, river Tola, 25 km SW Taryat 22.YIII.76, L. N. Medvedev, H. Voronova, 2) *Chaetocnema splendens* Mot, L. Medvedev det. 95 (1 USNM); RUSSIA: 1) [Altai] Chuiskaya stepp, Kosh Agach, 7.VII.1907 "E. G. Rodd.", 2) *Chaetocnema* sp. nova, prope andula punctura aerosae similis Jacobs. (1 ZMAS); 1) [Altai] env. Kosh Agach, Chuiskaya stepp, A. Emel'yanov (1 ZMAS); 1) Amur travel No of Shrenk, 1854-56. (1 ZMAS); 1) Altai, 17.VI.1989, Kosh Agach, S. Saluk, 2) *Chaetocnema splendens* Mts (1 USNM); Altaj, Kosh-Agach, 10.7.84, 2) *Chaetocnema splendens* Mts, det. I. K. Lopatin (1 USNM); 1) [Altai] Kosh Agach, Chuiskaya stepp, 18.VII.09, A. Emel'yanov, 2) *splendens* (1 ZMAS); 1) 147, 3) *Hydropus splendens* Motsch, 4) Amur travel No of Shrenk, 1854-56. (1 ZMAS).

***Chaetocnema subcoerulea* (Kutschera)**

Fig. 76, Map 70

subcoerulea Kutschera 1864:346 (type locality: "England und Steiermark"; type destroyed *teste* Doguet 1994); as *Plectroscelis*

punctatula Mulsant & Rey 1874:222 (not Warchalowski 1973; type locality: France, "au bord des étangs, dans le Dauphiné, la Bresse et le Bourbonnais"; type depository: unknown); Heikertinger 1951:213 (synonymized)

christinae Heikertinger 1909:369 (type locality: Italy, "Bozen (Südtirol)"; type depository: NHMB; lectotype designated here). Döberl 2010:508 (synonymy)

Distribution: Albania (Gruev 1992), Austria (Kutschera 1864), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bulgaria (Gruev 1988), Croatia (Gruev 1992), Czech Republic, Denmark (Hansen & Mahler 1985), England (Kutschera 1864), Finland (Klefbeck & Sjöberg 1957), France (Doguet 1994), Germany (Weise 1888), Greece (Gruev 1990a), Hungary, Italy (Biondi 1990a), Luxembourg, Macedonia (Gruev 1992), Netherlands, Romania (Gruev et al. 1993), Russia (European part) (Konstantinov 1988), Slovakia, Slovenia (Gruev 1992), Sweden (South), Switzerland (Stierlin 1886), Turkey, Ukraine.

Host plants: *Juncus acutus*, *J. glaucus*, *Carex vulpina*, *C. muricata*, *C. hostiana* (Heikertinger 1925); Juncaceae, Cyperaceae (Biondi 1990a).

Description: Body length (excluding head) 1.69–2.37 mm, width 0.93–1.42 mm. Ratio of elytron length at suture to maximum width, 2.27–2.32. Ratio of pronotum width at base to length at middle, 1.27–1.39. Ratio of length of elytron at suture to length of pronotum at middle, 2.51–2.53. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.15. Ratio of maximum width of both elytra to maximum width of pronotum, 1.28–1.43.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1 partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.80–1.91. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic cal-

losity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed, rarely poorly developed.

First male protarsomere length to width ratio, 1.30–1.50. First and second male protarsomere length to length ratio, 1.46–1.69. First and second male protarsomeres width to width ratio, 1.08–1.27. Length of metatibia to distance between denticle and metatibial apex 2.31–2.37. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 1.91–2.01. First male protarsomere maximum width to width at base ratio, 2.11–2.18. First and second male metatarsomere length to length ratio, 1.42–1.55. First and second male metatarsomere width to width ratio, 1.00–1.11. Third and fourth male metatarsomere length to length ratio, 2.21–2.31.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with obtuse margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove wider than basal. Middle part of longitudinal groove as wide as basal, rarely narrower than basal; narrower than apical. Longitudinal groove in middle compared to distance between groove and lateral margin subequal or smaller. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, short, flat on top; slightly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent apically. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum Y-shaped, much wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus subdeltoid, broadly clavate. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus slightly widening anteriorly. Anterior sclerotization of vaginal palpus sinusoidal. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization about as great as width. Width of posterior sclerotization greater than that of anterior.

Remarks: *Chaetocnema christinae* was described as a valid species (Heikertinger 1909) but later treated as a variation of *C. subcoerulea* by the same author. Our study of the type material of *C. christinae* confirms Heikertinger's decision as well as Dö-

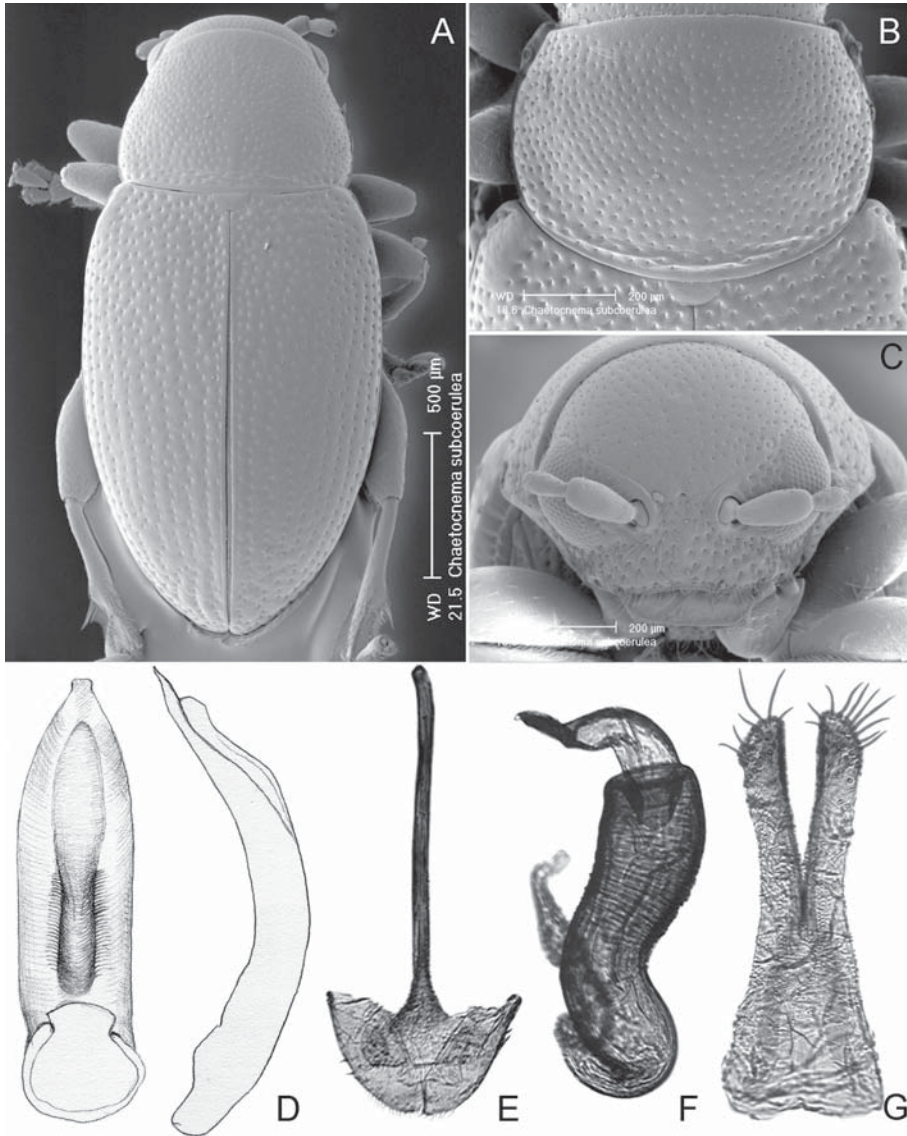
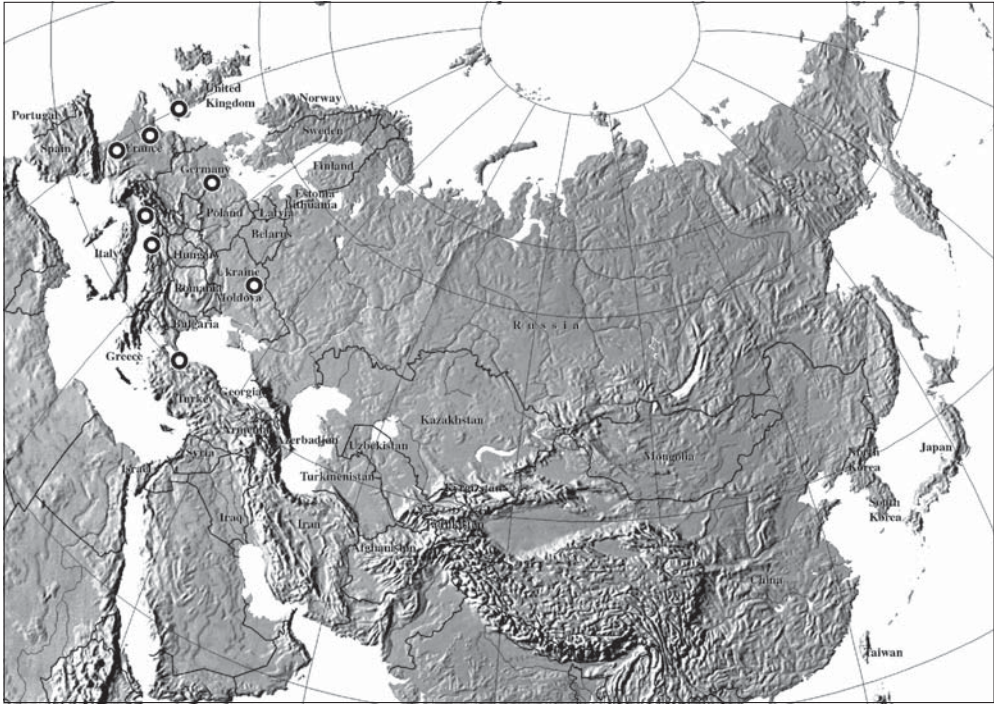


Figure 76. *Chaetocnema subcoerulea*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral; E, tignum; F, spermatheca; G, vaginal palpi.

berl's (2010) decision to synonymize it. Although the type specimen of *C. christinae* bears Bechyné's lectotype label, it has not been designated as such (Bechyné 1956). The original description also does not indicate how many specimens were part of the series (Heikertinger 1909). Therefore we here designate the lectotype of *C. christinae* to ensure nomenclatorial stability in this group of species.



Map 70. *Chaetocnema subcoerulea*

Chaetocnema subcoerulea is similar to *C. rufofemorata*, *C. eastafghanica*, and *C. imitatrix* (the ventral side of the aedeagus of these species has a groove that is wider apically than basally and has the basal sides covered with wrinkles). It can be separated from all the species of the group by the following features of the aedeagus: basal, “narrow” part of the ventral groove is with sides nearly parallel to each other and is shorter than the apical, “wide” part of the groove; the apex is narrowing gradually; and the lateral sides are nearly parallel to each other.

Chaetocnema punctulata Mulsant & Rey is a commonly used misspelling of this species (Heikertinger 1951). *Chaetocnema punctatula* Warchalowski, 1973:48 is preoccupied by Mulsant & Rey (1874). Döberl (2009) suggested *C. warchalowskii* as a replacement name for it, however we do not treat it in this paper because it is clearly an Oriental species (Döberl 2010).

The specimen identified as *C. subcoerulea* from the Bergeal collection (Bugeat, France) is not conspecific with *C. subcoerulea* as it is understood by Heikertinger, although it is in agreement with the illustration of the male genitalia in Doguet’s Fauna of France (1994). It is also different from *C. imitatrix*. We attributed this specimen to a new species that is described under the name *C. bergeali*.

Type material: *Chaetocnema christinae*: Lectotype male: 1) Bozen, Tir. m., Heikertinger, 2) Christinae, Type, det. Heiktgr., 3) Cotypus, 4) 1953 Coll. Heikertinger, 5)

type, J. Bechyně det., 1956, 6) Lectotype *Chaetocnema christinae* Heikertinger des. A. S. Konstantinov et al. 2009 (1 NHMB); Paralectotype female: 1) Bozen, Tir. m., Heikertinger, 2) *Christinae*, det. Heiktgr., 3) Cotypus, 4) 1953 Coll. Heikertinger (1 NHMB); Paralectotype male: 1) 13/5, GT, 2) Bozen, Tir. m., Heikertinger, 4) *Christinae*, det. Heiktgr., 5) Cotypus, 6) 1953 Coll. Heikertinger (1 NHMB).

Material: CROATIA: 1) Dalm. Kahl. 1871, 2) *Chaetocnema subcoerulea*, Heikertinger det. (1 NHMW); 1) Dalmat. (1 BMNH); 1) Dalmatien, 2) *Chaetocnema subcoerulea*, Heikertinger det. (3 NHMW); FRANCE: 1) France, 19 Bugeat, Viam, 11 VI 1984, M. Bergeal leg (20 USNM); 1) Dampierre/Avre, Bugeat, St. Hilaire, Rambouillet, Marais du Cerisaie, St. Lambert, May-July, leg. M. Bergeal (25 BCPF); 1) St Hilaire les C., 1923 VIII 83, M. Bergeal (5 USNM); 1) France, 19 Bugeat, Viam, 11 VI 1984, M. Bergeal leg (4 USNM); 1) France, 19 Bugeat, Viam, 11 VI 1984, M. Bergeal leg, 2) *Chaetocnema subcoerulea* (Kutschera), det. A. S. Konstantinov, 2009 (1 USNM); 1) Bug /S.a O/, Dubois, automne, Scirpus, 2) *Chaetocnema subcoerulea* Kut, A. Lubischew det. (1 ZMAS); GERMANY: 1) Berlin, Reitter, 2) *Chaetocnema subcoerulea*, Heikertinger det. (1 NHMW); ITALY: 1) Bozen, Tir. m., Heikertinger, 2) *Chaetocnema Christinae*, det. Heiktgr., 3) *Chaetocnema subcoerulea* Ktsch., I. K. Lopatin det. 1973 (1 USNM); TURKEY: 1) Maltepe, April, 1902 (1 BMNH); UKRAINE: 1) Poltava Ros mer, 16.V. 1926, Th - Luklanovitsh, 2) *Chaetocnema christinae* Heik., I. Lopatin det., 19--, 3) *Chaetocnema subcoerulea* Ktsch., I. K. Lopatin det., 1963 (1 ZMAS); 1) env. of Poltava, Triby, 20.IV.1925, F. Luk'yanovich, 2) *Carex pallescens* (1 ZMAS); 1) Poltava Ros mer, 16.V. 1926, Th - Luklanovitsh 2) *Ch. subcoerulea* Kutsch. var. *christinae* Heik. det. Konstantinov, Lopatin (1 USNM); UNITED KINGDOM: 1) Tilgate, Sussex, Wimbledon, Surrey, Mortimer, N. Hampshire, Kent, (150 BMNH); 1) 2594 A [see reverse side of specimen card], 2) C. E. Tottenham Collection, B.M. 1969-77 (4 BMNH); 1) Liss Forest, NH., 9.IX.1968., Sweeping Juncus - carex assoc., B. Levey., 2) Brit. Mus., 1970-136. (1 BMNH); 1) N. Hampshire: Liss Forest, 16/9/1967., B. Levey., 2) Brit. Mus., 1970-136. (1 BMNH); 1) Lindfield, CET, 10.VIII.1919, 2) C. E. Tottenham Collection, B.M. 1969-77, 4) *Chaetocnema subcoerulea* (Kutschera), det. A. S. Konstantinov, 2009 (2 BMNH).

***Chaetocnema tarsalis* Wollaston**

Fig. 77, Map 71

tarsalis Wollaston 1860:11 (type locality: Spain, "Grand Canary: Argeniguin; type depository: BMNH; lectotype designated by Biondi 1995:34)

Distribution: Algeria, Cape Verde, Morocco (Kocher 1958), Spain (Canary Islands) (Wollaston 1860), Tunisia (Peyerimhoff 1937)

Host plants: Wollaston (1860) noted that the species was collected from grass (Poaceae); *Eleocharis palustris* (Peyerimhoff 1937).

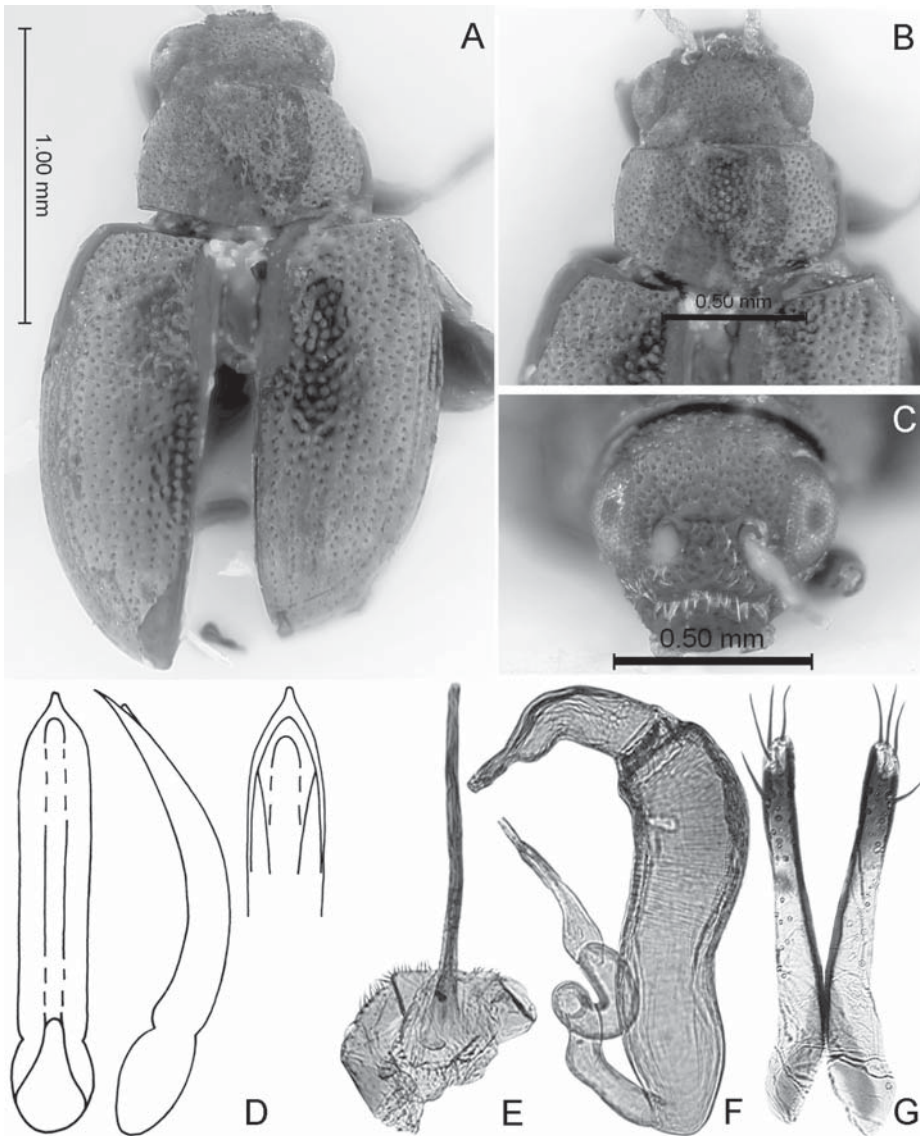
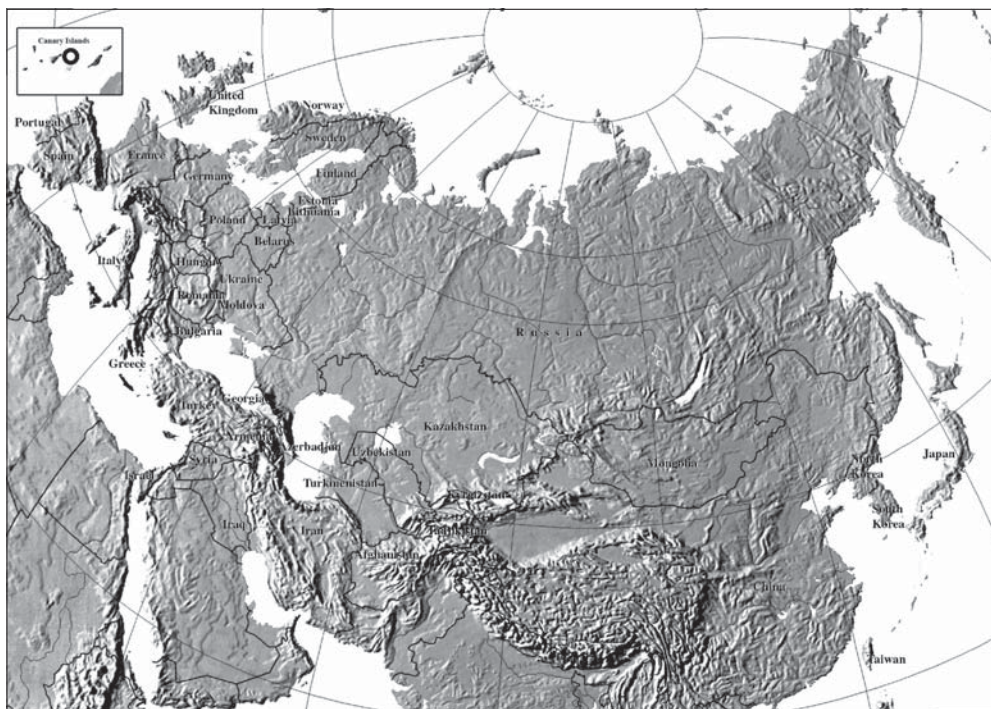


Figure 77. *Chaetocnema tarsalis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal (after Biondi 1995); E, tignum; F, spermatheca; G, vaginal palpi.

Description: Body length (excluding head) 1.89 mm; width 0.97 mm. Ratio of elytron length at suture to maximum width, 3.01. Ratio of pronotum width at base to length at middle, 1.53. Ratio of length of elytron at suture to length of pronotum at middle, 2.93. Ratio of width of both elytra at base to width of pronotum at base, 1.13. Ratio of maximum width of both elytra to maximum width of pronotum, 1.25.



Map 71. *Chaetocnema tarsalis*

Elytron copperish without yellow. Pronotum copperish. Antennomere 1–3 completely yellow. Pro-, meso-, metatibia yellow. Pro-, mesofemur yellow. Metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.57. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them or 2–4 times smaller than distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; well-developed, deep, with obtuse margins in middle; poorly developed with obtuse margins in basal half. Apical, middle, and basal part of longitudinal groove of approximately equal width. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, narrow, flat on top; slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle sinuate. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated apically. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum spatulate, wider than midsection. Midsection of tignum slightly curved. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus evenly rounded. Sides of midpart of vaginal palpus (before apex) slightly narrowing from base, more or less parallel-sided. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization nearly flat. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior.

Remarks: The only specimen (female) of *C. tarsalis* available for our study (BMNH) is missing some antennomeres, so some characters could not be described. *Chaetocnema tarsalis* can be separated from other Palearctic species by the parallel-sided aedeagus with long, round on the top apical denticle and with a narrow, parallel sided ventral groove.

Material: SPAIN: 1) Canary Is., 99-203, 2) *Chaetocnema tarsalis*, W., 4) *C. tarsalis* (type?), BM, ... No. 82 (1 BMNH).

***Chaetocnema tbilisiensis* new species**

Fig. 78, Map 72

Distribution: Georgia.

Host plants: unknown.

Description: Body length (excluding head) 2.27–2.37 mm; width 1.22–1.24 mm. Ratio of elytron length at suture to maximum width, 2.78–2.90. Ratio of pronotum width at base to length at middle, 1.36–1.42. Ratio of length of elytron at suture to length of pronotum at middle, 2.42–2.52. Ratio of width of both elytra at base to width

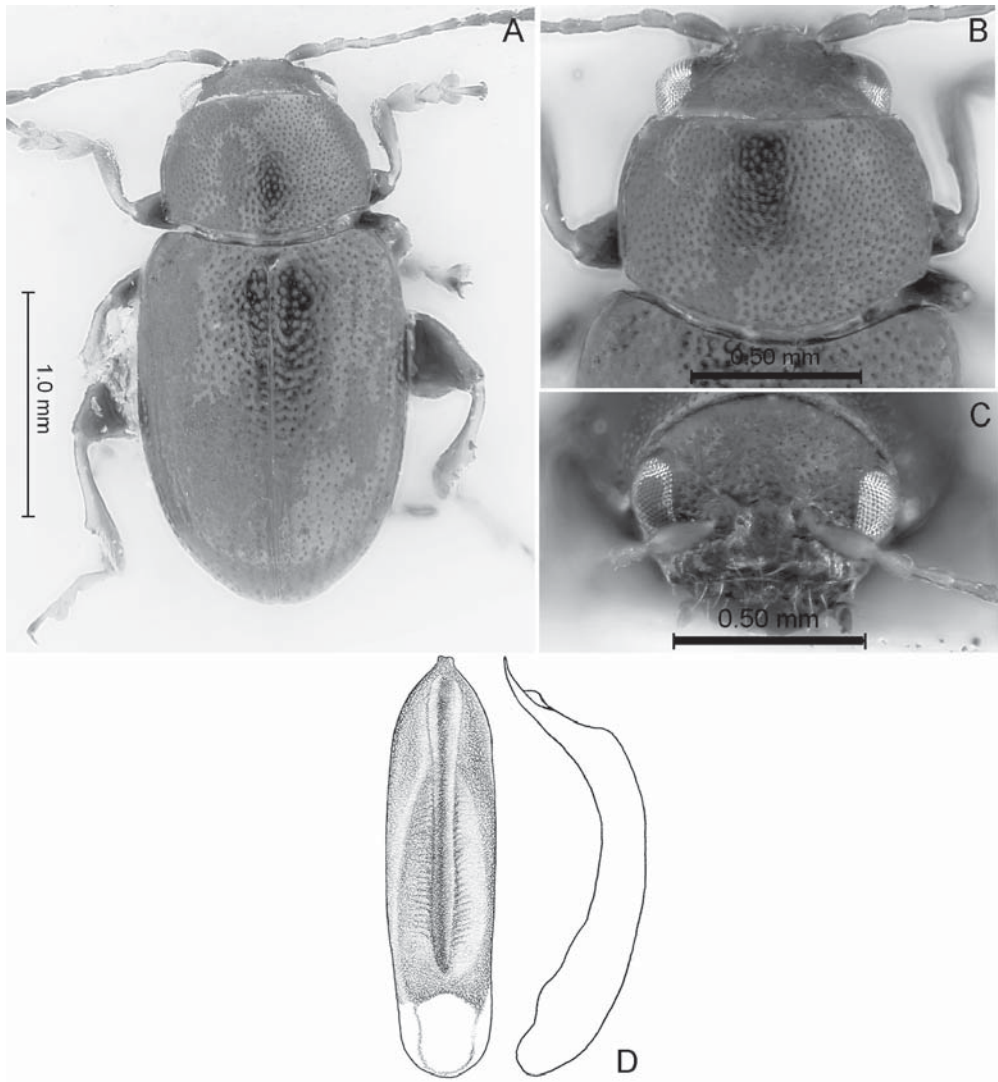
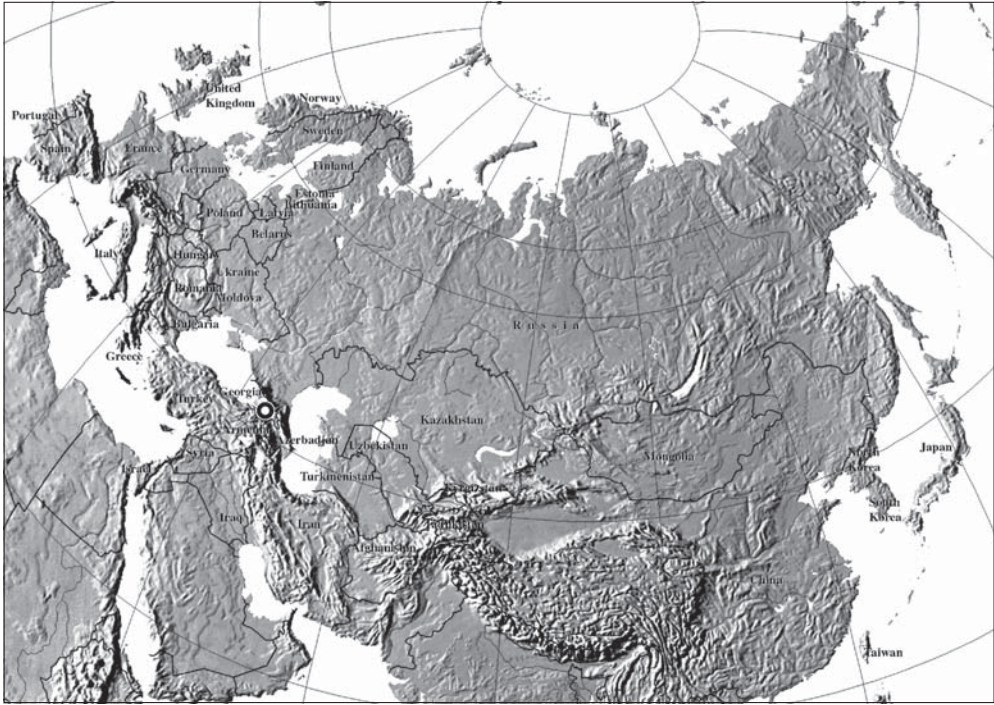


Figure 78. *Chaetocnema tbilisiensis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral.

of pronotum at base, 1.09–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31–1.34.

Elytron blueish without yellow or black, without metallic luster. Pronotum blueish or black, without metallic luster. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–4 completely yellow. Antennomere 5 partly brown. Protibia partly brown, rarely yellow. Meso-, metatibia yellow. Pro-, meso-, metafemur brown.



Map 72. *Chaetocnema tbilisiensis*

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, obcordate. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 2.40–2.45. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex densely and evenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.29–1.34. First and second male protarsomere length to length ratio, 1.19–1.22. First and second male protarsomeres

width to width ratio, 1.39–1.43. Length of metatibia to distance between denticle and metatibial apex 2.49–2.54. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.63–2.68. First male protarsomere maximum width to width at base ratio, 2.40–2.45. First and second male metatarsomere length to length ratio, 1.56–1.59. First and second male metatarsomere width to width ratio, 1.04–1.07. Third and fourth male metatarsomere length to length ratio, 2.00–2.05.

Apical third of aedeagus narrowing. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, oblique; convex basally and at middle. Ventral longitudinal groove in apical half and middle of aedeagus well-developed, deep, with sharp margins; well-developed, with sharp margins in basal half. Apical part of longitudinal groove wider than basal and middle; middle part as wide as basal. Longitudinal groove at middle narrower than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top; strongly curved dorsally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent on apical part. Aedeagus in lateral view evenly and strongly curved with maximal curvature situated medially.

Remarks: *Chaetocnema tbilisiensis* is similar to *C. arenacea* based on most of the external features. Both species can be separated from most Palearctic species based on the shape of the aedeagus, with the ventral groove that widens towards the apex and with the sides that are covered with transverse wrinkles from base to beyond middle. *Chaetocnema tbilisiensis* can be differentiated from *C. arenacea* based on the relatively robust aedeagus (it is more slender in *C. arenacea*) with the apex being strongly bent dorsally in lateral view (it is straight in *C. arenacea*). The aedeagus of *C. tbilisiensis* is similar to the aedeagus of *C. nocticolor* by the shape of the ventral groove, which gradually widens from the base to the apex and by the shape of the apex in ventral view. It can be differentiated by the apex which is curved dorsally in lateral view (the apex is straight in *C. nocticolor*) and by the transverse wrinkles which cover the ventral side from the base to and beyond the middle (in *C. nocticolor* the wrinkles do not reach the middle of the ventral side of the aedeagus).

Etymology: The name is a Latinized adjective and refers to the collecting locality, Tbilisi.

Type material: *Chaetocnema tbilisiensis*: Holotype male: 1) Tbilisi, VIII.1957, Dlabola, 2) Holotype *Chaetocnema tbilisiensis* sp. nov. des. Konstantinov et al. 2009 (1 USNM); Paratypes male 1) Tbilisi, VIII.1957, Dlabola, 2) Paratype *Chaetocnema tbilisiensis* sp. nov. des. Konstantinov et al. 2009 (2 USNM).

***Chaetocnema tibialis* (Illiger)**

Fig. 79, Map 73

tibialis Illiger 1807:64 (type locality: Portugal, Algarve, "Algarvien"; type depository: ZMHB); as *Haltica*

pumila Allard 1859:cv (type location: "France méridionale"; type depository: MNHN); as *Plectroscelis*; Heikertinger 1951:211 (synonymized)

caesaraugustana Fuente 1909:138 (type locality: Spain, "Caesaraugusta [Zaragoza], Mons Caenus"; type depository: unknown); Heikertinger 1951:211 (synonymized)

obscuripes Pic 1909:138 (type locality: "Espagne"; type depository: MNHN); Heikertinger 1951:211 (synonymized)

Distribution: Afghanistan (Gruev 1988a), Albania (Gruev 1992), Algeria, Armenia, Austria (Redtenbacher 1874), Azerbaijan, Belarus (Lopatin 1986), Bosnia and Herzegovina (Gruev 1979), Bulgaria (Gruev 1988b), Croatia, Cyprus (Biondi 1994, 1995), Czech Republic, Egypt (Alfieri 1976), Finland, France (Doguet 1994), Germany (Weise 1886), Greece (Gruev 1990a), Hungary (Vig 1996), Iran (Rapilly 1978), Iraq (Gruev 1995a), Israel (Furth 1985), Italy (Biondi 1990a, 1990b), Jordan, Kazakhstan (Lopatin 1977b), Kyrgyzstan (Lopatin 1977b), Latvia (Pūtele 1971), Macedonia (Gruev 1979), Malta, Montenegro (Gruev 1979), Morocco (Jolivet 1967), Poland (Bartkowska 1994), Portugal (Bastazo et al. 1993), Romania (Gruev et al. 1993), Russia (European part) (Konstantinov 1988, Lopatin et al. 2004), Serbia (Gruev 1979), Slovakia (Durbešić 1974), Slovenia (Gruev 1992), Spain (Bastazo et al. 1993), Switzerland (Stierlin 1866), Syria, Tajikistan (Lopatin 1977b), Tunisia (Scherer 1979), Turkey (Gruev & Kasap 1985), Turkmenistan, Ukraine.

Host plants: *Atriplex patula*, *Beta vulgaris* (Bargagli 1878); *Amaranthus blitum* (Peyrimhoff 1915); *Beta vulgaris*, *Chenopodium album*, *Atriplex hastatum*, *Salicornia herbacea*, *Polygonum lapathifolium*, *P. aviculare* (Heikertinger 1925); *Lavandula latifolia* (Galibert 1932); *Salicornia herbacea*, *Amaranthus hybridus*, *Spinacia oleracea* (Nonveiller 1960); *Beta vulgaris*, *Chenopodium album*, *Atriplex hastatum*, *Salicornia herbacea*, *Amaranthus blitum*, *Salsola kali*, *Atriplex patula*, *A. portulacoides*, *Salicornia fruticosa*, *Spinacia oleracea*, *Amaranthus hybridus* (Jolivet 1967); *Chenopodium glaucum*, *Amaranthus retroflexus* (Nonveiller 1978); *Atriplex tatarica*, *A. halimus*, *Camphorosma ovata* (Heikertinger 1951); *Chenopodium murale*, *C. foliosum*, *Atriplex leucoelada*, *Amaranthus blitoides*, *A. arenicola*, *A. gracilis*, *Beta vulgaris*, *Spinacia* (Furth 1985); *Arthrocnemum glaucum*, *Chenopodium* (Biondi 1990a, 1990b); *Halimione portulacoides*, *Salicornia europaea*, *S. fruticosa*, *Salsola kali*, *Camphorosma ovata*, *Amaranthus arenicola*, *A. gracilis*, *Glycine hispida*, *Ipomea batatas* (Doguet 1994); *Amaranthus albus*, *Portulaca oleracea*, *Cardaria draba*, *Rumex dentatus* (Ghadiri 1990).

Description: Body length (excluding head) 1.54–1.89 mm; width 0.91–1.17 mm. Ratio of elytron length at suture to maximum width, 2.56–2.82. Ratio of pronotum

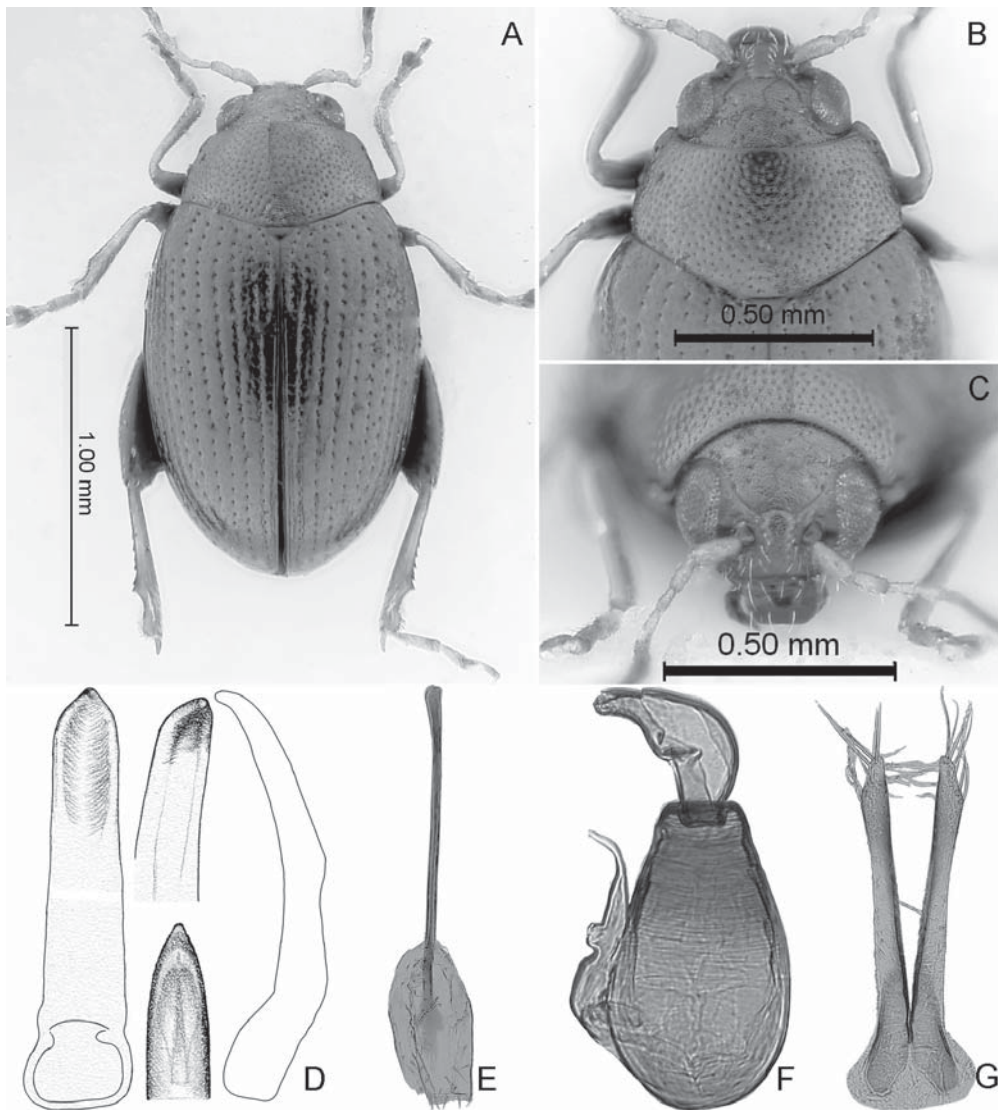
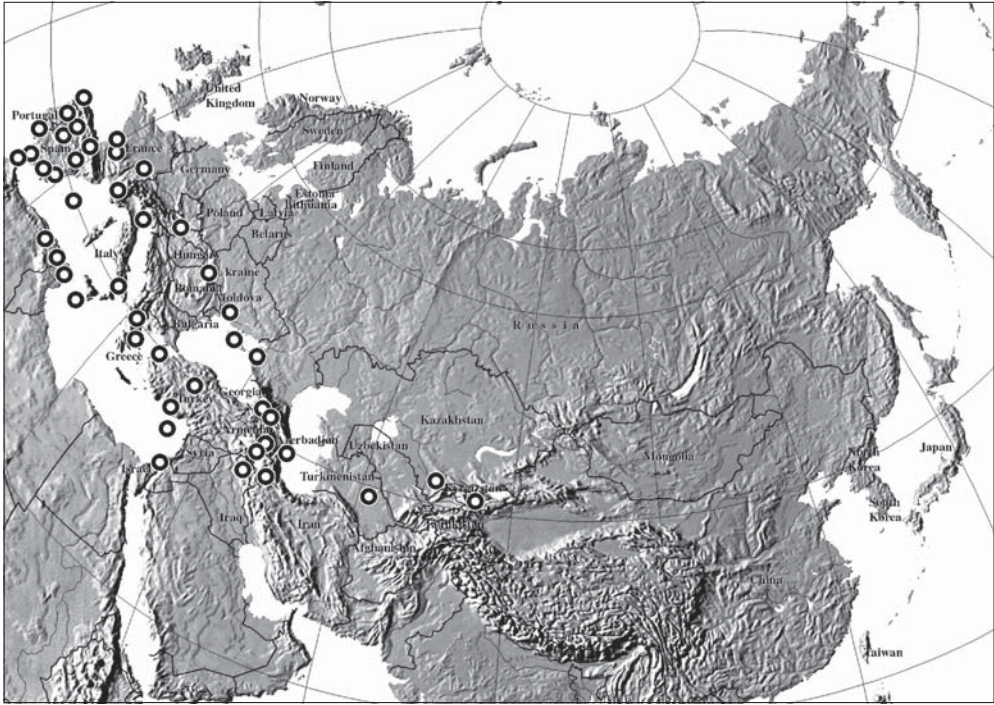


Figure 79. *Chaetocnema tibialis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

width at base to length at middle, 1.56–1.85. Ratio of length of elytron at suture to length of pronotum at middle, 3.02–3.45. Ratio of width of both elytra at base to width of pronotum at base, 1.11–1.16. Ratio of maximum width of both elytra to maximum width of pronotum, 1.43–1.46.

Elytron bronzish without yellow. Pronotum bronzish, rarely copperish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–4 completely yellow.



Map 73. *Chaetocnema tibialis*

Antennomere 5 partly brown. Protibia partly brown, rarely yellow. Meso-, metatibia partly brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present or absent. Suprafrontal sulcus relatively deep, well-defined, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.60–1.65. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 8–10 or 3–5 punctures near eye.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity on same level as lateral margin. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.77–1.86. First and second male protarsomere length to length ratio, 1.09–1.14. First and second male protarsomeres width to width ratio, 1.10–1.14. Length of metatibia to distance between denticle and metatibial apex 3.09–3.14. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 4.05–4.10. First male protarsomere maximum width to width at base ratio, 1.60–1.66. First and second male metatarsomere length to length ratio, 1.63–1.68. First and second male metatarsomere width to width ratio, 0.95–0.99. Third and fourth male metatarsomere length to length ratio, 2.48–2.54.

Apical third of aedeagus parallel-sided. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing abruptly. Ventral surface of aedeagus lateral to median groove convex apically, medially, basally. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; poorly developed, with obtuse margins or absent in basal half. Apical and middle part of longitudinal groove wider than basal; middle part narrower than apical. Longitudinal groove in middle wider than or subequal in width to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view poorly differentiated; strongly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view evenly and slightly curved with maximum curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated basally. Basal part of receptacle wider than apical. Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening, losing sharp border. Midsection of tignum nearly straight. Anterior sclerotization of tignum wider than midsection. Apex of vaginal palpus subdeltoid, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex. Anterior sclerotization of vaginal palpus nearly straight. Anterior end of anterior sclerotization broadly rounded. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or smaller.

Remarks: *Chaetocnema tibialis* is similar to *C. breviscula*, *C. delarouzei*, *C. lubischevi*, and *C. scheffleri*. All these species can be best recognized by the shape of the aedeagus, proportions of the body and some small details in punctuation of pronotum and elytra. In *C. tibialis*, the aedeagus is generally cylindrical along its length with the apex sharply bent ventrally in lateral view with a relatively long and a conspicuous ventral impression (it is nearly as thick in *C. breviscula*, with its tip directed straight forward, the ventral side with a very short impression situated only at the apex, and its tip nar-

rowing abruptly in ventral view; in *C. delarouzei* the aedeagus is very similar in lateral view, but its tip is oval, without a denticle in ventral view; in *C. scheffleri*, the ventral groove occupies the whole length of the aedeagus and the tip is bent ventrally; and in *C. lubischevi*, the aedeagus is much flatter apically than basally in lateral view, and its tip narrows gradually in ventral view).

Material: ALGERIA: 1) (1 BMNH); 1) Ain Oulmene Setif, June 21, 1987, leg. M. Bergeal (11 BCPF); 1) Oued Mafrag Annaba, June 6, 1985, leg. M. Bergeal (25 BCPF); ARMENIA: 1) Armenia. Azizbekov reg., Ger-Ger. Frigana, dry hill, 24.V.1988, leg. A. Konstantinov, 2) *Chaetocnema tibialis*, 6-punctures, -bent., det. A. S. Konstantinov, 2004 (6 USNM); AUSTRIA: 1) Bgld. Illmitz Halle, July 7, 1993, leg. M. Bergeal (2 BCPF); 1) Bgld. Podersdorf, July 7, 1993, leg. M. Bergeal (1 BCPF); 1) Bgld. Siegendorf Kehr., June 5, 1993, leg. M. Bergeal (1 BCPF); 1) Ganglbauer, Neusiedl. S., 2) *Chaetocnema tibialis*, Heikertinger det. (6 NHMW); 1) inf. Dornbach, 2) *Chaetocnema tibialis*, Heikertinger det. (6 NHMW); 1) Marchfeld, leg. F. Smolk (1 BMNH); 1) Austr. Inf., Laxenburg, F. Smolik, 2) *tibialis*, 3) 1953 Coll., Heikertinger (1 NHMB); AZERBAIJAN: 1) Az. SSR, 18.V.1986, Lenkoran' meadow, Konstantinov, A., 2) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (1 USNM); 1) Az. SSR, 10.V.1986, Lerik' meadow, Konstantinov, A., 2) *Ch. tibialis* Ill., det. Konstantinov, 1986 (1 USNM); 1) Az. SSR, 18.V.1986, Lenkoran' meadow, Konstantinov, A., 2) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (2 USNM); CYPRUS: 1) Zakaki, July 8, 1945 (3 BMNH); FRANCE: 1) Roussillon, Brivezak-Bettu, Aubeville, Vosne-Romanee, Signes, Comps/Artuby, May, June, July, August, leg. M. Bergeal (20 BCPF); GEORGIA: 1) Gruzia, 25.VII.1983, Surami, pasture, Konstantinov A., 2) *Ch. tibialis* Ill., det. Konstantinov (4 USNM); 1) Rustavi, 28.VII.1983, Kura river, Konstantinov A., 2) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (1 USNM); GREECE: 1) Attica Dr. Kruper, Collect. Hauser, 2) *Chaetocnema tibialis*, Heikertinger det. (7 NHMW); 1) Epire: Aristi, Valley du Voidomatis, June 11, 1978, leg. B. et M. Bergeal (1 BCPF); 1) Levidia, 4.VII.1983, leg. B. Gruev, 2) *Chaetocnema tibialis*, Gruev det. (11 ZSMC); 1) Peloponese: Corinthia Souli-Kessa, June 2, 1995, leg. F. Duhaldeborde (1 BCPF); IRAN: 1) N Iran, Bandar-e Shah, 1.8.70, 2) Loc. no. 79, Exp. Nat. Mus. Praha, 3) *Chaet. breviscula*, J. Král det. 78, 3) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (1 USNM); 1) N Iran, Bandar-e Shah, 1.8.70, 2) Loc. no. 79, Exp. Nat. Mus. Praha, 3) *Chaetocnema breviscula* Fld., det I. Lopatin, 1988, 4) *Chaetocnema tibialis* (Illiger), det. A. S. Konstantinov, 2004 (1 USNM); 1) NW Iran, Maku, 19-29.6.1970, 2) Loc. no. 25, Exp. Nat. Mus. Praha, 3) *Ch. breviscula*, J. Král det. 77, 3) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (1 USNM); IRAQ: 1) Sulamania, June 23, 1928 (10 BMNH); ITALY: 1) Adria: Bibione, July 1996, leg. M. Langer (1 BCPF); 1) Basilicata: Oasi WWF, Lago Pantano di Pignola, June 23, 1991, leg. Angolini (1 BCPF); KAZAKHSTAN: 1) Kazakhstan: Chimkent, reg. Aksu-Dzhabagly Reserv, 42°20'00"N 070°40'00"E 22.V.1990, leg. A. Konstantinov, 2) *Chaetocnema tibialis* (Illiger), det. A. S. Konstantinov, 2009 (1 USNM); 1) Kazakhstan: Chimkent, reg. Aksu-Dzhabagly Reserv, 42°20'00"N 070°40'00"E

21.V.1990, leg. A. Konstantinov, 2) *Chaetocnema tibialis* (Illiger), det. A. S. Konstantinov, 2009 (3 USNM); 1) Talasskii Alatau, river Aksu, 21.V.1990, Konstantinov A., 2) *Chaetocnema tibialis* (Illiger), det. A. S. Konstantinov, 2009 (1 USNM); KYRGYZSTAN: 1) Frunze, Novo-Troitskoe, 6.IX.1949, A. Lubischew, 2) *Chaetocnema tibialis* Illig, A. Lubischew det (2 ZMAS); MALTA: 1) Malta, Chadnickh, 19.V.1990, Leg. D. Mifsud, 2) *Chaetocnema tibialis* (Illiger) det. A.S. Konstantinov (2 MCMA); MOROCCO: 1) Tetuan, leg. J. J. Walker (3 BMNH); PORTUGAL: 1) Alto Alentejo: Serro de Sao Mamede, June 28, 1996, leg. M. Langer (1 BCPF); 1) Setuba: Alcacer Montevil, April 25, 1996, leg. M. Bergeal (1 BCPF); 1) Setuba: Palma, June 25, 1996, leg. M. Bergeal (4 BCPF); 1) Tras-os-Montes, Mogadouro, Variz, 21-VI-2001, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); RUSSIA: 1) Russia: Krasnodar Region, Temryuk District: 15m, 45°16.59'N, 37°23.51'E, Sweeping: May 31, 1999, Steven W. Lingafelter (2 USNM); 1) env. Tuapse, Kirpichnoe, 22.VI.1982, A. Konstantinov, 2) *Chaetocnema tibialis* Ill., det. A. Konstantinov, 2000 (1 USNM); 1) Russia: 5km W. Golubitskaya on Azov Sea Peninsula, 45°19.89'N, 37°13.44'E, Sweeping: May 31, 1999, Steven W. Lingafelter, coll., 2) *Chaetocnema tibialis* (Ill.), A. Baselga 2009 (2 USNM); SPAIN: 1) Retuer? ba, 13.VI.1950. Archimovitsch, 2) *Chaetocnema tibialis*, Freude det. (9 ZSMC); 1) Retuer? ba, 6.VI.1949 Archimovitsch, 2) *Chaetocnema tibialis*, Freude det. (21 ZSMC); 1) A Coruña, Bergondo, Fiobre, 08-III-1997, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) A Coruña, Corrubedo, 26-X-1997, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) A Coruña, Corrubedo, Vilar, 26-X-1997, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (5 BASC); 1) Cádiz, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (5 MNCN); 1) Granada, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (4 MNCN); 1) Lugo, Ancares, Cancelada, 18-X-1998, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Madrid, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (4 MNCN); 1) Madrid, Aranjuez, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (13 MNCN); 1) Madrid, El Pardo, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 MNCN); 1) Madrid, La Poveda, 5-VIII-1963, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (5 MNCN); 1) Madrid, Madrid, Chamartín, X-1899, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (2 MNCN); 1) Mallorca, Menorca, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 MNCN); 1) Murcia, Cartagena, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 MNCN); 1) Murcia, Puerto Mazarrón, VIII-1943, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (10 MNCN); 1) Navarra, Falces, 03-X-1996, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Navarra, Falces, 06-IV-1998, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Ourense, A Rúa, 04-IV-1993, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Ourense, Riós, Progo, 12-VI-1999, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Ourense, Rubiá, Veiga de Cascallá, 24-VII-1994, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (3 BASC); 1) Teruel, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (5 MNCN); 1) Toledo, Ontígola, 1908, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (2 MNCN); 1) Toledo, Quero, IV-1909, 2) *Chaetocnema tibialis* (Ill.), Baselga det.

(1 MNCN); 1) Valladolid, 3-VII-1950, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (2 MNCN); 1) Zamora, Fermoselle, Fornillos, 18-V-1998, leg. Baselga, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 BASC); 1) Zaragoza, 9-XI-1906, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (1 MNCN); 1) Zaragoza, Aula Dei, 17-V-1951, 2) *Chaetocnema tibialis* (Ill.), Baselga det. (2 MNCN); Cotype. 1) Hisp., Zaragoza, 9-XI-6, Fuente Jon., 2) caesarau-gustana Fuente, Cotypus, 3) caesarau-gustana Fu., det. Heiktr., = *tibialis*, 4) 1953 Coll., Heikertinger (1 NHMB); TUNISIA: 1) Kairouan (1 BMNH); 1) Tunisia, 30.VIII.2003, Salsola sp. leg. M. Cristofaro, 2) *Chaetocnema tibialis*, Konstantinov det. (32 USNM); 1) Tunisia Aug. 30, 2003., 16 km N. of Tunis highw., Tunis - Bizerte, Salsola sp. (prob. *australis*), Coll. Massimo Cristofaro, 2) *Chaetocnema tibialis* Illiger, det. A. S. Konstantinov, 2003 (32 USNM); TURKEY: 1) Besika Bay (1 BMNH); 1) Konya: Ugurlu & Asagisigil, May 16-17, 1998, leg. B & M. Bergeal (13 BCPF); 1) Turkey: 100km S. Ankara, 18 June 1999: sweeping/general collecting, Steve Lingafelter, Coll., 2) *Chaetocnema*, Det. S. W. Lingafelter (1 USNM); 1) As. Min. Angora, Biró. 1925.VI.8, 2) *Chaetocnema tibialis* Ill., det. I. Lopatin, 19 (1 USNM); 1) Turkey, 34 km N., Aksaray, 38 56'00"N, 33 33'00"E 18.VI.1999, saline habitat, leg. A. Konstantinov, 2) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (22 USNM); TURKMENISTAN: 1) Middle Asia, Bairam-Ali, Mousoleum ruins. 27.VI.1967, leg. I. K. Lopatin, 2) *Chaetocnema tibialis* (Illiger), det. A. S. Konstantinov, 2004 (1 USNM); UKRAINE: 1) Krim, Bahchisarai, Rechnoe, Mosyakin, 29.7.1980, *Chaetocnema tibialis* Ill. No 33 (1 USNM); 1) Ukraine: Carpathians, Beregovskii region, N. E. Balka, 25.VIII.1976, leg. V. Zolotikhin, 2) *Chaetocnema tibialis* (Illiger) det A. S. Konstantinov 2009 (5 USNM); 1) Odesskaya obl., 60es. I. K. Lopatin, 2) *Chaetocnema tibialis* (Illiger) det. A.S.Konstantinov 2009. (1 USNM).

***Chaetocnema transbaicalica* Heikertinger, new status**

Fig. 80, Map 74

transbaicalica Heikertinger 1951:173 (as subspecies of *semicoerulea*; type locality: Russia, Ulan-Ude, "Werchne Udinsk"; type depository: NHMB; lectotype designated by Bechyné 1956:583)

Distribution: Mongolia, Russia (Buryatia, Chita, Primorsky Krai) (Heikertinger 1951).

Host plants: unknown.

Description: Body length (excluding head) 1.94–2.16 mm; width 1.18–1.24 mm. Ratio of elytron length at suture to maximum width, 2.59–2.68. Ratio of pronotum width at base to length at middle, 1.70–1.86. Ratio of length of elytron at suture to length of pronotum at middle, 3.28–3.38. Ratio of width of both elytra at base to width of pronotum at base, 1.07–1.19. Ratio of maximum width of both elytra to maximum width of pronotum, 1.40–1.44.

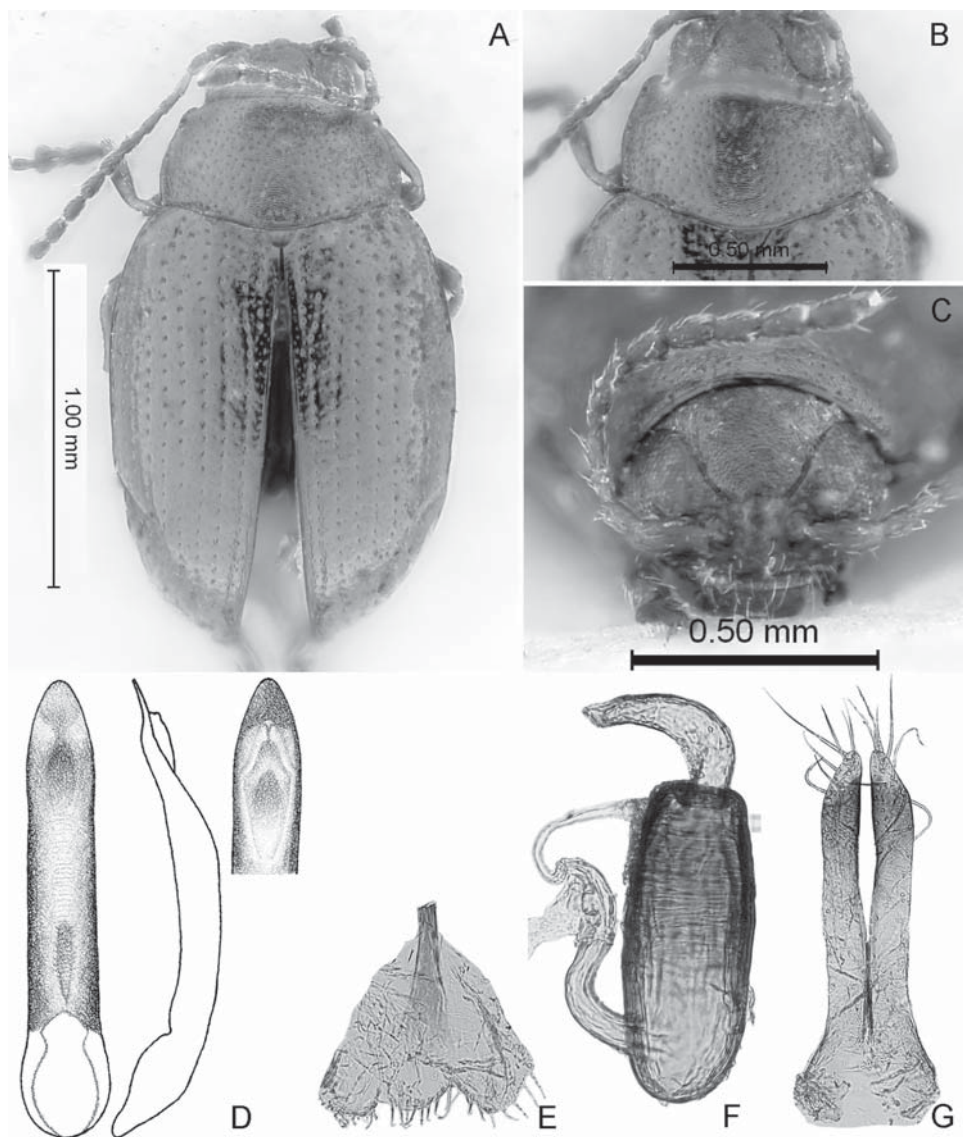
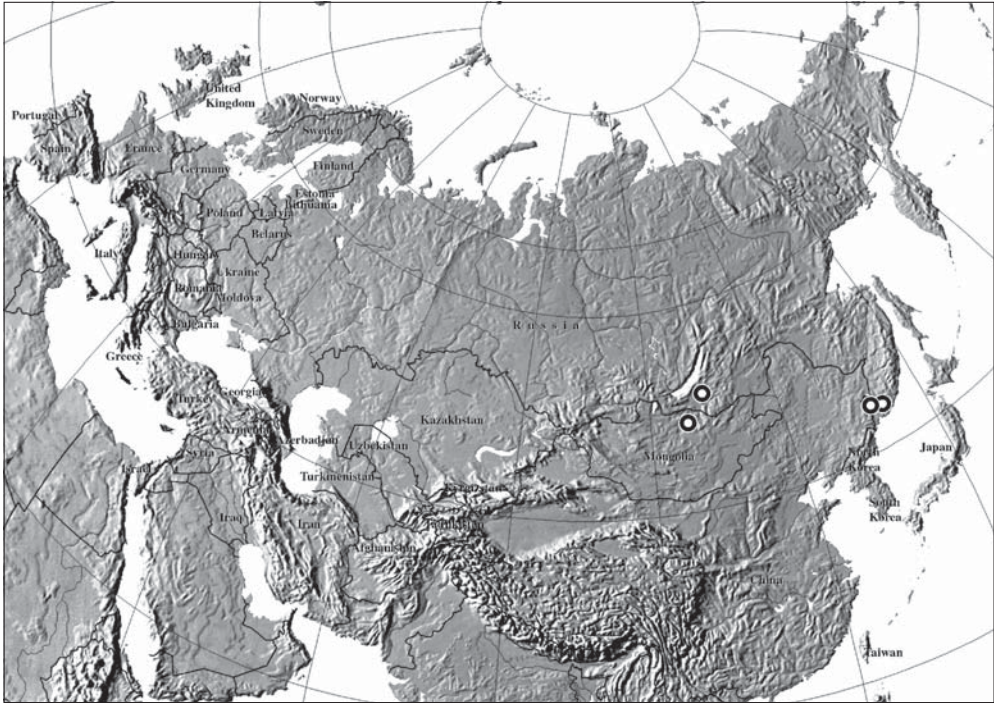


Figure 80. *Chaetocnema transbaicalica*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Elytron bronzish without yellow. Pronotum bronzish. Antennomere 1 completely yellow or partly dark brown. Antennomere 2–3 completely yellow. Antennomere 4 completely yellow or partly brown. Antennomere 5 partly brown. Pro-, meso-, metatibia yellow or partly brown. Pro-, mesofemur partly brown. Metafemur brown.



Map 74. *Chaetocnema transbaicalica*

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus shallow and faint, retuse. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.09–1.11. Frons with only relatively long setae on sides present. Vertex flat, situated on same level as orbit. Surface of vertex with 8–10 punctures near eye.

Base of pronotum with two well-developed longitudinal impressions, both near basal margin and further anteriorly. Deep row of large punctures at base of pronotum present on sides, lacking in middle. Pronotal base evenly convex. Base of pronotum without longitudinal impunctate strip. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum slightly convex with maximum width near base. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus well-developed.

First male protarsomere length to width ratio, 1.48–1.51. First and second male protarsomere length to length ratio, 1.79–1.83. First and second male protarsomeres

width to width ratio, 1.06–1.09. Length of metatibia to distance between denticle and metatibial apex 1.79–1.84. Large lateral denticle on metatibia sharp. Metatibial serration proximal to large lateral denticle present, sharp. Metatibia proximad to denticle in dorsal view concave. First male metatarsomere length to width ratio, 2.96–3.05. First male protarsomere maximum width to width at base ratio, 1.98–2.04. First and second male metatarsomere length to length ratio, 1.3–1.7. First and second male metatarsomere width to width ratio, 0.85–0.91. Third and fourth male metatarsomere length to length ratio, 1.63–1.69.

Apical third of aedeagus widening. Width of aedeagus distal to basal opening subequal to width just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; convex basally and at middle. Ventral longitudinal groove in apical half of aedeagus poorly developed, shallow, with obtuse margins; absent in middle; poorly developed with obtuse margins in basal half. Apical part of longitudinal groove wider than basal; middle part narrower than basal and apical. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view absent; slightly curved ventrally in lateral view. Minute transverse wrinkles on basal part of ventral side of aedeagus present; absent from apical part. Aedeagus in lateral view sinusoidal near apex with maximal curvature situated medially.

Spermathecal pump much shorter than receptacle. Apex of spermathecal pump cylindrical. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle about as wide as apical. Posterior sclerotization of tignum spatulate, wider than midsection. Apex of vaginal palpus subdeltoïd, with sides abruptly tapering. Sides of midpart of vaginal palpus (before apex) narrowing from base, slightly widening towards apex. Anterior sclerotization of vaginal palpus as wide posteriorly as anteriorly before apex; sharply curved at apex. Anterior end of anterior sclerotization broadly rounded or acute. Length of posterior sclerotization greater than width. Width of posterior sclerotization to width of anterior sclerotization about as great or greater.

Remarks: *Chaetocnema transbaicalica* most recently was treated as a subspecies of *C. semicoerulea*. It can be separated from it by the shape of the aedeagus. The aedeagus of *C. semicoerulea* narrows gradually from base to apex, in *C. transbaicalica* the aedeagus is more or less parallel-sided.

Type material: *Chaetocnema transbaicalica*: Lectotype male: 1) Werchne-Udinsk, Trabaikal. Mandl, 2) nicht, semicoer. Aedeagus, 1. Tarsingl., 3) Chaetocn., det. Heiktgr., semicoerul. transbaicalica m. Type, 4) Chaetocn. semicoer. transbaicalica m. Typus, 5) 1953 Coll. Heikertinger, 6) lectotype, J. Bechyné det., 1956 (1 NHMB); Paralectotype: 1) Sutschanski-Rudnik, Ussuri Juli, 2) semicoerulea transbaicalica m. det. Heiktgr., 3) Cotypus, 4) 1953 Coll. Heikertinger (1 NHMB); Paralectotype: 1) Werchne-Udinsk,

Trabaikal. Mandl, 2) Punktiernug der Fld.anders!, 3) Chaetocn. semicoerul. transbaicalica m. Type, det. Heiktgr., 4) Chaetocn. semicoer. transbaicalica m. Typus, 5) 1953 Coll. Heikertinger (1 NHMB).

Material: MONGOLIA: 1) Selengerskii aimak, Shamar, 20 YII 1978, V. Zaitsev, 2) *Chaetocnema semicoerulea transbaicalica* Heik, L. Medvedev det. 95 (1 USNM); RUSSIA: 1) Voroshilov, Ussur. 14.IV.31, T. Samojlov, 2) *Chaetocnema transbaicalica* Heik., det. A. S. Konstantinov, 2009 (1 ZMAS).

***Chaetocnema ussuriensis* Heikertinger**

Fig. 81, Map 75

ussuriensis Heikertinger 1951:201 (type locality: Russia, "Nikolsk Ussurijsk"; type depository: NHMB)

Distribution: China (Gruev 1981), Russia (Yakutia, Primorsky Kray) (Heikertinger 1951).

Host plants: unknown.

Description: Body length (excluding head) 1.89–2.27 mm; width 1.05–1.24 mm. Ratio of elytron length at suture to maximum width, 2.84–3.00. Ratio of pronotum width at base to length at middle, 1.37–1.52. Ratio of length of elytron at suture to length of pronotum at middle, 2.43–2.44. Ratio of width of both elytra at base to width of pronotum at base, 1.04–1.07. Ratio of maximum width of both elytra to maximum width of pronotum, 1.11–1.28.

Elytron blueish without yellow. Pronotum blueish. Antennomere 1–2 partly dark brown. Antennomere 3–4 partly brown. Antennomere 5 completely brown. Pro-, meso-, metatibia brown. Pro-, meso-, metafemur brown.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontolateral sulcus present. Suprafrontal sulcus relatively deep, well-defined, straight, forming obtuse angle and notch. Ratio of width of frontal ridge between outer ridge of antennal sockets to width of antennal socket (including surrounding ridge), 1.74–1.76. Frons evenly covered with relatively short, white setae. Vertex flat, situated on same level as orbit. Surface of vertex sparsely and unevenly covered with punctures.

Base of pronotum without longitudinal impressions. Deep row of large punctures at base of pronotum absent. Pronotal base slightly expanded in middle. Base of pronotum with longitudinal strip lacking punctures. Area adjacent to mid-basal margin of pronotum covered with punctures. Sides of pronotum evenly rounded, with maximum width near middle. Anterolateral prothoracic callosity protruding laterally. Posterolateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.

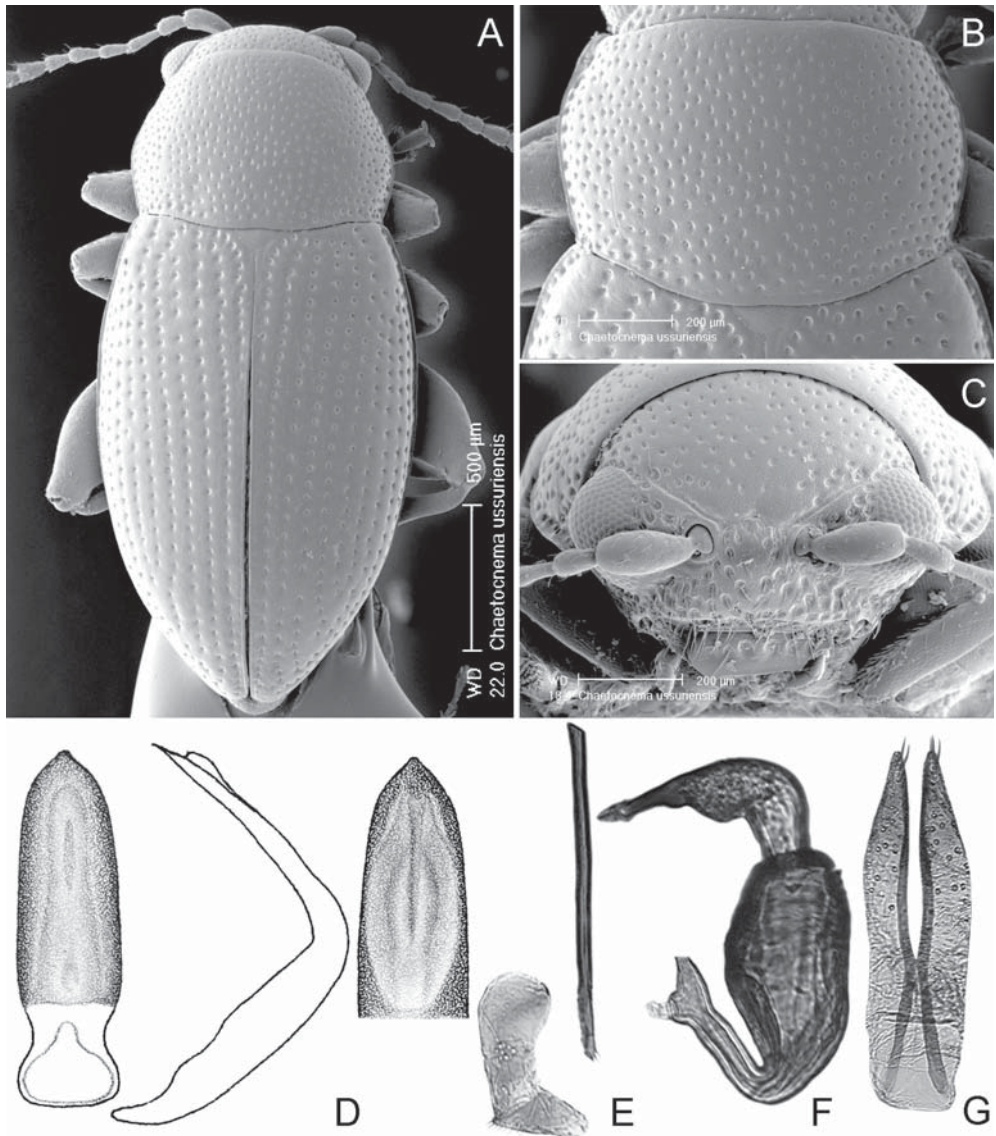
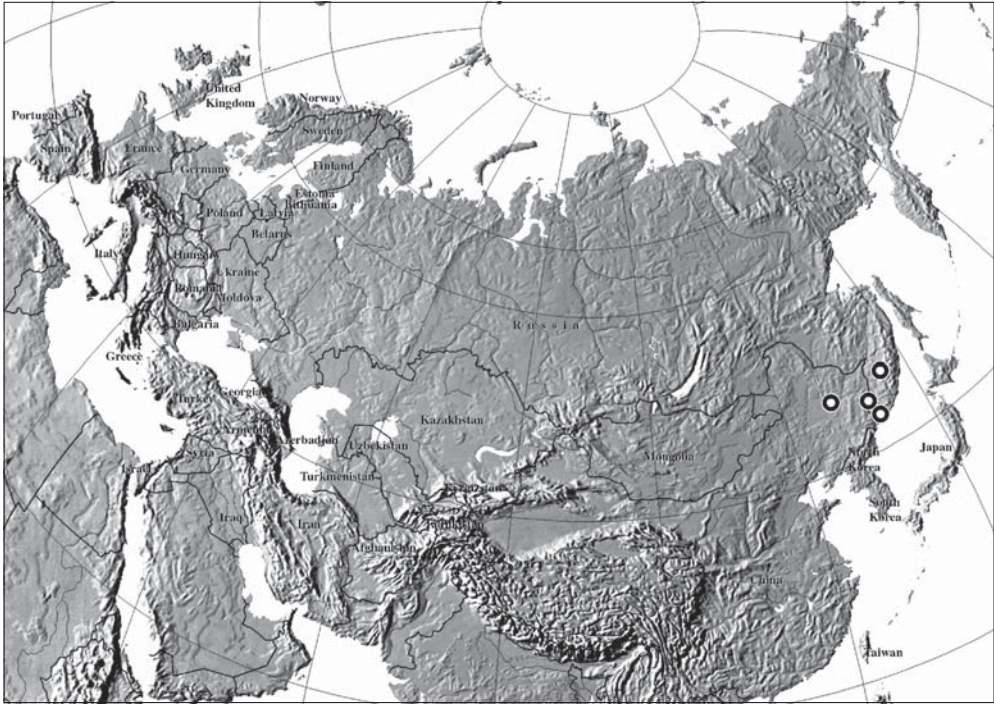


Figure 81. *Chaetocnema ussuriensis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.

Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callus poorly developed.

First male protarsomere length to width ratio, 1.60–1.64. First and second male protarsomere length to length ratio, 1.18–1.22. First and second male protarsomeres



Map 75. *Chaetocnema ussuriensis*

width to width ratio, 0.98–1.02. Length of metatibia to distance between denticle and metatibial apex 2.58–2.62. Large lateral denticle on metatibia obtuse. Metatibial serration proximal to large lateral denticle absent. Metatibia proximad to denticle convex in dorsal view. First male metatarsomere length to width ratio, 2.68–2.72. First male protarsomere maximum width to width at base ratio, 1.90–1.94. First and second male metatarsomere length to length ratio, 1.64–1.68. First and second male metatarsomere width to width ratio, 0.99–1.03. Third and fourth male metatarsomere length to length ratio, 1.86–1.90.

Apical third of aedeagus narrowing. Aedeagus distal to basal opening wider than that just before apical declivity. Apical part of aedeagus in ventral view narrowing gradually. Ventral surface of aedeagus lateral to median groove apically flat, horizontal; basally flat. Ventral longitudinal groove in apical half and middle of aedeagus poorly developed, shallow, with obtuse margins; well-developed with obtuse margins or poorly developed with obtuse margins in basal half. Apical part of longitudinal groove narrower or as wide as basal; middle part narrower than basal; as wide as apical. Longitudinal groove in middle subequal to or greater than distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, tall, wide, flat on top;

slightly curved ventrally in lateral view. Minute, transverse wrinkles absent from basal and apical part of ventral side of aedeagus. Aedeagus in lateral view abruptly curved. Maximal curvature of aedeagus in lateral view situated medially.

Spermathecal pump about as long as receptacle. Apex of spermathecal pump flattened. Spermathecal receptacle piriform. Spermathecal pump attached to middle of receptacle top. Maximum width of receptacle situated at about middle. Basal part of receptacle narrower than apical. Posterior sclerotization of tignum without particular shape, as wide as midsection. Midsection of tignum nearly straight. Anterior sclerotization of tignum about as wide as midsection. Apex of vaginal palpus elongately, acutely deltoid. Midpart of vaginal palpus (before apex) parallel-sided at base, abruptly narrowing toward apex. Anterior sclerotization of vaginal palpus slightly widening or narrowing anteriorly; very little curvature; broadly rounded or acute at extreme anterior end. Length of posterior sclerotization greater than width. Width of posterior sclerotization greater than that of anterior sclerotization.

Remarks: An important distinguishing character for this species is the very narrow first protarsomere of the male. It is nearly as narrow as that of the female. This tarsomere is usually much wider in males of nearly all other Palearctic species. *Chaetocnema ussuriensis* is similar to *C. compressa* and *C. procerula* in having the aedeagus strongly bent in lateral view. *Chaetocnema ussuriensis* can be separated from *C. compressa* and *C. procerula* by the ventral side of the aedeagus lacking a well-developed ventral groove, the whole ventral side is slightly concave. In *C. compressa* and *C. procerula* the ventral side has a more or less well-developed ventral groove.

Type material: *Chaetocnema ussuriensis*: Holotype female: 1) Nikolsk Ussurljsk, Ussurigeb. Mandl, 2) *Chaetocnema ussuriensis* m. Holotypus, det. Heiktgr., 3) *Chaetocn. ussuriensis* Heikt., Typus, 4) vielleicht nur Rasse von *procerula*?, 5) 1953 Coll. Heikertinger (1 NHMB).

Material: CHINA: 1) Heilungkiang, May 29, 1966, leg. Peter Hammond (1 BMNH); RUSSIA: 1) Dalnii Vostok, 18.7.80, B. Levada, Konovalov (1 USNM); 1) Kamen-Rybolov, lake Hanka, Yuzhnouss. Cherskii, 12 VI 08, 2) *Chaetocnema seminovi* m., 1928. D. Ogloblin det., 3) *Chaetocnema ussuriensis* Heikertinger, det. A. S. Konstantinov, 2003 (4 ZMAS); 1) Voroshilov, Ussur. 14.IV.31, T. Samojlov (1 ZMAS); Male 1) Voroshilov, Ussur. 14.IV.31, T. Samojlov, 2) *Chaetocnema ussuriensis* Hkt., I. Lopatin det., 1960 (1 ZMAS); 1) Ussuri zapk. 28.VII.1992, Kamenushka, Konstantinov (1 USNM).

Summary of Nomenclatural Changes

New Species

- Chaetocnema belka* new species
- Chaetocnema bergeali* new species
- Chaetocnema eastafghanica* new species
- Chaetocnema franzi* new species
- Chaetocnema igori* new species
- Chaetocnema lubischevi* new species
- Chaetocnema tbilisiensis* new species

New Synonyms

- Biodontocnema* Biondi 2000 = *Chaetocnema* Stephens 1831
- C. altisocia* Chen & Wang 1981 = *C. psylloides* Pic 1909
- C. arisi* Pic 1915b = *C. grandis* Pic 1909
- C. castillana* Bergeal & Doguet 2005 = *C. rufofemorata* Pic 1915b
- C. insolita* (Allard 1860) = *C. sahlbergii* (Gyllenhal 1827)
- C. medvedevi* Palij 1968 = *C. aridula* (Gyllenhal 1827)
- C. ogloblini* Palij 1970 = *C. ingenua* (Baly 1877a)
- C. sonkulica* Palij 1968 = *C. costulata* (Motschulsky 1860)
- C. turhalus* Iriboz 1934 = *C. breviuscula* (Faldermann 1837)

New Homonyms

- C. insolita* (Allard 1860) = *C. insolita* (Foudras 1860)

Status Restored

- C. grandis* Pic 1909, status restored
- C. ljudmilae* Lopatin 1961, status restored
- C. septentrionalis* Kimoto 1963, status restored

New Status

- C. pelagica* Caillol 1924, new status
- C. transbaicalica* Heikertinger 1951, new status

Lectotype Designations

- C. aeneicolor* Pic 1915a
- C. aridula* Gyllenhal 1827
- C. arisi* Pic 1915b
- C. aurifrons* Jacoby 1885
- C. bella* Baly 1877a
- C. brenskai* Pic 1910
- C. chalceola* Jacoby 1885
- C. christinae* Heikertinger 1909
- C. coyei* Allard 1864
- C. cylindrica* Baly 1874
- C. delarouzei* Brisout 1884
- C. discreta* Baly 1877a
- C. fulvipes* Jacoby 1885
- C. grandis* Pic 1909
- C. granulifrons* Baly 1877a
- C. granulosa* Baly 1874
- C. ingenua* Baly 1877a
- C. japonica* Jacoby 1885
- C. jurassica* Pic 1915a
- C. leonhardi* Heikertinger 1951
- C. longula* Weise 1890
- C. mannerheimii* Gyllenhal 1827
- C. orientalis* Bauduér 1874
- C. persica* Baly 1877a
- C. psylloides* Pic 1909
- C. punctifrons* Abeille 1907
- C. rufofemorata* Pic 1915b
- C. sahlbergii* Gyllenhal 1827
- C. sinuata* Weise 1889
- C. splendens* Motschulsky 1845

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