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(Coleoptera: Chrysomelidae: Galerucinae: Alticini)

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(COLEOPTERA: CHRYSMELIDAE: GALERUCINAE: ALTICINI)

by Alexander S. Konstantinov¹, Andrés Baselga², Vasily V. Grebennikov³, Jens Prena¹, Steven W. Lingafelter¹

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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. breviuscula* 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.
Acknowledgements

Initial research leading to this work was supported by the National Research Initiative grant (USDA, Konstantinov & Lingafelter, co-PI's). This study would not have been possible without the help of colleagues and curators who made collections under their care available for us: Y. Abe and O. Tadauchi (KUEC), M. Alonso-Zarazaga (MNCN), M. Baehr (ZSMC), M. Döberl (DCAG), B. Farrell and P. Perkins (MCZC), J. Frisch (ZMHB), J. Hájek (NMPC), M. A. Jäck, H. Schönmann, and H. Schillhammer (NHMW), M. G. Kalashyan (JKHC), D. Kavanaugh (CASC), B. Korotyaev and M. Volkovitsh (ZMAS), H. Mejlon (UUZM), O. Merkl (HNHM), D. Mifsud (MCMA), A. Mantilieri (MNHN), F. Ronquist (NHRS), S. Shute (BMNH), S. Shiyake (OMOJ), E. Sprecher-Uebersax and M. Brancucci (NHMB), and H. Takizawa (Oyama Tochigi, Japan).

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 ZMH. 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. Kalashyan;
- **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>
<thead>
<tr>
<th><em>Chaetocnema</em> species</th>
<th>Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>C. aridula</em></td>
<td>barley (<em>Hordeum</em> spp.), oats (<em>Avena sativa</em>), rye (<em>Secale cereale</em>), wheat (<em>Triticum</em> spp.)</td>
</tr>
<tr>
<td><em>C. breviuscula</em></td>
<td>beet (<em>Beta vulgaris</em>)</td>
</tr>
<tr>
<td><em>C. concinna</em></td>
<td>beet (<em>Beta vulgaris</em>), buckwheat (<em>Fagopyrum esculentum</em>)</td>
</tr>
<tr>
<td><em>C. hortensis</em></td>
<td>barley (<em>Hordeum</em> spp.), flax (<em>Linum usitatissimum</em>), wheat (<em>Triticum</em> spp.)</td>
</tr>
<tr>
<td><em>C. ingenua</em></td>
<td>millet (<em>Panicum miliaceum</em>)</td>
</tr>
<tr>
<td><em>C. picipes</em></td>
<td>beet (<em>Beta vulgaris</em>)</td>
</tr>
<tr>
<td><em>C. scheffleri</em></td>
<td>buckwheat (<em>Fagopyrum esculentum</em>)</td>
</tr>
<tr>
<td><em>C. tibialis</em></td>
<td>beet (<em>Beta vulgaris</em>)</td>
</tr>
</tbody>
</table>
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 Chevolat 1845:6; Redtenbacher 1849:539, subjective synonym of Chaetocnema, priority reversed).


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

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


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).


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. Monró’s & 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 *Hydorpus* [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 *Hydorpus* 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 fig-
ures 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 longstand-
ing 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 subge-
nus, *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. breviuscula*, with C.
Revision of the Palearctic Chaetocnema species

delarouzzei, 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 punctuation 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 subregion. 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. klapperichii*) 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; *tl1*, length of metatibia from base to denticle; *tl2*, 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 .......... 9
   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 septentrionalis Kimoto
   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 pelagica Caillol
   Surface of vertex with 8–10 punctures near eye. Profemora and mesofemora yellow. Apical third of aedeagus narrowing (Fig. 71 D) .... Chaetocnema semicoerulea (Koch)

6(4). Surface of vertex sparsely and unevenly covered with punctures. Profemora and mesofemora yellow. 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, converging 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 lubischevi Konstantinov et al.
Pro- and mesofemora light brown. Elytron black without metallic luster, pronotum 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 ..........
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 coyei (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, loosing 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 delarouzeei (Brisout)

Pro- and mesofemora light brown. Suprafrontal sulcus deep laterally, shallow in middle (Fig. 44 C)........................ Chaetocnema kanmiyai 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 schlaefl ii (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) ................................................................. 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 aerosa (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 (Fig. 8 D) ..........

..................................................................................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 Gruev

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 Gruev

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. 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

38(35). 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

Posterior sclerotization of tignum Y-shaped, much wider than mid section (Fig. 40 E) .............................................................Chaetocnema imitatrix Gruév

39(38). Profemora yellow .................................................................................................. 41

40(25). Ventral longitudinal groove in apical half of aedeagus well-developed, deep, with obtuse margins (Fig. 43 D) ..........Chaetocnema kabakovi Lopatin

41(40). Ventral longitudinal groove in apical half of aedeagus shallow, with obtuse margins (Fig. 77 D) ........Chaetocnema tarsalis Wollaston

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

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 loosing sharp border (Fig. 35 E)...... ................................................................. Chaetocnema grandis Pic

Posterior sclerotization of tignum widening into shapeless sclerite (Fig. 61 E) ........................................................ Chaetocnema pagane/g308 ii Heikertinger

Posterior sclerotization of tignum narrowing, sharply differentiated from surrounding sclerite, posteriorly widening loosing sharp border (Fig. 35 E)........ ................................................................. Chaetocnema grandis Pic

Posterior sclerotization of tignum without particular shape, as wide as mid section (Fig. 67 E) ..................................................................................................39

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)

Profemora partly brown ..................................................................................................42

Profemora light brown ..................................................................................................43

Profemora brown ........................................................................................................ 45
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 .............................. Chaetocnema oblonga Lopatin

Protibia partly brown. Antennomere 1 partly dark brown. Elytral humeral callus poorly developed. Large lateral denticle on metatibia sharp .................. Chaetocnema sinuata Weise

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) Chaetocnema arenacea (Allard)

Ventral longitudinal groove in middle of aedeagus well-developed, deep, with obtuse margins (Fig. 58 D, E) Chaetocnema tbilisiensis Konstantinov et al.

Ventral longitudinal groove in middle of aedeagus poorly developed, shallow, with obtuse margins (Fig. 11 D) Chaetocnema hortensis (Geoffroy)

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 aridula (Gyllenhal)

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 obesa (Boieldieu)

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) ..............................................................

..................................................................................................................

\textit{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) ..................................................................................

..........................................................................................................................................

\textit{Chaetocnema subcoerulea} (Kutschera)

50(48). Pro-, meso-, and metatibiae yellow. Diameter of pronotal punctures subequal to distance between them..............................\textit{Chaetocnema hortensis} (Geoffroy)

Pro-, meso-, and metatibiae partly brown. Diameter of pronotal punctures 2 to 4 times smaller than distance between them ..........................................................................................

..........................................................................................................................................

\textit{Chaetocnema mannerheimii} (Gyllenhal)

51(45). Pro-, meso-, and metatibiae yellow. Metatibial serration proximal to large lateral denticle absent ...........................................\textit{Chaetocnema arida} Foudras

Pro-, meso-, and metatibiae partly brown. Metatibial serration proximal to large lateral denticle present, obtuse.................................

..........................................................................................................................................

\textit{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* Graélls 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 Caïro”; 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 (Dagestan, 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 bronzish without yellow. Pronotum copperish. Antennomere 1–3 completely yellow. Antennomere 4 partly brown. Anten-
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. Fronto-lateral sulcus present. 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), 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.


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
Revision of the Palearctic Chaetocnema species

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.


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.

Chaetocnema species of the Palearctic Region


Chaetocnema afghana Gruev

Fig. 8, Map 2


**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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontal 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-
losity 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.

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


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotlateral 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.
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-

**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.
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.


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.


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, Sty. 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, Ariege, 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 Ros., 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 (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.


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.


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...
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.

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.
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

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).


**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, Gruve 1990a), Hungary (Vig 1996), Italy (Biondi
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).

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.
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.


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.

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 proximal 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.

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.

Revision of the Palearctic *Chaetocnema* species


**Chaetocnema aridula** (Gyllenhal)

Fig. 12, Map 6


**Distribution:** Algeria, Albania, Austria (Redtenbacher 1849), Azerbaijan (Lopatin 1977b), Belarus (Lopatin 1986), Belgium (Derenne 1963), Bosnia and Herzegovina
Revision of the Palearctic Chaetocnema species (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 (Pütele 1971), Liechtenstein, Lithuania, Luxembourg, Mace-

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.
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

**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

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontalateral 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.


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.


**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 Gyllenh, 1827, det H-E Wanntorp 2008; 4) Lectotype *Chaetocnema aridula* Gyllenhals des. A. S. Konstantinov et al., 2009 (UUZM). Paralectotype, the same labels as lectotype except first label with leg a (1 UUZM).


**Material:** AUSTRIA: 1) ? Nied. Oesterr. Klosterneburg, 10.1909 Krekich, 2) Chaetocnema aridula, Heikertigner 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) Bisambg. 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 Íegg., 2) Ch. aridula
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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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotemporal 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-
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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.

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.
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
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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.


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).

**Chaetocnema basalis** Baly

*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 (Shipley 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.


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
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.

**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.

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.


**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.

**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.


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


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.
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.


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 margings. 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.


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


*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.


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.


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 protarsomer 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
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.
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.


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**Chaetocnema bicolorata Kimoto**

Fig. 18, Map 12


**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.


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.

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

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

Fig. 19, Map 13

breviuscula 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 (Čižek 2006), Tajikistan (Lopatin & Tadjibaev 1972), Turkey, Turkmennistan (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.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus 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), 1.10–1.12. 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.


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-
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Proximal to large lateral denticles 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.


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 breviuscula* has an extensive range that covers almost all the Palearctic Region except most of Europe.

Our observations undoubtedly confirm that *C. breviuscula* 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. delarouzeei* 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. breviuscula*, 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. delarouzeei* 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. breviuscula* with which we here synonymize it.


**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: “Syré, 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
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(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.


Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontoal 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
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
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-differentiatted, 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-
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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.


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.


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.


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.
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

**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.
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.


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.


**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 1896), 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 (Klebeck & 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 (Pūtele 1971), Liechtenstein, Lithuania, Luxembourg, Macedonia (Gruev 1992), Moldova, Montenegro (Gruev 1979), Morocco (Jolivet 1967), Netherlands (Leesberg 1881), Norway (Klebeck & Sjöberg 1957), Poland (Bartkowska 1994), Romania (Gruev et al. 1993), Russia (Iablokoff-Khnzorian 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
Host plants: \( \text{Brassica rapa, Urtica, Humulus lupulus (Bargagli 1878); Rumex maritimus, R. obtusifolius, R. silvester, R. crispus, R. acetosa, R. hydrolapthum, Polygonum amphibium, P. lapathifolium, P. persicaria, P. mite, P. aviculare, P. hydrotiper (Heikertinger 1925; Jolivet 1967); Rheum officinale, Rumex crispus, Polygonum aviculare (Nonveiller 1960); Rheum rhaponticum, Fagopyrum tataricum, Beta vulgaris (Fogato & Leonardi 1980); Polygonaceae, Chenopodaceae (Biondi 1990a); Polygonum cuspidatum, Rumex arifolius, R. acetosa, Atriplex (Doguet 1994).} \)

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.


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.


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...
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.
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.

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.

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Chaetocnema concinnicollis (Baly)

Fig. 23, Map 17

concinnicollis Baly 1874:208 (type locality: Japan, “Nagasaki”; type depository: BMNH); as Plecotroscelis philoxena Baly 1877a:595 (type locality: China, “Kin Kiang”; type depository: BMNH); as Plecotroscelis; 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 Kray) (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 ascendens (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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotateral 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.

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
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.

**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 nomenculatuarly available themselves.

Revision of the Palearctic Chaetocnema species


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 (Sterlin 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.


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 callosity 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.
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 Al-lard 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.

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. 9 km N Askale, 07.VI.1999, pass 1500 m, fields along river, leg. A. Konstantinov (6 USNM); 1) Turkey. 8 km N 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. schmaleNahtsaum, det. Heikert., 3) 1953 Coll., Heikertinger (1 NHMB); 1) Turkestan, Reiter Leder., 2) blank blue label, 3) Ahngeri, Penisprâp, 4) conducta mit der Type der Ahngeri verglichen und, det. Heikter., 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 (De-renne 1963), Bosnia and Herzegovina, Croatia (Gruve 1992), Denmark (Hansen 1927), England (Fowler 1890), France (Doguet 1994), Germany (Stein & Weise 1877), Greece (Gruve 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 (Gruve 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 roof by 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.

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

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


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.


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).


**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.


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), 2.22–2.33. 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
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-lateral prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures subequal to distance between them.


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.


**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.

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


*Chaetocnema coyai* (Allard)

Figs. 5, 27, Map 21

coyai 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 coyai; type locality: not given; type depository: ZMHB); Heikertinger 1951:210 (synonymized)

delagrangeri 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 1998a), 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.


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
Revision of the Palearctic *Chaetocnema* species

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

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.
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.


Remarks: The lectotype of Chaetocnema coyeli 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 coyeli has a unique aedeagus with the apex asymmetrical.


**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 (Gressi & Kimoto 1963), Japan (Chûjô & Kimoto 1961), Korea. **Host plants:** Triticum aestivum (Gressi & Kimoto 1963).
Revision of the Palearctic Chaetocnema species

**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.

**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.

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.


Map 22. Chaetocnema cylindrica

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 (Chrysomeldae) 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); Paralectotypetypes: 1) No specific data, 1910, G. Lewis; 2) Paralectotype Chaetocnema cylindrica Baly, des. A. S. Konstantinov et al. 2009 (4 BMNH).

Chaetocnema delarouzeei (Brisout)

Fig. 29, Map 23

delarouzeei Brisout 1884:89 (type locality: “Syrie: Jericho” (Palestinian territories), “Algérie: PERRÉGAUX”; 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.


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.


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 protarsomereres 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.
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-
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 delarouzeei 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. delarouzeei 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).


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 Delarouzeei, 3) Peyerimhoff, 4) tibialis v. Delarouzeei, det. Heikertg., 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 delarouzeei Bris., M. Bergeal det. 87, 3) Male (1 USNM); MOROCCO: 1) Ouest Marrakech, May 2, 1983, leg. S. Doguet (5 BCPF).

Chaetocnema depressa (Boieldieu)

Fig. 30, Map 24

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* (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.


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. Frorns 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.


Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callosity 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 protarsomerse width to width ratio, 1.13–1.17. Length of metatibia to distance between denticule and metatibial apex 2.52–2.85. Large lateral denticule on metatibia sharp. Metatibial serration proximal to large lateral denticule present, sharp. Metatibia proximad to denticule 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-
Revision of the Palearctic Chaetocnema species
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

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.
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.


**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
Revision of the Palearctic Chaetocnema species

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 gibilfrons, 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. chrysicollis Foudr. (2 BMNH); 1) Var, St. Raphael (Var), St. Cl. Deville, Claire-Diville 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) Almeria, Bacares, 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) 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* kanika Maulik 1926:216 (type locality: India, “? Calcutta”; type depository: IMCI); Scherer 1969:163 (synonymyzed)
**Taxonomic Treatment of the Chaetocnema Species of the Palearctic Region**

*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.


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.


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 dente and metatibial apex 2.55–2.61. Large lateral dente on metatibia sharp. Metatibial serration proximal to large lateral dente present, obtuse. Metatibia proximad to dente 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
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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.

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


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.

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.

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

**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

**Map 26. Chaetocnema eastafghanica**
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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotolateral 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.


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, 1.14. 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.

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

*go/g308 waldi* 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.


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.

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.

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 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

**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) paratypotous, 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 (Král 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.
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.


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.


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.


**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).
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.

Figure 36. *Chaetocnema granulosa*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal.
of pronotum at base, 1.08–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.46–1.50.


Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, straight to shallowly retrace. 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.


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 proximal 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.


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 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 protarsomereres 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.
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.

**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.
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.

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*.


**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 USNM); 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


**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 (Klebeck & Sjöberg 1957), Egypt (Alfieri 1976), England (Stephens 1839), Estonia, Finland (Klebeck & 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 (Klebeck & 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.


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, Ahdabda, I, K, Belarus.
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.


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.


**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. brenskei* was treated as a valid species by Gruev & Döberl 1997:79 (see also Lopatin 1990). The male genitalia of the lectotype of *C. brenskei* 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. brenskei* and *C. hortensis* as well. Based on that, we consider *Chaetocnema hortensis var. brenskei* Pic to be a synonym of *C. hortensis*. Specimens from Great Britain differ in having the second antennomere slightly darkened.


**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:
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);
**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.


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.


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
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
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.

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.


**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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontalateral 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.
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 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.
losity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.


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.


Remarks: In the original description, Gruev (1990b) suggested that Chaetocnema imitatrix is most similar to Chaetocnema subcoerulea and Chaetocnema leonhardi and provided a key for their separation. One of the two characters which were used to separate Chaetocnema subcoerulea and Chaetocnema imitatrix is the apex shape of the aedeagus. Gruev (1990b) suggested that it is pointed in Chaetocnema subcoerulea and “not pointed” in Chaetocnema imitatrix. We found that the shape of the apices of the aedeagi of Chaetocnema imitatrix and Chaetocnema 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 Chaetocnema imitatrix and narrower in Chaetocnema subcoerulea. The aedeagus of Chaetocnema imitatrix also differs in being more abrupt at the apex with the tip being curved dorsally (lateral view); in Chaetocnema subcoerulea the aedeagus has a wider longitudinal groove. Chaetocnema imitatrix also differs significantly from Chaetocnema leonhardi. For additional distinguishing characters see the key.

Apart from the aforementioned species, Chaetocnema imitatrix is similar to Chaetocnema rufofemorata and Chaetocnema 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.

**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)


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

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.

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.

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.


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.


**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).


**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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotateral 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-
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Respectively 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

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

Map 36. Chaetocnema jelineki
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 punctation 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*).


**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.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotemal 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.


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 proximal 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 denticule 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.
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
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 punctuation 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.


**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,

**Chaetocnema kanmiyai Kimoto**

Fig. 44, Map 38


**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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotemporal 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.


Length of metatibia to distance between dентicle 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
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**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) (Kyu-shu), 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.


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.


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
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

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.
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.

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 bluish (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*; suprafacial 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 Pyongyan 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).


Chaetocnema klapperichi Lopatin

Fig. 46, Map 40


**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 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.


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, 1.41–1.43. 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.

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.
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
Revision of the Palearctic Chaetocnema species


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. Metatibia 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.


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
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 midpoint of vaginal palpus (before apex) narrowing from

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.

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.


**Chaetocnema leonhardi** Heikertinger

Fig. 48, Map 42


**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 suture, 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.


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. Metatibial proximal 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.


**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.
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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. Heiktgr., 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)

**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
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

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.


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.


**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, Tigrvaya 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-

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.


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.


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
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

**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.
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.

Remarks: Chaetocnema lubischevi is similar to C. breviuscula, C. delarouzeei, 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 punctuation 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. delarouzeei 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. Lubischev, who collected part of the type series.


Chaetocnema major (Jacquelin du Val)
Fig. 51, Map 45


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 bronzish without yellow or greenish without yellow. Pronotum blueish, rarely bronzish 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.

Heads 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 callosity 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
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
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.

Map 45. Chaetocnema major
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).


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 Kray) (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.


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
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.
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 arcing. 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.


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 (Gruvev 1990a), Hungary (Vig 1996), Italy (Biondi 1990a), Latvia (Pūtele 1971), Liechtenstein, Luxembourg, Kazakhstan (Lopatin 1977b), Kyrgyzstan (Lopatin 1977b), Netherlands (Leesberg 1881), Moldova, Mongolia, Poland (Bartkowska 1994), Romania (Gruvev et al. 1993), Russia (European part) (Konstantinov 1988), Serbia (Gruvev 1992), Slovakia, Slovenia (Gruvev & 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 suture, 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.


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.


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 proximal to denticle convex
Revision of the Palearctic *Chaetocnema* species

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.

**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.
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 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 or well-developed, with obtuse 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 in middle subequal to or greater in width to distance between groove and lateral margin. Ventral longitudinal ridge in middle of aedeagus absent. Apical denticle of aedeagus in ventral view well-differentiated, narrow, flat on top, short or tall; straight in lateral view. Minute transverse wrinkles on basal and apical part of ventral side of aedeagus present or absent. 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

Remarks: The current concept of *C. mannerheimii* is based on the female lectotype (UUZM) that we compared with male specimens from Estonia. 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).

**Chaetocnema modesta** Gressitt & Kimoto

*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.


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.
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
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.

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 Dist., W. Hupeh, China, VIII-31-48, 2) Gressitt, Djou Collectors., 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 Dist., 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.


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.

Elytra with convex sides. Periscutellar punctures on elytron confused. Second through sixth rows of punctures at base of elytron confused. Elytral humeral callosity 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 proximal 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, 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.

wide as anteriorly before apex. Anterior sclerotization of vaginal palp 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 *Chaetocnema montenegrina*. Most of *C. montenegrina* specimens are easily separated from *C.*
*Chaetocnema* montenegrina: Lectotype male: 1) Krivosije, Pagane/g308 i, 2) blank blue label, 3) hortensis montenegrina m. [red label], 4) 1953 Coll., Heikertinger, 5) lectotype, J. Bechyné 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 Pagane/g308 i, 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, Ahaia, Erimanthos, Kalentzi, 14 IV 2000, B. et M. Bergeal leg., 2) Collection, M. Bergeal, Versailles, 3)

**Chaetocnema nebulosa** Weise

Fig. 56, Map 50

*nubulosa* 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.


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.


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
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

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.
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.


Map 50. Chaetocnema nebulosa
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.


*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.
Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotateral 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
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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.


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).


**Chaetocnema obesa** (Boieldieu)

Fig. 58, Map 52


*Chaetocnema unicolor* Weise 1888:769 (as variety of *meridionalis*; type locality: not given; type depository: ZMHB); Heikertinger 1951:212 (synonymized)

*Chaetocnema corcyrica* Pic 1909:139 (as variety of *meridionalis*; type locality: Greece, “Corfou”; type depository: MNHN); Heikertinger 1951:212 (synonymized)

*Chaetocnema 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), Slovenia, 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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotateral 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
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, 1.09–1.14. 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.


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.


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.


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,
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

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.
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 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.


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.


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.


**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.


**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);
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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.

**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.

Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontal lateral 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.


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

**Remarks:** *Chaetocnema paganetii* 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.


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.
Chaetocnema pelagica Cailléol, new status
Fig. 62, Map 56

pelagica Cailléol 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 (Cailléol 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.


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 denticule and metatibial apex 2.32–2.36. Large lateral denticule on metatibia obtuse. Metatibial serration proximal to large lateral denticule present, sharp. Metatibia proximad to denticule 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.


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 (Döbler 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, Gruve 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 Caill., No. 70 (2 USNM); 1) San Basilio Murgien, leg. Paganetti, coll. Dr. J. Fodor, 2) Chaetocnema chlorophana, Gruve 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) Benzus 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,
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 Pardal, 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
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(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) Gilbraltar, 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 (Duft.), Baselga det. (2 MNCN); 1) Guadalajara, Azañón, 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 Orake 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, 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, Casioio, 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-

**Chaetocnema picipes** Stephens

Fig. 63, Map 57


*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-
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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).

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**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.
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.


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. Pronotum base evenly convex. Base of pronotum without longitudinal impres- 
tate 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 protarsomeret 
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. 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 nar- 
rowing abruptly. Ventral surface of aedeagus lateral to median groove convex apic- 
ally, 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 midsec- 
tion. 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 dis- 
tribution 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. helptapotamica*) 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).


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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_ (Théron 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.


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


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.

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 metarsomere and a pronotum almost as wide as the elytra. It is similar

*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.*
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.


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(1 NHMW); 1) Hyères (Le Ceinturon), May 17, 1988, leg. M. Bergeal (15 BCPF); 1) 83-Hyères, Ceinturon, 17 V 88, M. Bergeal (5 BCPF); GERMANY: 1) Mark: Umbgeb. 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-Dannenberg, April 11, 1993 (3 BCPF); 1) Germ. Schl.-Holstein, Bad Oldesloe, Traveuer Nütschau, 03.06.1996 D. Siede, 2) Chaetocnema procerula, det D. Siede 1996, 3) col-lergealversailles (1 BCPF); GREECE: 1) Corfu, Reitter, 2) Chaet procerula Rosh (2 USNM); 1) Corfu, 2) 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) Gilbraltar (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; lecto-type 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.

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.


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.
Apex of vaginal palpus evenly rounded. Sides of midpoint 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.

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).


Chaetocnema punctifrons (Abeille)

Fig. 66, Map 60

punctifrons Abeille 1907:lxix (type locality: Algeria, Theniet el Had and ’Ain Torki, “forêt de cèdres de Téniet et à Margueritte”; type depository: MNMH; lectotype designated here); as Plectroscelis

Distribution: Algeria (Abeille 1907), Italy (Biondi 1990a).

Host plats: 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.


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
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
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*.


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 pronotum 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.


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.


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
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

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).
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.


**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);

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 Plecostelis; 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 (Klebeck & 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 (Klebeck & 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 (Král 1967a), Ukraine.

**Host plants:** *Juncus* (Bargagli 1878); *Carex, Vaccinium oxyccocos* (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.


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.


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
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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-
gitudinal 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.

Map 62. Chaetocnema sahbergii
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).

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

(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 [Istambul] (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), Mudeford, 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* (Korotyaev, pers. com), *Fagopyrum esculentum* (Pali) 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
of pronotum at base, 1.10–1.11. Ratio of maximum width of both elytra to maximum width of pronotum, 1.37–1.38.


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.
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.


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.


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. breviuscula and C. tibialis. It can be separated from them by the aedeagus having the ventral groove occupying the entire length of the ventral side.


Material: BULGARIA: 1) Bulgarie mer., Sandanski, 6 VII 74 Hoff er, 2) collbergeralversailles, 3) Chaetocnema scheffleri Kutschera, M. Bergeal det. 1996 (1 BCPF); 1)

Chaetocnema schlaeflii (Stierlin)

Fig. 70, Map 64

schlaeflii; 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 32.2.3.1) rather than evidence for inadvertent error in description (Article 32.5.1)]; (type locality: Iraq, “Bagdad”; type depository: unknown); as Plectrosceles tarda Motschutsky 1845a:107 (not Foudras 1860; type locality: “Caucase”; type depository: unknown); as Cardiapus; Heikertinger 1951:210 (synonymized)
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*persica* Baly 1877b:167 (type locality: “Persia”; type depository: BMNH, lectotype designated here); Heikertinger 1951:210 (synonymized)

*impunctifrons* Pic 1909:138 (type locality: “Turkménie”; 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.


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.


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. schlaefl ii* 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*).


Figure 70. Chaetocnema schlaflii; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral, and dorsal; E, tignum; F, spermatheca; G, vaginal palpi.
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)
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*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.


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.


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.
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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

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.
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*.

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) Wurzacher 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. Krasnava 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), Basela det. (2 MNCN); 1) Gerona, Tordera, July 20, 1994, leg. Stehling (1 BCPF); 1) La Rioja, Nieva de Cameros, 2) Chaetocnema semicoerulea (Koch), Basela 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. (TI) semicoerulea (Koch), det. A. S. Konstantinov, 2002 (1 USNM).

Chaetocnema septentrionalis Kimoto, status restored
Fig. 72, Map 66


**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.

Head hypognathous. Frontal ridge between antennal sockets narrow and convex. Frontolateral sulcus present. Suprafrontal sulcus deep laterally, absent in middle, resistant. 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.


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, 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. 
Based on these characters we treat *C. septentrionalis* as a valid species.

*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.

Chaetocnema shabalini Palij

Fig. 73, Map 67

shabalini Palij 1968:17 (type locality: Kyrgyzstan, “Tien-Shan, intersection of Chatkal and Fer-gana mountain ridges, Tash-Kumyr”; type depository: unknown; paratypes ZMAS)

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
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of pronotum at base, 1.00–1.02. Ratio of maximum width of both elytra to maximum width of pronotum, 1.20–1.24.


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

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**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.
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.


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.


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, Gruev det. (3 ZSMC).

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**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.


Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontotateral 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.


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,
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

![Figure 74. Chaetocnema sinuata; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral, lateral.](image)
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*
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*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 Kray) (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.


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.


Elytra with convex sides. Single row of regular periscutellar punctures present. Second through sixth rows of punctures at base of elytron regular. Elytral humeral callosity 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 dентicle 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.
Map 69. Chaetocnema splendens

tocnema splendens Motsch., Medvedev det. (1 ZSMC); 1) Mongolia, NW shore of Ureg-Hur, Ubsunuskii aimak, 15.VIII.968 Kozlov. (1 ZMAS); 1) Mongolia, Ubur-changaj 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. der. 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).
**Revision of the Palearctic *Chaetocnema* species**

**Chaetocnema subcoerulea (Kutschera)**

Fig. 76, Map 70


$christinae$ 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.


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.


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-
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.
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)


Chaetocnema tarsalis Wollaston

Fig. 77, Map 71


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).
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.

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.

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.


Remarks: The only specimen (female) of Chaetocnema 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 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
Revision of the Palearctic *Chaetocnema* species

of pronotum at base, 1.09–1.12. Ratio of maximum width of both elytra to maximum width of pronotum, 1.31–1.34.


**Figure 78.** *Chaetocnema tbilisiensis*; A, habitus, dorsal; B, pronotum, dorsal; C, head, frontal; D, aedeagus, ventral and lateral.
Head hypognathous. Frontal ridge between antennal sockets wide and flat. Frontal-lateral 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.


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 Caunus”; 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* (Peyerimhoff 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 leucocelada*, *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*, *Camphorosoma 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
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.

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.


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.


Remarks: Chaetocnema tibialis is similar to C. breviuscula, C. delarouzeei, 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. breviuscula, 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. delarouzeei* 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).

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 depositary: NHMB; lectotype designated by Bechyné 1956:583)

**Distribution:** Mongolia, Russia (Buryatia, Chita, Primorsky Kray) (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 8o. *Chaetocnema transbaicalica*; 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 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. Posteriorial prothoracic callosity projecting up to lateral margin of pronotum. Diameter of pronotal punctures 2–4 times smaller than distance between them.


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 protarsomerese
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 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; 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) Sutschansk-Rudnik, Ussuri Juli, 2) semicoerulea transbaicalica m. det. Heiktgr., 3) Sutschansk-Rudnik, 4) 1953 Coll. Heikertinger (1 NHMB); Paralectotype: 1) Werchne-Udinsk,


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**Chaetocnema ussuriensis** Heikertinger

Fig. 81, Map 75

*ussuriensis* Heikertinger 1951:201 (type locality: Russia, “Nikolsk Ussuriysk”; 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.


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.

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

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.
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.


Summary of Nomenclatural Changes

New Species
Chaetocnema belka new species
Chaetocnema bergeali new species
Chaetocnema castafghanica 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. breviscula (Faldermann 1837)

New Homonyms
C. insolita (Allard 1860) = C. insolita (Foudras 1860)

Status Restored
C. grandis Pic 1909, status restored
C. sjudmilae 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. brentsei Pic 1910
C. chalceola Jacoby 1885
C. christinae Heikertinger 1909
C. coyae Allard 1864
C. cylindrica Baly 1874
C. delarouzeei 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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