

**A new subgenus and new species of the buprestid tribe  
Acmaeoderini (Coleoptera: Buprestidae: Polycestinae)  
from the Palaearctic and Oriental regions**

M.G. Volkovitsh

**Новый подрод и новые виды златок трибы  
Acmaeoderini (Coleoptera: Buprestidae: Polycestinae)  
из Палеарктической и Ориентальной областей**

М.Г. Волкович

Zoological Institute, Russian Academy of Sciences, Universitetskaya nab. 1, St. Petersburg 199034, Russia.  
E-mail: polycest@zin.ru

**Abstract.** *Medvedevera* subgen. n. (type species *A. burmanica* sp. n.) is erected in the genus *Acmaeodera*. *Acmaeoder* (*M.*) *burmanica* from Myanmar, *A. (Loepotethya) tibetica*, *Acmaeoderella (Carininota) medvedevi*, both from China, and *A. (Euacmaeoderella) holocyanea* spp. n. from Morocco are described and compared with closely related species.

**Key words.** Coleoptera, Buprestidae, new subgenus, new species, *Acmaeodera (Medvedevera)*, *A. (Loepotethya)*, *Acmaeoderella (Carininota)*, *A. (Euacmaeoderella)*, Palaearctic, Oriental Region, Myanmar, China, Morocco.

**Резюме.** В роде *Acmaeodera* установлен подрод *Medvedevera* subgen. n. (типовой вид *A. burmanica* sp. n.). Описаны 4 новых вида: *Acmaeoder (M.) burmanica* (Мьянма), *A. (Loepotethya) tibetica* (Китай), *Acmaeoderella (Carininota) medvedevi* (Китай) и *A. (Euacmaeoderella) holocyanea* (Марокко) spp. n. Составлены диагнозы новых таксонов.

**Ключевые слова.** Жесткокрылые, златки, новый подрод, новые виды, Coleoptera, Buprestidae, *Acmaeodera (Medvedevera)*, *A. (Loepotethya)*, *Acmaeoderella (Carininota)*, *A. (Euacmaeoderella)*, Палеарктика, Ориентальная область, Мьянма, Китай, Марокко.

### Introduction

Since the publication of the list of Acmaeoderini from the USSR and adjacent countries (Volkovitsh, 1986a) which covered a large part of the Palaearctic Region, extensive material from previously poorly investigated areas of the Palaearctic and Oriental regions continued to come for examination or identification. Among this material a number of species turned out to be new to science. Some of them have been described during the last decades (Volkovitsh, 1986b, 1987a, 1987b, 1988, 1989; Alexeev, Volkovitsh, 1989; Alexeev et al., 1990; Bellamy, Volkovitsh, 1992; Volkovitsh, Bellamy, 1994; Levey, Volkovitsh, 1996; Volkovitsh, Liberto, 2002; Volkovitsh, 2004, 2005) while many other new species

remain undescribed. In this paper a new subgenus *Medvedevera* is erected in the genus *Acmaeodera*, and four new species are described: *A. (M.) burmanica* from Myanmar, *A. (Loepotethya) tibetica* and *Acmaeoderella (Carininota) medvedevi* from China, and *A. (Euacmaeoderella) holocyanea* from Morocco. I would like to thank Dr S. Bílý, M. Gigli, D. Gianasso, V. Kubáň, and H. Mühle for sending specimens of the new species for examination. Particular thanks to Prof. G.S. Medvedev for his kind guidance, assistance, and friendship during many years of collaborative work in the Laboratory of Insect Taxonomy of the Zoological Institute, Russian Academy of Sciences, and many joint collecting trips to Middle Asia and Transcaucasia. The study was partly supported by the Russian Foundation for Basic Research (grant no. 04-04-49109-a); the collection of the Zoological Institute is supported by the Russian Federal Agency for Science and Innovations (State contract no. 02.452.12.7111).

The following abbreviations are used in the text: DGCC – D. Gianasso collection (Castelnuovo del Bosco, Italy); HMMC – H. Mühle collection (Munich, Germany); IZCAS – Institute of Zoology, Chinese Academy of Sciences (Beijing, China); MGRC – M. Gigli collection (Rome, Italy); SBPC – Dr S. Bílý collection (Prague, Czech Republic); TICB – TAMMIN, Insecta collection (Brno, Czech Republic; <http://home.tiskali.cz/tAMMIN/>); ZIN – Zoological Institute, Russian Academy of Sciences (St. Petersburg, Russia).

### Genus *Acmaeodera* Eschscholtz, 1829

#### Subgenus *Medvedevera* Volkovitsh, subgen. n.

Type species *Acmaeodera (Medvedevera) burmanica* sp. n.

**Diagnosis.** Among the below-mentioned characters, only elytral pattern is distinguishing for the new subgenus though a similar pattern occurs also in the genus *Acmaeoderella*. Other character states can be found throughout various acmaeoderine groups: in the body shape, *A. (M.) burmanica* is similar in part to *Brachmaeodera tantilla* (Kerremans, 1906) from South Africa (Volkovitsh, Bellamy, 1992) and some Nearctic species of the *Acmaeodera gibbula* group; in the expanded pro- and mesotibiae, as well as in the strongly expanded membranous parameres, to some African species of *Acmaeodera*; in the squamose vestiture, to *Acmaeoderella*, *Acmaeodera (Rugacmaeodera)*, some *Acmaeodera* s. str. and others. However, the set of these characters in *A. burmanica* allows establishing for this species a new subgenus within *Acmaeodera* Eschscholtz, 1829.

**Description.** Body (Figs 1–3) short, robust, with well defined dorsal curvature; covered with narrow-lanceolate and setiform scales. Pronotum distinctly narrower than elytra at humeri, with sides forming continuous line with prehumeral elytral margin (Figs 1, 3). Elytra without subhumeral incisure, with symmetrical ochre-yellow longitudinal lateral maculae in anterior 2/3, stepwise expanding up to 2nd–3rd intervals medially; epipleura strongly arcuately curved in anterior 1/3, nearly completely covering metepisterna (Fig. 2). Pro- and mesotibiae markedly expanded toward apices. Aedeagus (Figs 4, 5), particularly penis (Fig. 5), and pregenital segments, sternite 8 with angular anterior margin and two membranous areas laterally, and tergite 9 with apophyses widely separated at middle, are of the *Acmaeodera* (s. str.) type, but tegmen weakly sclerotized with parameres strongly enlarged and membranous in anterior 1/3 (Fig. 4).

**Etymology.** The subgenus is named for Prof. G.S. Medvedev at the occasion of his 75th birthday.

#### *Acmaeodera (Medvedevera) burmanica* Volkovitsh, sp. n. (Figs 1–5)

**Diagnosis.** *A. (M.) burmanica* sp. n. differs greatly from all other Palaearctic and Oriental species of *Acmaeodera* in the short and robust body, distinctive elytral pattern and aedeagus structure. Other distinguishing characters see in the diagnosis of the subgenus *Medvedevera*.

**Description.** Body (Figs 1–3) relatively small, length 5.4 mm, width 1.9 mm; short, broad, robust, convex, with well defined dorsal curvature; with metacoxal tooth strongly projecting and visible from above laterally; obscure bronzy with feeble coppery sheen; elytra blackish brown with two large, symmetrical, regular, longitudinal ochre-yellow maculae laterally in anterior 2/3; covered with finely lanceolate and setiform scales.

Head narrow, flattened, slightly depressed medially when seen from above; frons widely longitudinally depressed, without median groove or line, with very shallow obscure depression anteriorly, with nearly parallel, slightly curved sides, weakly diverging to vertex posteriorly. Vertex flattened, without longitudinal keel; width of vertex 1.39 times transverse diameter of eye and 1.09 times width of frons above antennal depressions. Clypeus narrow, with rounded lateral projections

and carinate margins, with broad, shallow, arcuate median emargination anteriorly. Eyes large, convex, distinctly projecting from head. Frons with ocellate, partly reticulate sculpture of dense, round or slightly oval umbilicate punctures with distinct granules and fine setiferous micropunctures; intervals less than 1/2 diameter of punctures, shining; covered with short, anteriorly-directed, semi-decumbent, white, finely lanceolate scales. Antennal depressions very large, separated by own diameter. Antennae of male relatively short, with length 1.59 times height of eye, expanded from antennomere 5; antennomere 2 weakly oval; 3 and 4 subequal, slightly swollen apically; antennomere 5 distinctly wider than 4, transversely triangular, with straight inner margin; 6–10 transverse, 1.5 times as wide as long, with arcuate inner margin; 11 irregularly oval with rounded apex.

Pronotum (Figs 1, 2) strongly convex, campaniform, nitidous, widest at base, 1.77 times as wide as long, distinctly narrower than elytra at humeri; sides sharply arcuately converging from base to apex, continuing prehumeral elytral margin. Anterior margin angularly projecting; basal margin feebly emarginate. Lateral carina delicate, poorly defined but entire. Surface evenly convex, without median groove or line; prescutellar fossa small, shallow; lateral fossae small, well defined, not surrounded by depressions, slightly distant from base. Sides with reticulate, nearly alveolate sculpture changing medially to reticulate-rugose with poorly defined rugae and then to ocellate sculpture of shallow, umbilicate punctures with inconspicuous inner structures; disc with ocellate sculpture of similar, at base slightly asperate, dense umbilicate punctures with intervals less than diameter of punctures. Vestiture on sides formed by decumbent, finely lanceolate, white scales; that on disc, by longer and finer white and brownish decumbent scales. Anterior prosternal margin nearly straight, bordered by fine sulcus, extending to anterior corners; prosternum evenly convex, distinctly transversely depressed behind anterior margin; covered with ocellate sculpture of small, dense, slightly asperate, umbilicate punctures; prosternal process broad, expanded apically, with emarginate sides and widely arcuate apex (Fig. 3). Hypomera with ocellate sculpture of larger, rounded, superficial umbilicate punctures with rough bottom. Metepisterna almost completely covered by elytral epipleura (Fig. 2). Sides of meso-, metasternum, and metacoxal plates with coarse reticulate, changing medially to ocellate sculpture of umbilicate punctures. Posterior metasternal margin bordered with wide, smooth, nitidous stripe (Figs 2, 3).

Elytra (Figs 1, 2) short and broad, 2.15 times as long as wide at base, convex; base slightly arcuately projecting forward; sides strongly diverging at humeri and converging behind them, then evenly arcuately diverging toward posterior 1/3 and converging to widely rounded apices. Subhumeral incisure absent, epipleura strongly arcuately curved from base to anterior 1/3 of 1st abdominal sternite; fine epipleural saw-like serration poorly visible in posterior 1/3 of elytral length. Strial punctures on disc large, oval, partly fused in anterior half of elytral length, and completely fused and deeply impressed in posterior half, well defined at elytral base. Intervals flat, subequal, narrow, at disc 1.5–3 times as wide as striae; 9th interval not elevated, smooth; covered with big, nearly as wide as strial, superficial, uniserial punctures on smooth, in anterior 1/3 finely rugulose, background, and with short, regularly uniserial, fine, white and brown scales. Surface nitidous, blackish brown with distinct violet sheen; with symmetrical ochre-yellow longitudinal lateral maculae in anterior 2/3, starting at base, stepwise expanding up to 2nd–3rd intervals medially, and reaching posterior 1/3 of elytra.

Legs (Figs 1, 3) blackish brown with bronzy sheen; posterior margin of metacoxal plates bisinuate with short median and long lateral emarginations; with metacoxal tooth strongly projecting and visible from above laterally. Pro- and mesotibiae distinctly curved and expanded toward apices, with longitudinal elevation separating flat external part. Legs covered with white fine scales and short brown setae; metatibia bearing row of brown thick setae externally. Tarsomeres subequal, slender; 5th thin, weakly expanded apically, as long as other tarsomeres altogether; tarsal pulvilli poorly developed on tarsomeres 1 and 2, each larger toward distal end. Claws in male short, broad, strongly curved, with large acute inner tooth at the middle.

Abdomen (Fig. 3) blackish bronzy; sides of sternites with ocellate sculpture of oval umbilicate punctures with well defined inner granules; remaining surface with sparser punctate sculpture of small, partly obliterated punctures; sides covered with white lanceolate scales not covering background, disc with very fine setiform scales. Anal sternite in male short, transverse, entirely bordered, truncate and weakly emarginate apically.

**Male.** Aedeagus as in Figs 4, 5. Sternite 8 with angular anterior margin and two membranous areas laterally; tergite 9 with apophyses widely separated at middle.

**Female.** Unknown.

**Material.** Myanmar. **Holotype:** ♂, Burma, S Sagaing Division, Po Win Daung Caves env. (25 km W–WSW of Monywa), 20 VI 1997, J. Kaláb leg. (TICB).

**Etymology.** The new species epithet refers to the traditional name of Myanmar (Burma).

### **Subgenus *Loepotethya* Volkovitsh, 1979**

***Acmaeodera (Loepotethya) tibetica* Volkovitsh, sp. n.** (Figs 6–9, 18, 19)

**Diagnosis.** Based on the shape and sculpture of the body, structure of the antennae and male genitalia, shape of the elytral subhumeral incisure and tarsal claws, and setal vestiture, *A. tibetica* sp. n. undoubtedly belongs to the subgenus *Loepotethya*. Until present, this subgenus was only known from its

type species, *A. (L.) ocellata* Abeille de Perrin, 1891, from Turkey, Syria, Iraq, and western Iran. Diagnoses of the two species of *Loepotethya* are given in Table 1.

**Table 1.** Diagnostic characters of *Acmaeodera (Loepotethya) tibetica* sp. n. and *A. (L.) ocellata* Abeille de Perrin.

Character	<i>A. tibetica</i> sp. n.	<i>A. ocellata</i> Abeille de Perrin
Body, length	6.1 (5.7–6.4) mm	8.8 (7.4–10.9) mm
Frons	With well defined, wide longitudinal median depression or groove	With poorly defined median depression, groove or line
Frons, sculpture	Pseudoalveolate, of large, dense, deep punctures with indistinct inner structures	Ocellate to reticulate, of umbilicate punctures with distinct granules
Antennae, antennomeres 7–10	Nearly as wide as long	Transverse, nearly twice as wide as long
Pronotum, sculpture of disc	Coarse, pseudoalveolate, of large, dense, deep punctures (Fig. 6)	Punctate, of small, sparse, partly asperate punctures
Pronotum, pattern	Absent	With yellow broad marginal stripe or macula
Ventral surface, sculpture	Entirely with pseudoalveolate to punctate sculpture of simple punctures (Fig. 8)	Hypomera, metasternum and abdominal sternite 1 with ocellate sculpture of umbilicate punctures laterally
Elytra, interval width / stria width ratio	1 or 1.5–2.5	2–4.5
Elytra, coloration and pattern	Ochre-yellow with blackish brown elytral base, humeri, suture, and several small elongate marks (“discoïda” type) (Fig. 6)	Blackish brown with transverse, partly longitudinally fused anteriorly, yellow stripes (“ottomana” type)
Abdomen, visible sternite 1	Unicolorous	Frequently with yellow macula
Abdomen, anal sternite in male apically	Arcuately emarginate	Truncate
Tegmen, parameres	Distinctly curved in anterior 1/3 (Fig. 18)	Nearly straight*
Tegmen, basal piece	Short, triangular, acute apically (Fig. 18)	Long, widely rounded apically*
Penis, shape of lamina	Broad, band-like, enlarged in middle part (Fig. 19)	Narrow, scapiform*

\* See Volkovitsh, 1979: figs 35, 36.

*Description.* Body (Figs 6–8) of medium size, length 6.1 (5.7–6.4) mm, width 1.9 (1.8–2.0) mm, elongate, slender, convex, with well defined dorsal curvature; black with steel or feeble bronzy sheen; elytra ochre-yellow with more or less regular pattern of black or brown longitudinal bands and isolated spots; covered with long, erect, blackish brown or mixed yellowish and brown setae.

Head broad, flattened, slightly convex medially when seen from above; frons convex, slightly depressed or flattened anteriorly, without median groove or line, with feebly arcuate sides weakly diverging to vertex. Vertex with longitudinal, sometimes indistinct keel extending to posterior 1/3 of frons, with width 2.00 (1.94–2.12) times transverse diameter of eye and 1.08 (1.06–1.11) times width of frons above antennal depressions. Clypeus broad, with rounded anterior margins of lateral projections and narrow, deep, arcuate median emargination. Frons with pseudoalveolate sculpture of large, dense, deep punctures with indistinct inner elements, denser anteriorly; posteriorly with catenulate sculpture forming transverse rugae; intervals less than a puncture diameter, smooth and shining; covered with long, erect, directed anteriorly and slightly incurved apically yellowish and brownish setae. Antennae relatively short, slightly differing between sexes, with length 1.63 (1.53–1.69) times height of eye, expanded from antennomere 6; antennomere 2 oval, swollen; antennomeres 3–5 subequal, slightly expanded apically; antennomere 6 distinctly wider than 5, triangular, with obtuse apex; antennomeres 7–10 triangular, nearly as wide as long, with arcuate inner margins and obtuse apical angles; antennomere 11 elongate, regularly arcuate apically.

Pronotum (Figs 6, 7) convex, campaniform, nitidous, widest at middle or in basal 1/3; at base 1.72 (1.65–1.80) times as wide as long, with sides shortly arcuately diverging toward basal 1/3 and then converging anteriorly. Anterior margin slightly angularly projecting or straight, basal margin straight. Lateral carina delicate, entire. Pronotal surface convex, without median groove or line, with very weak, short, longitudinal preapical depression, poorly transversely depressed at base; prescutellar fossa large, deep; lateral fossae small, deep, surrounded by well defined depressions. Sides with alveolate changing to coarse alveolate-rugose sculpture of deep, large, polygonal umbilicate punctures with flat bottom, and distinct setiferous micropunctures; disc laterally with alveolate-rugose sculpture and poorly defined concentric rugae, changing

medially to pseudoalveolate sculpture of large, dense simple punctures. Surface covered with long, erect, mixed yellowish and brown, or only brown setae. Anterior prosternal margin slightly curved, bordered by fine sulcus, extending to anterior corners; prosternum evenly convex, covered with pseudoalveolate to punctate sculpture of small, dense, deep punctures; prosternal process broad, short, bordered laterally (Fig. 8). Hypomera with distinct lateral lobe and with pseudoalveolate sculpture of larger deep simple punctures. Sides of meso- and metasternum, and metacoxal plates with coarse pseudoalveolate changing to simple punctate sculpture medially; metepisterna exposed, broad (Fig. 7).

Elytra (Figs 6, 7) elongate, 2.53 (2.46–2.61) times as long as wide at base, convex, relatively narrow; sides converging behind humeri, slightly diverging toward middle, and evenly converging to narrowly rounded apices. Subhumeral incisure poorly defined, epipleura with shallow emargination at base and wide indistinct lobe opposite metacoxae; rather coarse epipleural saw-like serration visible almost up to middle of elytral length, denser and smaller at apices. Strial punctures on disc large, rounded, deep, separated; striae not sulciform, distinct at elytral base. Intervals flat, subequal, narrow, on disc 1.5–2.5 times as wide as striae; 9th interval slightly elevated, bearing very small denticles; covered with very fine, indistinct, uniserial punctures on finely shagreened background, and with long, erect, uniserial, mixed yellowish and brown or only dark brown setae nearly as long as double interval width. Surface of elytra dull, ochre-yellow with blackish brown base, humeri, suture, and several small elongate marks near base on intervals 3 and 7, and laterally on intervals 8–9. This variable elytral pattern is rather similar to that in *Acmaeoderella* (s. str.) *discoïda* (F.) and related species but it is unclear whether it really belongs to the “discoïda” type or represents some particular type of elytral pattern.

Legs (Figs 6, 8) brunneous with bronzy sheen; metacoxal plates with posterior margin curved, slightly emarginate laterally, without lateral tooth. Tibiae slender, feebly enlarged apically, nearly straight. Legs covered with long white and brown hairs and short setae; metatibia bearing row of yellowish thick setae externally. Tarsomeres subequal; 5th thin, weakly expanded apically; tarsal pulvilli poorly developed on tarsomere 1, each larger toward distal end. Claws in both sexes long, broad, curved, with very large, rectangular, truncate apically inner tooth.

Abdomen (Fig. 8) blackish bronzy, nitidous; sides with pseudoalveolate sculpture of big, coarse punctures without distinct inner elements; remaining surface with punctate, in part, asperate sculpture of simple punctures; covered with dense, long, semi-erect white setae. Anal sternite in male short, slightly emarginate apically, bordered by sulcus; in female widely rounded apically.

**Male.** Aedeagus (Figs 18, 19) and pregenital segments quite similar to those in *A. (Loepotethya) ocellata* (see Volkovitsh, 1979, figs 35, 36).

**Female.** Ovipositor (Fig. 9) of tubular type, short, approximately twice as long as enlarged part; deeply angularly emarginate apically; styli elongate, nearly twice as long as wide, weakly expanded toward apices, separated by 1.5 own length. Hemisternites thin, slightly curved, do not reaching anterior margin; apical sclerotization poorly marked, with long, thin recurrent branches.

**Material.** China. Holotype: ♂, Tibet, Nyingchi, 3050 m, 7 VIII 1983, collector unknown (IZCAS). Paratypes: 1 ♂, 1 ♀, E Tibet, Gyamda, 110 km E of Mila Pass, 4200 m, 7 VI 1997, A. Wrzeczonko leg. (TICB; ZIN).

**Etymology.** The epithet of the new species refers to the collection area.

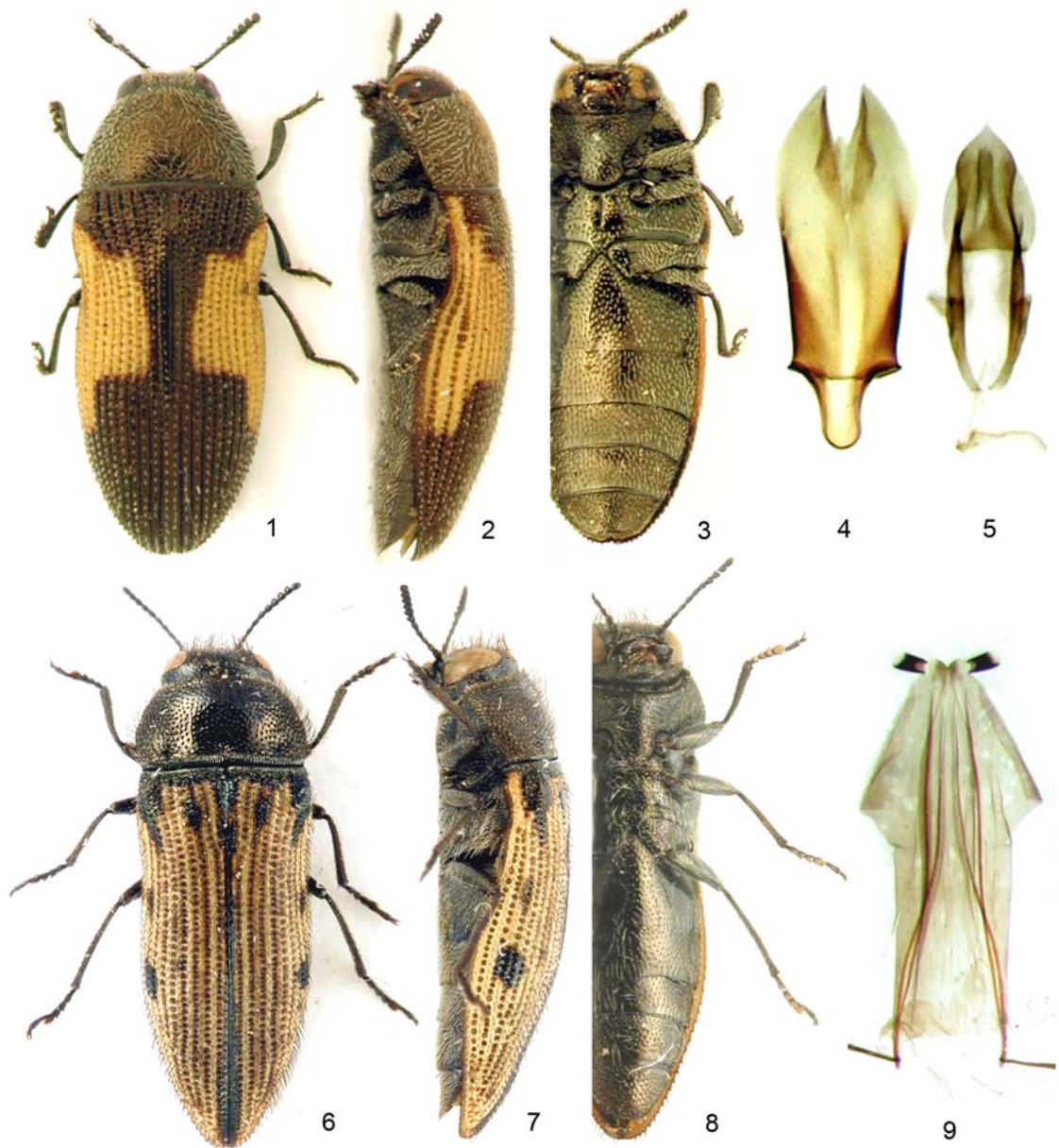
**Remarks.** The finding in the Plateau of Tibet the second species of the subgenus *Loepotethya* previously known only from the Eastern Mediterranean and the Middle East is of great importance not only for the taxonomy but also for the biogeography. This finding supports the Tethyan origin of *Loepotethya* and the ancient (Tertiary) history of the faunal connections between the western and eastern parts of the Palaearctic.

### **Genus *Acmaeoderella* Cobos, 1955**

#### **Subgenus *Carininota* Volkovitsh, 1979**

#### ***Acmaeoderella (Carininota) medvedevi* Volkovitsh, sp. n. (Figs 10, 11)**

**Diagnosis.** Despite the strongly elongate, narrow body which is characteristic of the subgenus *Omphalothorax* Volkovitsh, 1979, *A. medvedevi* sp. n. is a member of the *A. flavofasciata* species-group of the subgenus *Carininota*. It differs from other species of this group not only in the shape of body, but also in the large, deep frontal fossa; very deep cruciform pronotal depression strongly enlarged at base; strongly elevated, narrow pronotal keels with posterior slopes covered with corrugate sculpture and lateral continuations obliterated; wide striae and narrow intervals of the elytra; very fine, long, sparse scales ventrally never concealing the background. In appearance, *A. medvedevi* sp. n. resembles in part *A. flavofasciata tschitscherini* (Sem.), particularly, the form of the latter from southeastern Kazakhstan, western Mongolia and north-western China. Their diagnoses are given in Table 2



**Figs 1–9.** *Acmaeodera* spp. n. 1–5 – *A. (Medvedevera) burmanica*, male (holotype) (5.4 mm): 1–3 – body, dorsal (1), lateral (2) and ventral (3) views; 4, 5 – aedeagus, tegmen (4) and penis (5). 6–9 – *A. (Loepotethya) tibetica*, female (paratype) (6.4 mm): 6–8 – body, dorsal (6), lateral (7) and ventral (8) views; 9 – ovipositor.





**Figs 10–17.** *Acmaeoderella* spp. n. 10, 11 – *A. (Carininota) medvedevi* sp. n., female (holotype) (7.7 mm), dorsal (10) and lateral (11) views; 12–15 – *A. (Euacmaeoderella) holocyanea* sp. n., female (paratype) (10.4 mm): 12–14 – body, dorsal (12), lateral (13) and ventral (14) views; 15 – ovipositor; 16, 17 – undetermined host plant of *A. holocyanea* sp. n. (Morocco, Haut Atlas, Tizi-N-Test), general view (16) and fragment of root (17) (courtesy M. Gigli).

*Description.* Body (Figs 10, 11) of medium size, length 7.0–7.7 mm, width 1.9–2.2 mm, strongly elongate, slender, subcylindrical, with poorly defined dorsal curvature; black to blackish bronzy with light coppery sheen; elytra black with coal sheen or blackish brown with light violet sheen, with variable orange pattern of the “flavofasciata” type; dorsally with long, erect, mixed white and dark brown, setiform and finely lanceolate scales, ventrally with decumbent, sparse, white, finely lanceolate scales never concealing background.

**Table 2.** Diagnostic characters of *Acmaeoderella (Carininota) medvedevi* sp. n. and *A. (C.) flavofasciata tschitscherini* (Sem.).

Character	<i>A. medvedevi</i> sp. n.	<i>A. flavofasciata tschitscherini</i> (Sem.)
Body, shape	Strongly elongate (elytra 2.77–2.86 times as long as wide at base); parallel-sided (Fig. 10)	Moderately elongate (elytra 2.46–2.63 times as long as wide at base); elytral sides distinctly emarginate in anterior 2/3
Vertex and posterior part of frons	With large, deep, oval fossa	Flattened or slightly convex, sometimes with poorly defined median keel or line, without distinct fossa
Frons, sculpture	Alveolate, of polygonal and rounded alveolae with indistinct granules; intervals less than 1/2 puncture diameter, usually sharp	Ocellate, of umbilicate punctures with distinct granules; intervals nearly equal to 1/2 puncture diameter
Antennae of female, length	1.69–1.71 times height of eye	1.24–1.54 times height of eye
Pronotum, basal keels	About twice as long as high, separated by own length; posterior slopes with irregular, transverse, corrugated sculpture	About 4 times as long as high, separated by 1/2 of own length; posterior slopes with regular, longitudinal, parallel sculpture (expanding of basal cremaliere)
Elytra, stria punctures	Strongly elongate	Rounded or slightly elongate
Elytra, interval width / stria width ratio	1.5–2.0	2.0–4.0
Ventral surface, vestiture	Sparse, long, finely lanceolate scales never concealing background (Fig. 11)	Dense, imbricate, oval scales completely concealing background

Head flattened, narrow, impressed medially when seen from above; frons posteriorly and vertex with large, deep, oval fossa; frontal sides slightly curved, distinctly diverging to vertex. Width of vertex 1.77–1.91 times transverse diameter of eye and 1.15–1.17 times width of frons above antennal depressions. Eyes moderately convex, weakly projecting from head. Clypeus arcuately emarginate anteriorly. Frons with alveolate sculpture of large, deep, polygonal and rounded alveolae with indistinct granules and eccentric micropunctures which are sparser medially; intervals narrow, less than 1/2 diameter of a puncture, usually sharp; covered with long, erect, slightly incurved, dark brown setiform scales, mixed with white scales anteriorly. Antennae of female relatively long, 1.69–1.71 times as long as height of eye, expanded from antennomere 5; antennomere 2 rounded, swollen; 3 elongate, expanded apically; 4 longer and more strongly expanded apically than 3 but much more slender than antennomere 5; latter triangular, slightly longer than wide; antennomeres 6–10 triangular to trapezoid, nearly as long as wide, with arcuate inner margins; antennomere 11 elongate, foliaceous.

Pronotum slightly transverse, subquadrate; at base 1.29–1.39 times as wide as long, widest at middle; sides subparallel, sharply, angularly converging at very base and at anterior angles. Anterior margin distinctly angularly projecting, bisinuate, flattened. Base feebly emarginate; bearing two strongly elevated, smoothed apically keels with posterior slopes covered with irregular, transverse, corrugated sculpture; these keels twice as long as high, separated by nearly own length; lateral continuations of keels externally of lateral fossae obliterated, indistinct. Lateral carina completely lacking. Pronotal disc with very deep cruciform depression extending longitudinally from base to anterior margin and strongly enlarged in basal half, and transversely, behind middle, toward level of lateral fossae where its ends meet short longitudinal depressions running from base; such a cruciform depression is characteristic of subgenus *Carininota* being well developed in *A. farinosa* (Reiche) and *A. impunctata* (Ab.) but usually not so deep as in *A. medvedevi*. Basal fossae small, deep, situated on bottom of prescutellar and lateral depressions. Entire pronotal surface with alveolate sculpture of deep, large, polygonal or rounded alveolae with flat bottom, without distinct inner structures; covered with long, erect, mainly dark brown lanceolate scales mixed with white scales along depressions and laterally. Anterior prosternal margin slightly emarginate; prosternum convex, with alveolate sculpture, alveolae smaller than those on pronotum. Hypomera with alveolate sculpture of large, superficial umbilicate punctures and distinct micropunctures bearing wider decumbent scales. Sides of meso- and metasternum and metacoxal plates with alveolate to ocellate changing to simple punctate sculpture medially; metepisterna very finely shagreened. Thorax ventrally, except for hypomera, with long decumbent finely lanceolate scales not concealing background (Fig. 11).

Elytra strongly elongate, 2.77–2.86 times as long as wide at base, convex, narrow; sides nearly parallel toward posterior 1/3 of elytral length, then sharply, almost straightly converging to widely rounded apices. Subhumeral incisure deep;



coarse and sharp saw-like epipleural serration visible in posterior 1/3 of elytra, slightly blunted and smaller at apices. Strial punctures large, strongly elongate, deep, mainly fused; striae not sulcate, distinct at elytral base. Intervals flat, subequal, narrow, 1.5–2.0 times as wide as striae; 9th interval strongly elevated in posterior 1/3, coarsely and sparsely saw-like serrate; covered with very fine, distinct, uniserial or confused punctures on finely, in anterior 1/3 coarsely, transversely rugulose background, and with long, erect, mixed white and dark brown, finely lanceolate scales. Surface weakly shining, black or brownish with coal or feeble violet sheen; with rather regular pattern of the “flavofasciata” type consisting of two small spots on 3rd–4th intervals in anterior 1/3, two narrow fasciae, occasionally broken into separated spots behind middle, two short oblique fasciae in posterior 1/4 and two small subapical spots on 2nd–3rd intervals (Fig. 10).

Legs black with coppery sheen; metacoxal plates with posterior margin slightly emarginate. Tibiae slender, feebly expanded apically, slightly curved. Legs covered with long, fine, white scales and white and yellowish setae; metatibia bearing row of long yellowish setae externally. Tarsomeres subequal, 5th thin, weakly expanded apically; tarsal pulvilli well developed on tarsomeres 1–4, each larger toward distal end. Claws in female relatively short, strongly curved, with large, nearly rectangular inner tooth.

Abdomen blackish bronzy; sides of 1st visible sternite with ocellate sculpture of rounded umbilicate punctures; remaining surface with sparse simple punctures; covered with relatively sparse, long, finely lanceolate, white scales, never concealing background. Anal sternite in female narrowly rounded and feebly emarginate apically, lateral margins flattened, without premarginal sulcus or depressions.

**Male.** Unknown.

**Female.** Ovipositor of tubular type, similar to that in *A. flavofasciata*; long, approximately 3 times as long as enlarged part; deeply angularly emarginate apically, weakly sclerotized; styli short, not expanded toward apices. Hemisternites thin, slightly curved.

**Material.** China. **Holotype:** ♀, C China, [Shanxi], Jingangling, 50 km W of Linfen, 36°2' [N], 111°7' [E], 29–30 V 1996, leg. J. Halada (TICB). **Paratype:** ♀, C China, [Shanxi], Monan, Huang He River, 34°7' [N], 111°7' [E], 26–28 V 1996, leg. J. Halada (HMMC).

**Etymology.** This species is named in honour of Prof. G.S. Medvedev.

**Remarks.** The finding of *A. medvedevi* sp. n. in Shanxi Province of central China expands significantly the known range of the genus *Acmaeoderella* eastward up to 111° E. Up to now, the easternmost findings of *Acmaeoderella* species belonging mostly to the subgenera *Carininota* and *Omphalothorax* were reported from southwestern Mongolia, Xinjiang and western part of Neimenggu Province (= Nei Mongol Autonomous Region) of China west of 105° E (Volkovitsh, 1976; Alexeev, Volkovitsh, 1989).

#### ***Acmaeoderella (Euacmaeoderella) holocyanea* Volkovitsh, sp. n. (Figs 12–17, 20, 21)**

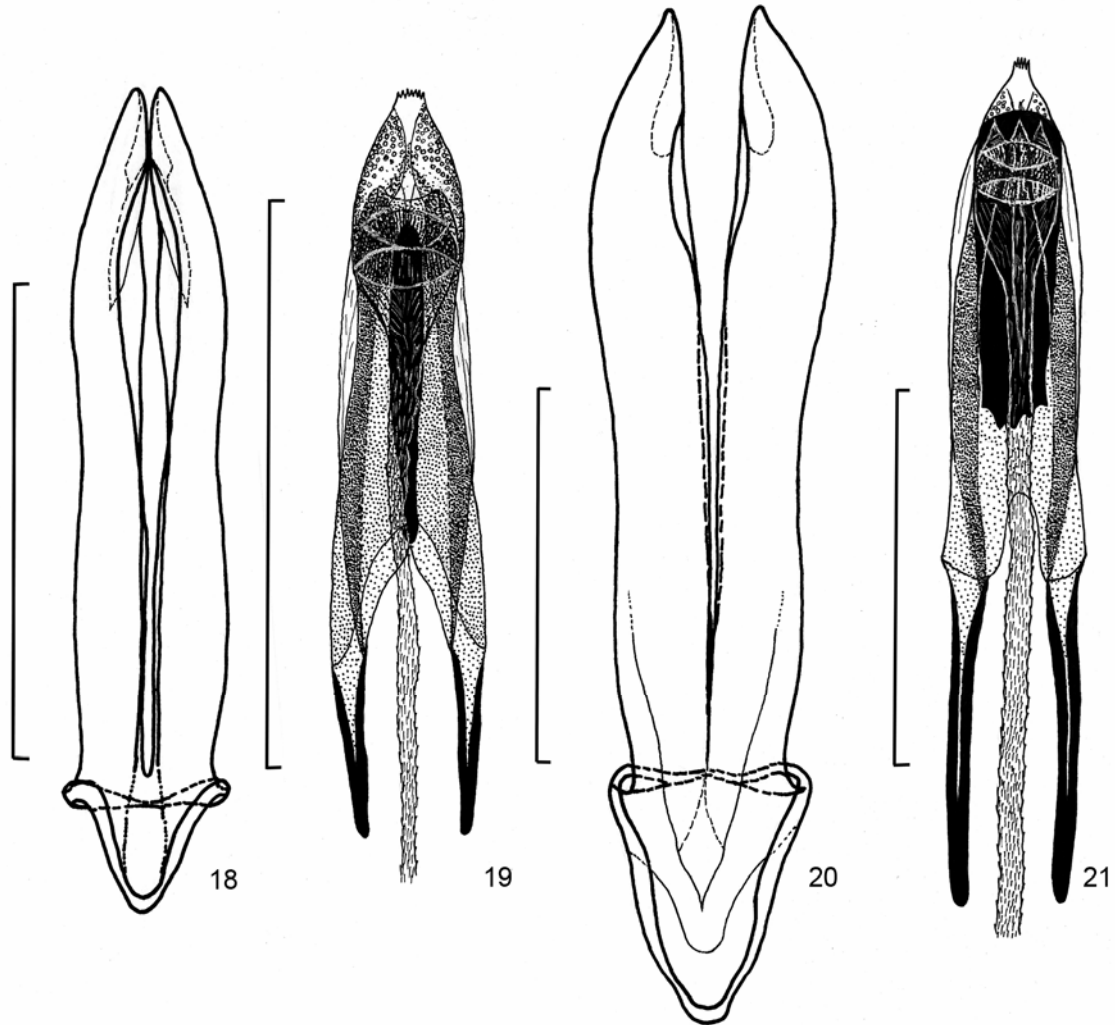
**Diagnosis.** *A. holocyanea* sp. n. is a member of the *A. villosula* species-group of the subgenus *Euacmaeoderella*. In the blue coloration of the elytra and large size this species is most similar to *A. villosula* (Steven, 1830), *A. mauritanica* (Lucas, 1844), *A. obscura* (Reitter, 1889), *A. subcyanea* (Reitter, 1890), and *A. coelestina* Volkovitsh, 1977. It differs from the mentioned species in the brightly blue coloration of the entire body (except for the always blue *A. coelestina* and occasionally blue *A. obscura*); strongly enlarged odd-numbered intervals of the elytra; long elytral scales (with length in male about 1.5 times width of odd-numbered interval), and in the structure of genitalia of both sexes. From the North-African *A. mauritanica*, the new species differs also in the strongly expanded antennae of male; not depressed medially frons; not sharpened apically, slender elytra with striae well marked and intervals transversely rugulose (in *A. mauritanica*, elytral striae are very thin, poorly visible, and entire elytral surface is strongly shagreened).

**Description.** Body (Figs 12–14) relatively large: length 10.0 (8.9–11.0) mm, width 3.6 (3.3–4.1) mm; broad, robust, convex, with well defined dorsal curvature; entirely metallic-blue, shining; head, pronotum, antennae and legs usually blackish blue, metepisterna black; covered with long, erect, curved, white setiform and finely lanceolate scales.

Head flattened, narrow when seen from above; frons flattened, without median depression or line; with sides feebly arcuate at middle, subparallel or weakly diverging to vertex. Width of vertex 1.78 (1.68–1.89) times transverse diameter of eye and 1.04 (1.00–1.07) times width of frons above antennal depressions. Eyes large, convex, distinctly projecting from head. Clypeus very narrow, with nearly straight anterior margin. Frons with ocellate, changing anteriorly to reticulate sculpture of small, rounded, superficial umbilicate punctures with distinct flat granules and eccentric micropunctures; intervals nearly equal to diameter of a puncture, smooth and shining; covered with long, erect, directed anteriorly and slightly incurved, setiform white scales. Antennae long, expanded from antennomere 5 in both sexes; in male, 1.90–1.98 times as long as height of eye; antennomeres 2 and 3 subequal, irregularly rounded, robust; antennomere 4 triangularly expanded but much narrower than 5th, slightly longer than wide, with blunt apical angle; antennomere 5 much wider than 4th, sharply

triangular, transverse, wider than long; antennomeres 6–10 strongly transverse, 1.5 times as wide as long, transversely enlarged; antennomere 11 irregularly foliaceous, truncate apically. Length of antennae in female 1.81–2.20 times height of eye; antennomere 4 subequal to 2nd and 3rd, distinctly narrower than 5th; antennomere 5 sharply triangular, nearly as wide as long; antennomeres 6–10 slightly transverse, weakly wider than long, rounded-triangular; 11th irregularly foliaceous.

Pronotum (Figs 12, 13) convex, at base 1.79 (1.73–1.86) times as wide as long, widest behind middle; sides subparallel toward widest point, then arcuately converging anteriorly. Anterior margin slightly angularly projecting, weakly bisinuate, flattened; basal margin straight. Lateral carina poorly defined, interrupted. Surface convex, with distinct, shallow, partly obliterated in anterior 1/3 but well defined near apex median groove; prescutellar fossa large, deep, triangular; lateral fossae deep, surrounded by well defined depressions. Sides with alveolate sculpture of deep, small alveolae with flat bottom. Disc with wide transverse stripe of very fine, dense, simple punctures across middle; with small, sparse simple punctures separated by 2–3 own diameters anteriorly, and with pseudoalveolate sculpture of large, deep punctures with flat bottom, separated by approximately 1/2 of own diameter, in basal 1/3. Surface covered with long, erect, very fine, white setiform and finely lanceolate scales forming patches at sides and transverse crest at middle (such sculpture and vestiture are characteristic



**Figs 18–21.** Acmaeoderini, tegmen (18, 20) and penis (19, 21), holotypes. 18, 19 – *Acmaeodera (Loepotethya) tibetica* sp. n.; 20, 21 – *Acmaeoderella (Euacmaeoderella) holocyanea* sp. n. Scale = 1 mm.

of the *A. villosula* group). Anterior prosternal margin slightly emarginate, bordered by fine sulcus; prosternum evenly convex, covered with ocellate sculpture of small, deep, rounded umbilicate punctures. Hypomera with ocellate sculpture of small, rounded, superficial umbilicate punctures with distinct flat granules. Sides of meso- and metasternum, and metacoxal plates with alveolate sculpture of small, deep alveolae changing medially to pseudoalveolate sculpture of umbilicate punctures. Sides of metasternum and metacoxal plates with dense, long, setiform scales forming triangular patches (Figs 13, 14).

Elytra (Figs 12, 13) broad, 2.21 (2.12–2.30) times as long as wide at base, convex, slightly flattened in anterior 1/3; sides weakly converging from humeri in anterior 1/3, slightly diverging toward posterior 1/3, and rather sharply, arcuately converging to relatively wide rounded apices. Subhumeral incisure deep; epipleural serration formed by very small, indistinct denticles hardly visible in apical 1/3 of elytral length. Strial punctures small, rounded, deep, mainly separated; striae not sulciform, distinct. Intervals flat; odd-numbered intervals enlarged, 3–4 times as wide as striae; even-numbered ones narrow, 1.5–2 times as wide as striae; 9th interval slightly elevated, unarmed; interval surface with very fine, confused, multiseriate punctures on transversely rugulose background. Lateral intervals strongly transversely rugulose; covered with long (in male with length about 1.5 times width of odd-numbered interval), multiseriate, white setiform and finely lanceolate scales. Elytra brightly blue, shining, unicoloured.

Legs (Figs 12, 14) blackish blue; metacoxal plates emarginate posteriorly. Tibiae broad, feebly, evenly expanded apically, nearly straight. Legs covered with long white feather-like scales and setae; metatibia bearing row of yellowish thick setae externally. Tarsomeres subequal, 5th broad, hardly expanded apically; tarsal pulvilli well developed on all tarsomeres, each larger toward distal end. Claws in male relatively long, expanded at base, strongly incurved, with small sharpened inner tooth at middle nearer to base; claws in female of similar shape but with smaller inner tooth.

Abdomen (Fig. 14) brightly blue; sides with punctate sculpture of dense, small, simple punctures; remaining surface with much sparser punctures on smooth nitidous background. Sides and posterior margins of sternites covered with dense, long, white setiform scales forming transverse patches; disc with short decumbent setae; anal sternite with white and brown, very short setae. Anal sternite in male blunted apically, with broad, oblique lateral depressions; in female narrowly bluntly rounded apically, slightly transversely depressed.

**Male.** Aedeagus (Figs 20, 21) long, relatively narrow, distinctly enlarged in anterior 1/4, heavily sclerotized; tegmen (Fig. 20) with wide basal piece; penis (Fig. 21) with broad lamina.

**Female.** Ovipositor (Fig. 15) of tubular type, short, approximately twice as long as enlarged part; deeply angularly emarginate apically; styli short, expanded toward apices, separated from each other by 2.5 own lengths. Hemisternites thin, curved, extending to apical margins of ovipositor.

**Material.** Morocco. Holotype: ♂, “Tizi-N-Tichka, 17 7 1992”, “Morocco, lgt. B. et J. Frýda” (SBPC). Paratypes: 1 ♂, as holotype (ZIN); 2 ♀, “Morocco 1999, High Atlas Mts., Chamharouch to Neltner, Toubkal massif, 31 5 [19]99, J. et H. Batelkovi” (SBPC, ZIN); 1 ♂, 1 ♀, “Morocco, Haut Atlas, Tizi-N-Test vers. Sud, m 2090, 29 5 2003, leg. D. Gianasso”, “25-12-2004, morta in celletta, su leguminosa bassa (DGCC)”; 1 specimen (damaged), “Morocco, Haut Atlas, Tizi-N-Test, m 2000, unid. Fabaceae, 22.III.2005, M. Gigli leg. (MGRC)”.

**Etymology.** This species name refers to the brightly blue coloration of the beetles.

**Bionomics.** Two adults and one mature larva of *A. holocyanea* sp. n. from Toubkal Massif (J. et H. Batelkovi) were reared/cut from *Bupleurum spinosum* L. (Apiaceae) (larval host plant). According to personal communications by M. Gigli and D. Gianasso, adults were cut from the roots of an unidentified shrub (Figs 16, 17).

## References

- Alexeev A. V., Volkovitsh M. G. 1989. A review of buprestid-beetles (Coleoptera, Buprestidae) of the Mongolian People's Republic. *Nasekomye Mongolii*. L. **10**: 301–368. (In Russian).
- Alexeev A. V., Volkovitsh M. G., Kabakov O. N. 1990. Materials on the fauna of the buprestid beetles (Coleoptera, Buprestidae) of Afghanistan. Part 1. *Problemy sistematiki zhestkokrylykh*. (Tr. Zool. Inst. Akad. Nauk SSSR. **211**): 59–83. (In Russian).
- Bellamy C. L., Volkovitsh M. G. 1992. A new species of *Microacmaeodera* Cobos (Coleoptera: Buprestidae) from the Philippines. *Coleopt. Bull.* **46**(1): 56–60.
- Levey B., Volkovitsh M. G. 1996. Five new species of Sub-Saharan and Arabian *Acmaeodera* (Coleoptera, Buprestidae). *Zoosyst. Ross.* **5**(1): 139–148.
- Volkovitsh M. G. 1976. The buprestid-beetles of the tribe Acmaeoderini (Coleoptera, Buprestidae) from Mongolia. *Nasekomye Mongolii*. L. **4**: 198–201 (In Russian).
- Volkovitsh M. G. 1979. A review of Palearctic groups of the tribe Acmaeoderini (Coleoptera, Buprestidae). *Entomol. Obozr.* **58**(2): 333–354. (In Russian).

- Volkovitch M. G. 1986a. Review of the buprestid tribe Acmaeoderini (Coleoptera, Buprestidae) of the fauna of the USSR and adjacent countries. *Morfologiya, sistematika i faunistika maloizuchennykh grupp nasekomykh*. (Tr. Zool. Inst. Akad. Nauk SSSR. **140**): 16–43. (In Russian).
- Volkovitch M. G. 1986b. A revision of the buprestid-beetles of the genus *Microacmaeodera* Cobos (Coleoptera, Buprestidae). *Entomol. Obozr.* **65**(1): 126–137. (In Russian).
- Volkovitch M. G. 1987a. A new species of metallic wood borers of the genus *Acmaeoderella* (Coleoptera, Buprestidae) from Uzbekistan. *Zool. Zh.* **66**(1): 139–143. (In Russian).
- Volkovitch M. G. 1987b. New species and a subspecies of the tribe Acmaeoderini (Coleoptera, Buprestidae) from the Palaearctic Region. *Geograficheskoe rasprostranenie nasekomykh*. (Tr. Zool. Inst. Akad. Nauk SSSR. **164**): 50–62. (In Russian).
- Volkovitch M. G. 1988. New species and subspecies of jewel beetles of the genus *Acmaeodera* Eschsch. (Coleoptera, Buprestidae) from Central Asia and Eastern Mediterranean. *Sistematika nasekomykh i kleshchei*. (Tr. Vsesoyuzn. Entomol. Obshch. **70**): 34–41. (In Russian).
- Volkovitch M. G. 1989. New and little known buprestid beetles of the genus *Acmaeoderella* Cobos (Coleoptera, Buprestidae) from the Eastern Mediterranean. *Problemy sistematiki nasekomykh*. (Tr. Zool. Inst. Akad. Nauk SSSR. **208**): 43–63. (In Russian).
- Volkovitch M. G. 2004. New records of Buprestidae (Coleoptera) from Israel with description of a new species. *Israel J. Entomol.* **34**: 109–152.
- Volkovitch M. G. 2005. *Acmaeodera* (*Acmaeodera*) *lopatini* sp. n. – new species of Buprestidae (Coleoptera) from Kyrgyzstan. Contributions to Systematics and Biology of Beetles. Papers celebrating 80th birthday of Igor Konstantinovich Lopatin. Sofia–Moscow: Pensoft Publishers: 357–363.
- Volkovitch M. G., Bellamy C. L. 1992. A new genus of Buprestidae (Coleoptera) from Southern Africa with notes on the taxonomy of African Acmaeoderini. *Coleopt. Bull.* **46**(3): 297–305.
- Volkovitch M. G., Bellamy C. L. 1994. Two new species of *Microacmaeodera* Cobos, 1966 from Thailand (Coleoptera: Buprestidae). *Elytron.* **8**: 63–72.
- Volkovitch M. G., Liberto A. 2002. A new species of *Acmaeodera* Eschscholtz, 1829 from Gran Canaria and Tenerife and notes on *Acmaeodera* (*Acmaeotethya*) *cisti* Wollaston, 1862 (Coleoptera, Buprestidae). *Vieraea.* **30**: 9–17.