ENTOMOLOGICAL REVIEW

A translation of the quarterly journal ENTOMOLOGICHESKOYE OBOZRENIYE, a publication of the USSR Academy of Sciences.

PUBLISHED FOR
THE ENTOMOLOGICAL SOCIETY OF AMERICA
BY

scripta publishing co.

s/p

C.F.W. MUESEBECK, TRANSLATION EDITOR
Smithsonian Institution

Volume 56: United States and Canada $92.00; elsewhere $93.00.

Order from

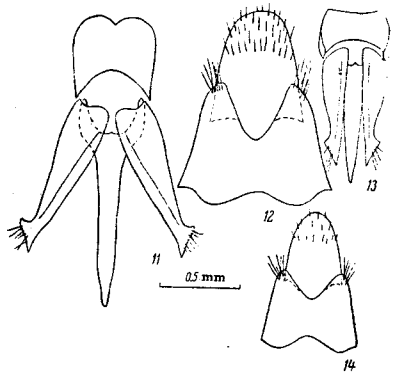
SCRIPTA PUBLISHING CO.
1511 K Street, N.W.
Washington, D.C. 20005

Second-class postage paid at Washington, D.C.

ENTOMOLOGICAL REVIEW

Volume 56, Number 4 October-December 1977

Contents



Figs. 11-14. Ampedus, sp. n. Male genitalia and genital segments.

11-12) A. decumanus, sp. n., 13-14) A. serenus, sp. n. (11, 13-aedeagus, 12, 14-abdominal tergites IX and X).

beyond apices of posterior angles of pronotum by one segment; length of 2nd segment practically 1.5 times its width; 3rd segment practically cylindrical, 1.3-1.4 times length of 2nd; length of 4th segment 1.8 times its apical width, of 5th 1.3 times, of 10th twice. Pronotum noticeably transverse, its greatest width to the rear of the middle, whence its sides narrow barely perceptibly caudad and are strongly rounded in front; median furrow wanting; basal impression appearing as a narrow band opposite the scutellum; punctation fairly large and irregular: punctures umbilicate at anterior margin, larger, interstices smaller than a puncture or equal to it, punctures on posterior declivity smaller, simple, interstices equal to 2-4 punctures, punctures on lateral margin slightly oval, simple in posterior third. Propleura and prothoracic sternite more densely punctate, interstices smaller than a puncture or equal to it. Scutellum with rather prominent longitudinal carina, its length 1.6-1.7 times the basal width. Length of elytra 2.8 times length of pronotum, elytra parallel-sided to the middle; stirae shallow, but distinct, punctures in them deep, round, not exceeding the width of the stria; intervals weakly convex, with large sparse punctures. Genitalia and genital segments as in Figs. 13, 14.

Female. Length reaching 10.5 mm, greatest width 3.2 mm. Antennae extending to apices of posterior angles of pronotum. Pronotum more transverse than in males. Elytra parallel-sided to posterior third.

The species is similar to A. nigroflavus, from which it is well distinguished by the structure of the antennae, the transverse pronotum and the scutellum with its longitudinal carina.

Material. Holotype, ♂: Caucasus, Lagodekhi (L. Mlokosevich). Seventeen paratypes, ♂♂, ♀♀: Caucasus, Lagodekhi (L. Mlokosevich); Lagodekhi, 3 April 1911 (Satunin); Lagodekhi, 1896 (L. Mlokosevich); Caucasus, Lagodekhi, July 1898 (Fomin); Caucasus, 1892 (L. Mlokosevich), coll. G. Sivers; Caucasus, coll. A. P. Semenov-Tyan-Shanskiy.

LITERATURE CITED

DAJOZ, R. 1962. Les espéces françaises du genre Ampedus, morphologie, biologie, systématique (Coleoptera, Elateridae). Rev. franc. Ent. 29 (1): 5-25.

DOLIN, W. G. and GURJEWA (GUR'YEVA), E. L. 1970. Neue Ampedus-Arten (Coleoptera, Elateridae) aus der UdSSR. Koleopterologische Rundschau, 48: 13-25.

GUR'YEVA, Ye. L. 1957. A systematic review of species of the genus Elater L. (Coleoptera, Elateridae) in the Soviet Fauna. Entom. obozr., 36 (2): 451-475.

GUR'YEVA, Ye. L. 1959. A systematic review of species of the genus Elater L. (Coleoptera, Elateridae) in the Soviet fauna. Communication 2. Entom. obozr., 38 (1): 200-215.

GUR'YEVA, Ye. L. 1972. New click beetle species (Coleoptera, Elateridae) in the fauna of the USSR and neighboring countries. Tr. Zool. inst. AN SSSR, 52: 299-308.

GUR'YEVA, Ye. L. 1975. Notes on the systematics and synonymy of click beetles of the genus Ampedus Dej. (Coleoptera, Elateridae). Entom. obozr., 54 (1): 107-110.

LESEIGNEUR, L. 1972. Coléoptères Elateridae de la faune France continentale et de Corse. Bull. Mensuel Soc. Linnéenne de Lyon, 41 Année : 1-379.

REITTER, E. 1887. Ueber Elater-Arten aus der Verwandtschaft des E. ochropterus Eschsch. Wien. Ent. Zeit., 6: 211-213.

REITTER, E. 1889. Übersicht der mir bekannten Elater-Arten der palaearktischen Fauna. Ent. Nachrichten, 15: 100-116.

REITTER, E. 1918. Bestimmungs-Tabelle der paläarktischen Elater-Arten. Wiener Ent. Zeit. 37: 81-105.

SEMENOV-TYAN-SHANSKIY, A. P. 1926. Coleopterological notes. Entom. obozr., 20 (1-2): 33-55.

YABLOKOV-KHNZORYAN, S. M. 1964. New genera and species of Coleoptera from Transcaucasia and Soviet Central Asia. Zool. sb. AN ArmSSR, 13: 151-186.

Zoological Institute, USSR Academy of Sciences, Leningrad

ON THE SYNONYMY OF PALEARCTIC BUPRESTIDS OF THE TRIBE ACMAEODERINI (COLEOPTERA, BUPRESTIDAE)

M. G. VOLKOVICH

Buprestids of the tribe Acmaeoderini remain one of the least investigated groups of the Coleoptera. The number of species described is considerably in excess of the actual number. The majority of the species were described between 1890 and 1946 in the works of Semenov-Tyan-Shanskiy (1895, etc.), Abeille de Perrin (1891, 1893, 1900 etc.), Reitter (1889, 1890, 1904, etc.), Kerremans (1906, etc.), Théry (1928, etc.) and Obenberger (1914, 1923, 1934, 1940, etc.). The Palearctic fauna now comprises more than 200 hundred species. Previous attempts to produce an adequately founded system have proved unsuccessful, with the exception of a work by Cobos (1958), but it deals solely with the Moroccan fauna. Consequently, study of the group has previously been confined primarily to the description of new forms.

The difficulties found in studying members of the tribe Acmaeoderini are connected with the general uniformity of morphological structures in the adult insect and the great variability of their characters. Inadequacies in many descriptions, which are frequently too brief and formal, also complicate the study of the group. Most descriptions are based on the use of variable superficial characters and are not usually accompanied by illustrations. Even in recent works such an important character as the structure of the genitalia is sometimes ignored or, if illustrations are given, attention is centered on the shape of the tegmen rather than on the structures of the penis, which are of the greatest taxonomic value. The inaccuracy of the descriptions and the typological approach to the species problem lead, on the one hand, to repeated redescriptions of individual species and, on the other hand, to the unjustified suppression of the names of independent species as synonyms. Even greater confusion is introduced by descriptions of numerous intraspecific forms.

Arising from a study of individual and geographic variability on extensive material in the collection of the Zoological Institute, USSR Academy of Sciences (ZIN) and a study of type-specimens the author has established the synonymy of many species. It is possible that some of the names reduced to synonyms in the present article may in time be restored for subspecies. It should be noted that many species were described on the basis of very few, often single specimens and that only their types have hitherto been known. The erection of subspecies on the basis of morphological characters in the almost total absence of adequate data on their range and biology is inadvisable in most instances.

The author would like to take the opportunity to thank the following individuals who kindly made material available for study: A. V. Alekseyev (Orekhovo-Zuyevo Pedagogical Institute); S. M. Yablokov-Khnzoryan (Institute of Zoology, Armenian Academy of Sciences, Yerevan); Dr. J. Jelinek, National Museum, Prague - NMP; Sv. Bily (Prague), Dr. Kaszab (Természettudományi Muzeum, Budapest - TIMB), Dr. F. Janczyk (Natural History Museum, Vienna - NMW); Dr. R. Gaedicke (Institut für Pflanzenschutz forschung Kleinmachnow Zweigstelle Eberswalde - IPE), Dr. F. Hieke (Museum für Naturkunde an der Humboldt-Universität zu Berlin - MNB); Dr. G. Scherer (Zoologische Sammlung des Bayerischen Staates, München - ZSBS).

1. Acmaeodera brevipes Kiesw., 1858.

Kiesenwetter, 1858: 242. - abeillei Obenberger, 1914: 251 (nom. praeocc., nec Pic). - abeilleana Obenberger, 1940: 115, syn. n.

Comparison of the paratypes of A. abeilleana and numerous specimens of A. brevipes has shown them to be identical. The paratypes of A. abeilleana (Bily's collection and IPE) are greatly worn and lack hairs. The characters considered by Obenberger (coloration and the size of the epipleural notch*) are quite variable. Algeria is recorded on the labels of the paratypes. A. brevipes occurs widely in the Eastern Mediterranean and is richly represented in many collections, but has not been found in Algeria. We ought evidently to agree with the opinion of Théry (1928: 132), who suggested that a mistake had been made in labelling, because he doubted the occurrence of A. abeilleana in Algeria.

2. Acmaeodera babatauensis Obenb., 1935.

Obenberger, 1935: 207. - gussakovskyi Stepanov, 1958: 114, syn. n. - planidorsis (nec Semenov): Kulinich, 1965: 57, Gur'yeva, 1974: 97.

Described by Obenberger from the Babatag range in Southwestern Tadzhikistan, secondarily described by Stepanov (1958) under the name A. gussakovskyi from the Kondara gorge (Gissar range). When the holotype of A. babatauensis (NMP) was compared with the type-series of A. gussakovskyi (ZIN) they were found to be completely identical. The data of Kulinich (1965: 57) concerning damage to the pistachio in Tadzhikistan by A. planidorsis, which has hitherto been found only in Transcaucasia and Iran, undoubtedly relates to this species.

*A. brevipes belongs to a group of species having straight lateral margins of the elytra, but a distinct inflection above the humeri, which is sometimes fairly strong, is often to be seen in individual specimens.

ISSN0013-8738/77/0400-0067$07.50/0

Abeille de Perrin, 1904: 222. - satanula Reitter, 1907: 205, syn. n.

A western Mediterranean species occurring in the Iberian Peninsula and in Morocco (Cobos, 1958). Described three times from the Iberian Peninsula: initially by Abeille de Perrin (A. nigellata), subsequently by Reitter (A. satanula) and, finally, by Obenberger (A. lusitanica); Obenberger himself suppressed the last name as a synonym of A. nigellata. When we examine the holotype of A. satanula (TMB) and paratypes of A. lusitanica (IPE) we fail to find any differences between them. The holotype of A. satanula is in full accord with the description of A. nigellata.

4. Acmaeodera rubromaculata Luc., 1844.

Lucas, 1844: 88. - oertzeni Ganglbauer, 1889: 55, syn. n. - marania Obenberger, 1940: 138. - - pharisaea Obenberger, 1946: 13, syn. n. - houskai Obenberger, 1946: 14, syn. n.

The views of various authors on the taxonomic status and systematic position of A. oertzeni diverge greatly. Kerremans (1906:329) regards it as an independent species and gives as its synonyms A. semiopaca, A. fusa and A. macchabaea. In his catalog of the Buprestidae Obenberger (1926:66) records the interrelationships between A. oertzeni and the "synonyms" of Kerremans in the following manner:

oertzeni Ganglb. (Algeria, Tunis),
var. semiopaca Ab. (Algeria),
var. fusa Ab. (Asia Minor: "Adalia"),
? subsp. macchabaea Ab. (Crete, Syria).

Théry (1928:91) regards A. oertzeni as a subspecies of A. cisti from the Canaries and notes A. fusa and A. macchabaea as its synonyms, but justifiably regards A. semiopaca as a variety of A. rubromaculata. In indicating the range of A. cisti subsp. oertzeni, Théry refers to Crete (type-locality), and also to "Tebourzouk" and "Cherichera" in Tunisia. However, it may be concluded that this author did not examine type-specimens of A. oertzeni. The colored illustration depicts a species that is very reminiscent of A. cisti, but not of A. oertzeni.

Following examination of type-specimens in the Paris Museum, Obenberger (1934:202) restored the species status of A. oertzeni, commenting that it was similar to A. cisti. He also restored species status to A. fusa, A. semiopaca and A. macchabaea, placing the last two species in the A. rubromaculata group. Obenberger converged A. fusa with A. bijuga Mars. In our opinion, A. bijuga and A. fusa are identical, but the type-specimens must be studied before final conclusions can be drawn. Like Théry, Obenberger noted that the type-specimen of A. oertzeni came from "Tebourzouk", although this species was actually described from the islands of Elassa and Karpathos.

Finally, Cobos (1966:248) compared the species A. eberti Cobos described by him to A. oertzeni, which he placed in the A. degener group that contains A. cisti. In a revision of the Acmaeoderini of Morocco Cobos (1958:249) listed 6 subspecies of A. rubromaculata, including A. rubromaculata subsp. semiopaca and A. rubromaculata subsp. marania. The latter had been described as an independent species from Crete.

A. oertzeni incorrectly, apparently basing their opinions on a specimen incorrectly identified and listed as the type-specimen in the collection of Abeille de Perrin. This is shown by the references of Théry and Obenberger to Abeille de Perrin's collection and by the references to Tunisia as the type-locality (in Obenberger). The correct reference, Crete, was probably given in accordance with Ganglbauer's original description, in which it was stated that the type-specimens of A. oertzeni were collected on the islands of Elassa and Karpathos near Crete.

We studied a syntype of A. oertzeni ("I. Elasu, G. Creta, V. Oertzen, Type, oertzeni Ganglb." - NMW) and one specimen of this species from Crete (MNB), and also holotypes of A. pharisaea and A. houskai (NMP). The specimen from Crete corresponded to the description of A. marania. The syntype of A. oertzeni was scarcely different at all from specimens of A. rubromaculata from North Africa identified by Cobos. Both specimens from the islands of Crete and Elassa belong to the one form A. rubromaculata. The slight differences in sculpture and coloration are no grounds for regarding A. oertzeni as an independent species.

Obenberger described the male of A. rubromaculata under the name A. pharisaea, and a large female of the same form under the name A. houskai. It is significant that Obenberger made no reference to the similarity of these "species" to A. rubromaculata, but compared them to A. bipunctata and A. guillebeaui, from which they are in fact well distinguished. One feature of this form is the presence of longitudinal rugosity on the upper part of the frons, formed by the longitudinal merging of the interstices between punctures.

It is quite probable that the first form of A. rubromaculata (= oertzeni) forms a distinct subspecies on Crete and on the adjacent islands, while the second (= pharisaea) does so in the Near East. However, no large volume of material has as yet been examined from these localities and it is premature to distinguish subspecies.

5. Acmaeodera kachetica Sem., 1895.

Semenov, 1895: 325. - mesmini Obenberger, 1934: 201, syn. n.

We examined the holotype of A. mesmini (NMP) and the lectotype and paralectotype of A. kachetica (ZIN). There can be no doubt that they are identical.

6. Acmaeoderella discoidea (F., 1787).

Fabricius, 1787: 184 (Buprestis). - discoidea subsp. ferghanensis Obenberger, 1934: 245 (Acmaeodera).

Cobos (1958:254) gives the name "ferghanensis" in a list of synonyms of A. discoidea. The holotype (NMP) of this subspecies, labelled "Ferghana", does not differ from dark specimens of A. discoidea from North Africa (ZIN). This species, which occurs in the western and central Mediterranean, can scarcely have been collected in the Fergana valley. It may be assumed that the specimen was incorrectly labelled.

Reitter, 1890: 340 (Acmaeodera caspica var. turanica). - sogdiana-Semenov, 1895:264 (Acmaeodera), syn. n.

Reitter regarded A. turanica as a variety of A. caspica. Obenberger (1934:243, 247) treated A. turanica as an independent species. However, examination of the specimens identified by Obenberger has shown that he used this name for A. caspica subsp. suturifera (see below). From a study of the holotype of A. turanica (TMB) it has been possible to establish that this form is an independent species identical to A. sogdiana (ZIN). The latter is a darker variety of A. turanica. The series of A. turanica from the Badkhyz (ZIN) includes forms that are transitional in coloration.

8. Acmaeoderella caspica (Ganglb., 1888).

Ganglbauer, 1888: 195 (Acmaeodera). - suturifera Reitter, 1904:256 (Acmaeodera), subsp., status n. - turanica (nec Reitter): Obenberger, 1934:246 (Acmaeodera). - turkestanica Obenberger, 1934:249 (Acmaeodera), syn. n.

We compared syntypes of A. caspica (ZIN), A. turkestanica (NMP) and A. suturifera (TMB). The last-mentioned differs from typical A. caspica in the copper color of the body, the predominant yellow color of the elytra and the far larger and broader scales. However, A. caspica and A. suturifera have genitalia of identical structure, similar reflief of the pronotum and similar arrangement of the modified scales on the first 2 visible abdominal sternites of the female. The differences may be explained by the fact that A. suturifera lives under more arid conditions than A. caspica. A. turkestanica differs slightly in the sculpture of the surface of the elytra and in the density of the scale cover, but these characters are broadly variable.

9. Acmaeoderella fulvinaeva (Reitt., 1890).

Reitter, 1890: 345 (Acmaeodera) - iphigenia Obenberger, 1934: 250 (Acmaeodera), syn. n.

This species has been described twice from the Araks valley, and one of the authentic specimens of A. iphigenia is apparently a syntype of A. fulvinaeva. The holotype of A. iphigenia (NMP) is a female, not a male, as noted in the description; this explains the differences in the width of the frons and the size of the distal segments of the antennae. The shape of the scales is not sufficient grounds for erecting a separate species. The holotype and paratypes of A. fulvinaeva are in Budapest (TMB).

10. Acmaeoderella elegans (Harold, 1869).

Harold, 1869:124 (Acmaeodera). - ornata Wollaston, 1864:207 (nom. praeocc., nec Fabricius). - eucera Obenberger, 1946:14 (Acmaeodera), syn. n.

A. elegans was described from the Canaries. Théry (1958:114) described A. simillima Théry from North Africa (Tunisia); it is treated by Cobos (1958: 246) as a subspecies of A. elegans. Finally, Obenberger described A. eucera from the Near East. We compared the holotype of A. eucera (NMP) and several specimens (Bily's collection) with specimens of the sculpture of the head and pronotum, which consists of very abundant and coarse punctures, but this character is appreciably variable in many species. All the specimens listed are similar in the structure of the claws and antennae, the structure of the male genitalia, the sculpture of the elytra and the pubescence. A. eucera, which we regard as a Near Eastern form of A. elegans, is characterized by the predominantly yellow color of the elytra.

11. Acmaeoderella glasunovi (Sem., 1895).

Semenov, 1895: 265 (Acmaeodera). - judinae Stepanov, 1954:1307 (Acmaeodera), syn. n. - varsobica (Stepanov, 1958: 112 (Acmaeodera), syn. n.

Study of the type-specimens of A. glasunovi, A. judinae and A. varsobica (ZIN) has shown that they all belong to the same species. A. glasunovi is quite common in Southern Uzbekistan and in Tadzhikistan, and it has been recorded as a pest of many trees and shrubs (Gur'yeva, 1974 : 97). Stepanov distinguished a lighter form of this species found in the western part of the range, in the Badkhyz*, where it damages pistachio, under the name A. judinae Stepanov (Gur'yeva, 1974 : 97). A. varsobica was described on the basis of a single large female from a large series of typical A. glasunovi collected by V. V. Gussakovskiy in the Kondara gorge (Gissar range). This female is distinguished solely by the reduced markings of the elytra. Similar specimens, usually females, are sometimes found in series from other places in Tadzhikistan.

12. Acmaeoderella adspersula arabica Cobos, 1963.

Cobos, 1963 : 360. - sheherzad Pochon, 1971 : 241 (Acmaeodera), syn. n.

A. sheherzad and A. adspersula arabica are a single form of the well-known Mediterranean species A. adspersula. Both holotypes come from the same locality and were collected by Diehl (Er Riad, E. Giehl lgt.), but Pochon does not give the date of collection (A. adspersula arabica - 7 May 1959). We examined the holotype of A. adspersula arabica (ZSBS) and the paratype of A. sheherzad (NMP) from Iran. The paratype is a female differing slightly in size, coloration and the shape of the scales both from the description of A. sheherzad and from the holotype of A. adspersula arabica (male).

13. Acmaeoderella longissima Ab., 1904.

Abeille de Perrin, 1904 : 218 (Acmaeodera). - fatima Pochon, 1971 : 242 (Acmaeodera), syn. n.

Abeille de Perrin was evidently guilty of inaccuracy in his description. He states that the ratio of the length of the prothorax to that of the elytra is 1:5 for A. longissima and also for a number of species known

*Obenberger (1935 : 106) described A. christophi Obenb. from the Krasnovodsk region; it is possibly an isolated subspecies of A. glasunovi. Examination of syntypes of A. christophi (NMP) did not enable us to arrive at final conclusions on the status of this form.

to us, whereas in reality this ratio is invariably far less. In the paratypes investigated by us (NMP) and specimens of A. fatima (Bily's collection) this ratio appears very large, but measurement with an eyepiece micrometer shows that it does not exceed 1:3.32 and that it increases as body length increases. As regards all other characters A. fatima corresponds to the description of A. longissima.

14. Acmaeoderella albifrons (Ab., 1891).

Abeille de Perrin, 1891:278 (Acmaeodera). - repetekensis var. troniceki Obenberger, 1935:105 (Acmaeodera), syn. n.

According to the brief description by Abeille de Perrin, A. albifrons comes from the Caucasus, but Obenberger (1934:237), who had a paratype and who investigated the holotype of this species in Paris, gives Syria as the type-locality. Some investigators (Kerremans, 1906:351; Théry, 1928:106; Cobos, 1958:257) regard A. albifrons either as a synonym or as a subspecies of A. flavofasciata (Piller). However, it follows even from the description by Abeille de Perrin that A. albifrons differs greatly from A. flavofasciata.

We examined holotypes of A. repetekensis (see below) and, A. repetekensis var. troniceki and the paratype of A. albifrons (NMP). Most specimens of A. repetekensis var. troniceki (especially the series from Zhulek, Kzyl-Orda Province) correspond in the main to the paratype of A. albifrons from Syria. Owing to the lack of sufficient material we refrain at present from treating this form as a separate subspecies.

15. Acmaeoderella repetekensis (Obenb., 1934).

Obenberger, 1934:234 (Acmaeodera glasunovi var. repetekensis). - repetekensis Obenb., 1935:105 (Acmaeodera). - solskyi (nec Obenberger): Kostin, 1973: 64 (Acmaeodera).

Despite considerable external similarity to A. albifrons, A. repetekensis should apparently be regarded as an independent species. It is associated with the sandy deserts of Soviet Central Asia and most of the characters by which A. repetekensis differs from A. albifrons are probably of an adaptive nature (coloration, elytral markings, size and frequency of scales, presence of abbreviated setae on the periphery of the soles of the tarsi, shape of the claw). Differences in the structure of the male and female genitalia are very slight. The only reliable character at present is the shape of the anterior outer angle of the elytra, which corresponds to the lateral inflection of the prothorax (in A. albifrons this angle is a right angle or slightly acute, while in A. repetekensis it is acute). In collections from Kzyl-Orda (formerly Perovsk, June 12, 1917, collector unknown) there are two clearly distinguishable forms. The lack of material to prove the existence of intermediate forms leads us to regard A. repetekensis as an independent species.

A. solskyi Kostin (nec Obenberger) also belongs to A. repetekensis. The mistake apparently arose owing to incorrect identification. A. solskyi (holotype NMP) belongs to the group of species including A. xerxes, A. nivifera, A. richteri Volkovitsh etc.

16. Acmaeoderella vetusta (Mén., 1832).

Ménétriés, 1832:152 (Buprestis). - cuprifera Castelnau et Gory, 1835:25, t. 7, f. 42 (Acmaeodera), syn. n.

Kerremans (1906:351) and Théry (1928:106) unjustifiably listed A. vetusta among the synonyms of A. flavofasciata. Obenberger (1934:268), who noted the mistake, nevertheless was unable to state the position of this species correctly. Investigation of the type-specimen (? holotype) of A. vetusta in the ZIN collections has shown that we are here concerned with the well-known species A. cuprifera. Consequently, A. vetusta is a senior synonym of the same A. cuprifera.

17. Acmaeoderella obscura (Reitt., 1889).

Reitter, 1889:281 (Acmaeodera boryi var. obscura). - obscura Reitter, 1890:344. - cyaniventris Reitter, 1890:344 (Acmaeodera), syn. n. - kalalae Obenberger, 1935:108 (Acmaeodera), syn. n. - nigroopaca Cobos, 1963:357, syn. n.

Reitter erected A. cyaniventris on the basis of characters of coloration, the sculpture of the prothorax and the elytra (in A. obscura the body, except for the undersurface, is black, and the surface is strongly granulated and matte; in A. cyaniventris the body is blue and the surface is shiny and not granulated). Obenberger (1934:283-284) placed them in different parts of the key on the basis of a difference in the structure of the antennae (the segments are dilated from the 5th onward in A. obscura and from the 4th segment inclusive in A. cyaniventris). Finally, Obenberger described A. kalalae from Iraq, while Cobos described A. nigroopaca from Saudi Arabia (Er Riad).

Comparison of holotypes (TMB) and of series from Transcaucasia (Karabakhlar, 16-26 June 1959, G. Viktorov; 10 June 1960, A. Antonova - Zoological Museum, Moscow University) has shown that in reality A. obscura and A. cyaniventris are varieties of the one, highly variable species. There are "typical" A. obscura and A. cyaniventris and transitional forms. An investigation of other characters, including the structure of the genitalia, did not reveal any differences. As regards the structure of the antennae, they are dilated in all specimens, including the type-specimens, from the 4th segment onward. To judge by the label on one of the syntypes of A. kalalae (NMP), when Obenberger compared type-specimens of A. kalalae and A. obscura he recognized that they were identical, but he did not publish this information.

A. nigroopaca, which is distinguished by slightly more dilated scales on the undersurface (holotype - ZSBS), belongs to the same species.

18. Acmaeoderella subcyanea (Reitt., 1890).

Reitter, 1890:344 (Acmaeodera). - jakowlewi Semenov (part.), 1895:243 (Acmaeodera), syn. n. - cyrta Yablokov-Khnzoryan, 1966:309 (Acmaeodera), syn. n.

Two different species were described under the name A. jakowlewi Semenov (Semenov, 1895). One of the paralectotypes (ZIN) is a female of A. subcyanea; the other type-specimens are A. boryi (see below).

A. cyrta (holotype in the collection of S. M. Yablokov-Khnzoryan) is a bronze aberration of A. subcyanea (holotype TMB, paratypes ZIN, TMB, MNB). The numerous specimens collected by the author around Dzhul'fa (Nakhichevan ASSR) include bronze, blue and black individuals. Such variability is, in general, a feature of the A. boryi group. No other significant differences were found.

19. Acmaeoderella boryi (Brullé, 1832).

Brullé, 1832:134 (Buprestis). - jakowlewi Semenov (part.), 1895:243 (Acmaeodera), syn. n. - antitauri Obenberger, 1934:285 (Acmaeodera), syn. n.

It has already been noted above that two species were combined under the name A. jakowlewi (Semenov, 1895). One specimen, labelled "Ture" and designated by us as the lectotype and 3 specimens not designated as type-specimens, but belonging to the type-series according to the description (paralectotypes), correspond to A. boryi.

In the opinion of Semenov (1895) and Obenberger (1934:283) the main difference between A. jakowlewi and A. boryi is an antennal structure: the 4th segment of A. jakowlewi is triangular, whereas in A. boryi it is oblong and similar to the 3rd segment. However, this character is extremely unreliable, since the 4th segment is quite variable in shape and there are transitional forms. These forms do not differ in the structure of the genitalia and in other characters.

A. antitauri is compared by Obenberger (1934: 281) with A. adamantina, A. canescens and similar species, which lack a transverse band of small abundant punctures on the pronotum. It is distinguished from these species by the strongly developed antennae with markedly dilated segments. At the same time, specimens of A. boryi are found in which the punctate band is not expressed and which correspondingly lack a transverse crest of dense scales. A. antitauri is extremely similar in the structure of the antennae and other characters to A. boryi and should be combined with it.

20. Acmaeoderella canescens (Sem., 1895).

Semenov, 1895:260 (Acmaeodera). - tamerlani Obenberger, 1934:112 (Acmaeodera), syn. n.

A. tamerlani is similar not to A. syrdarjensis, as stated in the original description, but to A. canescens, from which it does not differ at all. The holotype (NMP) was taken from a series of specimens (ZIN) identified by Obenberger as A. canescens, but subsequently described under the name A. tamerlani. Study of the syntypes and of a large number of specimens of A. canescens (ZIN) has shown that the sculpture of the head and the pronotum, which consists of simple punctures is highly variable.

21. Acmaeoderella gibbulosa (Mén., 1832).

Ménétriés, 1832:153 (Buprestis). - lugens Gory, 1840:45 (Acmaeodera), syn. n. - cuprinula Reitter (part.), 1890:341 (Acmaeodera), syn. n. - tenuifrons Obenberger, 1924:12 (Acmaeodera), syn. n. - araxigena Obenberger, 1940:141 (Acmaeodera), syn. n. - pseudocuprinula Obenberger, 1940:142 (Acmaeodera), syn. n.

The type-specimen of A. gibbulosa (ZIN) was compared with specimens of A. lugens, with syntypes of A. lugens subsp. libanonica (ZIN, IPE), with authentic specimens of A. cuprinula (ZIN, NMW, TMB) and with holotypes of A. tenuifrons, A. araxigena and A. pseudocuprinula (NMP).

Owing to the brevity and the inaccuracy of the description by Ménétriés, A. gibbulosa for long remained unknown to most investigators and was repeatedly redescribed under various names. Although Abeille de Perrin (1893:133) had already placed the name A. lugens among the synonyms of A. gibbulosa in a description of the Algerian A. vaulogeri, all subsequent investigators continued to regard A. lugens as an independent species. Obenberger (1934:269) even placed A. gibbulosa in the A. circassica group, not suspecting that it was identical to A. lugens.

Although we have not succeeded in studying type-specimens of A. cuprinula, an investigation of authentic specimens has shown that Reitter combined two different species under this name, A. gibbulosa and A. dubia. This gave rise to a discrepancy in the identification of this species.

As regards A. tenuifrons, A. araxigena and A. pseudocuprinula, all of them were described by Obenberger on the basis of highly variable superficial characters, and, moreover, characters subject to sexual dimorphism. In our view, all of them are merely forms of A. gibbulosa.

22. Acmaeoderella dubia (Ball., 1870).

Ballion, 1870:350. - ballioni (ballionis) Ganglbauer, 1888:196 (Acmaeodera), syn. n. - cuprinula Reitter (part.), 1890:341 (Acmaeodera), syn. n. - krali Obenberger, 1923:26 (Acmaeodera), syn. n. - pamirigena Obenberger, 1940:141 (Acmaeodera), syn. n. -chalcopracta Obenberger, 1940:142 (Acmaeodera), syn. n. - chloe Obenberger, 1940:143 (Acmaeodera), syn. n.

Various investigators have defined a number of similar, but well distinguishable species under the name A. ballioni. The type-specimens and authentic specimens of this species are not known to us*, although the original description and, in particular, the comment that the species may possibly be identical to A. dubia enable us to suggest that both names belong to the same species.

We compared an authentic specimen of A. dubia (ZIN) with syntypes of A. krali and holotypes of A. chalcopracta, A. chloe and A. pamirigena (NMP). The last mentioned is slightly different from A. dubia in the shape of the head, but corresponds to it completely with respect to all other characters. A. krali, A. chalcopracta and A. chloe, which differ only in the sculpture of the surface and the arrangement of the scales, undoubtedly belong to the same species, which has quite variable sculpture, which is a general feature of this group. It is appropriate to point out that when treating these species Obenberger on no occasion compares them with each other.

*A specimen of A. ballioni Ganglb. (NMW) obtained by us and marked as a type specimen, is not in fact a type. A. ballioni was described on the basis of König's collections and must be labelled "Trans. Caspi, Turcmenien, E. König". The label of the specimen from the NMW reads "Ferganah, Margelan, collect. Hauser".

23. Acmaeoderella staudingeri (Ab., 1900).

Abeille de Perrin, 1900:10 (Acmaeodera). - ganglbaueri Obenberger, 1940:140 (Acmaeodera), syn. n.

A. staudingeri is common in the mountains of Uzbekistan, Tadzhikistan and Kirgizia. The topotypes ("M. Alexandre" - Kirgiz range - ZIN) correspond fully to the original description and to syntypes of A. ganglbaueri (NMP). These species are not compared by Obenberger. Very great variability of sculpture is to be seen in large series of A. staudingeri. It is because of this that A. staudingeri may often be confused with A. dubia, with which it is sometimes found. However, these two species are well discriminated by genital structure.

SUMMARY

From an investigation of type-specimens and an analysis of the variability of Palearctic buprestids of the tribe Acmaeoderini 34 species names are reduced to synonyms. Acmaeoderella repetekensis is an independent species, but the variety A. repetekensis var. troniceki should be placed in the species A. albifrons. It has been established that Acmaeoderella suturifera is a subspecies, a geographic race of A. caspica. The name Acmaeoderella jakowlewi belongs to the species A. boryi and A. subcyanea, while the name Acmaeoderella cuprinula belongs to the species A. gibbulosa and A. dubia. It is noted that, owing to mistaken identification, incorrect use has been made of the names of some species in the literature.

LITERATURE CITED

ABEILLE DE PERRIN, E. 1891. Contributions aux Buprestides paléarctiques. Rev. d'Ent., 10: 257-288.

ABEILLE DE PERRIN, E. 1893. Nouveau supplement aux Buprestides d'Europe et circa. Rev. Ent. Franc., 12: 127-141.

ABEILLE DE PERRIN, E. 1900. Diagnoses de Coléoptères présumés nouveaux. Bull. Acad. Marseille: 1-23.

ABEILLE DE PERRIN, E. 1904. Buprestides. Bol. R. Soc. Esp. Hist. Nat., 4: 206-224.

BALLION, E.E. 1870. Eine Centurie neuer Käfer aus der Fauna des russischen Reiches. Bull. Soc. Nat. Moscou, 43: 320-353.

BRULLÉ, A. 1832. Insectes. Expedition scientifique de Morée, 3 (1-2): 64-395.

CASTELNAU, F.-L. (LAPORTE DE CASTELNAU) AND GORY, H. 1835-1841. Histoire naturelle et iconographie des insectes Coléoptères, publée par Monographies separées, 1.

COBOS, A. 1958. Revisión de los Acmaeoderini de Marruecos (Col. Buprestidae). Eos, 34: 221-268.

COBOS, A. 1963. Cuatro Buprestidos neuvos de Oriente Medio (Coleoptera). Eos, 39: 357-365.

COBOS, A. 1966. Los Buprestidos de la mision cientifica Nepal Himalaya. Ergebn. Forsch. Unternehmens Nepal Himalaya, 1 (4): 247-250.

FABRICIUS, J. Chr. 1787. Mantissa Insectorum, sistens eorum species nuper detectas, adjectis characteribus genericis, differentiis specificis, emendationibus, observationibus. Hafn:, 1. 1-348.

GANGLBAUER, L. 1888. Von Herrn E. König in Turcmenien gesammelte Buprestiden und Cerambyciden. Horae Soc. Ent. Ross., 22: 192-198.

GANGLBAUER, L. 1889. Berichte über die von E. v. Oertzen im jahre 1887 in Griechenland u. Klein-Asien gesammelten Coleopteren. 5. Deut. Ent. Zeit., 1: 49-57.

GORY, H. 1835-1841. Histoire naturelle et iconographie des insectes Coléoptères. Supplément aux Buprestides, 4: 1-356.

GUR'YEVA (GURJEVA), Ye.L. 1974. Fam. Buprestidae. In: Insects and acarines that are crop pests. Communication 2. Coleoptera. Leningrad: 96-112.

HAROLD, E. von. 1869. Berichtigungen und Zusätze zum Catalogus Coleopterorum synonymicus et systematicus. Coleopt., 5: 122-125.

KERREMANS, Ch. 1906. Monographie des Buprestides. 2. Londres - Bruxelles - Berlin: 1-623.

KIESENWETTER, E.A.H. von. 1858. Beiträge zur Käferfauna Griechenlands. Stück 4 (Parnidae, Heteroceridae, Lamellicornia, Buprestidae). Berl. Ent. Zeit., 2: 231-249.

KOSTIN, I.A. 1973. Dendrophagous beetles of Kazakhstan (Scolytidae, Cerambycidae, Buprestidae). Alma-Ata: 1-288.

KULINICH, P.N. 1965. Beetles that damage fruit and nut crops on the southern slope of the Gissar range. Dushanbe: 1-171.

LUCAS, H. 1844. Nouvelles espéces de Buprestides du nord de l'Afrique. Rev. Zool. 7: 49-51, 87-90, 134-135, 206-208, 239-240.

MÉNÉTRIÉS, Ed. 1832. Catalogue raisonné des objets de Zoologie recueillis dans un voyage au Caucase et jusqu'aux frontieres actuelles de la Perse. St. Pétersb.: 1-271.

OBENBERGER, J. 1914. Neue Acmaeoderen (Coleoptera - Buprestidae) Ent. Blatt., 10: 250-254.

OBENBERGER, J. 1923. De novis Buprestidarum regionis Palaearcticae speciebus. 3. Acta Soc. Ent., Čsl., 20: 15-29.

OBENBERGER, J. 1924. Symbolae ad specierum regionis palaearcticae Buprestidarum cognitionem. Českoslov. Ent. Spol. Jubil. Sborn.: 6-59.

OBENBERGER, J. 1926. In W. Junk et S. Schenkling. Coleopterorum Catalogus, Pars 84. Buprestidae 1. Berlin: 1-212.

OBENBERGER, J. 1934. Studien über die palaearktischen Buprestiden. I. Folia zool. hydrobiol., 5: 158-290.

OBENBERGER, J. 1935. De generis Acmaeodera speciebus novis (Col. Bupr.). Acta Soc. Ent. Čsl., 32: 105-108.

OBENBERGER, J. 1940. Ad regionis palaearcticae Buprestidarum cognitionem additamenta. Sborn. narod. Mus. Prase. 2B, 6, Zool. 3: 111-189.

OBENBERGER, J. 1946. Insecta houškeana: Buprestidae (Col.). Acta Ent. Mus. nat. Pragae, 24: 5-38.

POCHON, H. 1971. Beschreibung einiger für die Wissenschaft neuer Buprestiden (Coleoptera). Ent. Arb. Mus. Frey: 240-249.

REITTER, E. 1889. Neue Coleopteren aus Europa, den angrenzenden Ländern und Sibirien, mit Bemerkungen über bekannte Arten. Deut. Ent. Zeit.: 273-288.

REITTER, E. 1890. Uebersicht der mir bekannten Arten der Coleopteren Gattung Acmaeodera Eschsch. aus Europa und den angrenzenden Ländern. Ent. Nachr., 16: 335-347.

REITTER, E. 1904. Sechs neue Coleopteren aus der palaearktischen Region. Wien Ent. Zeit., 23: 255-258.

REITTER, E. 1907. Eine neue spanische Acmaeodera. Bol. R. Soc. Esp. Hist. Nat. 7: 205.

SEMENOV, A.P. 1895. Coleoptera asiatica nova. 5. Horae Soc. Ent. Ross., 29: 251-270.

SEMENOV, A.P. 1895. Coleoptera nova Rossiae europaeae Caucasique. Horae Soc. Ent. Ross., 29 (1): 242-250, (2): 303-327.

STEPANOV, V.N. 1954. Species of Buprestidae (Coleoptera) new to the Soviet fauna on Pistachia vera L. from Turkmenia. Zool. zhurn., 33 (6): 1307-1311.

STEPANOV, V.N. 1958. Materials for the fauna of the Buprestidae (Coleoptera of Tadzhikistan and neighboring regions of Soviet Central Asia. Communication 1. Tr. AN Tadzh. SSR, 89: 111-121.

THÉRY, A. 1928. Etudes sur les Buprestides de l'Afrique du Nord, Mém. Soc. Sci. Nat. Maroc, 19: 1-586.

WOLLASTON, T.V. 1864. Catalogue of the coleopterous insects of the Canaries in the collection of the British Museum, London, 13: 1-648.

YABLOKOV-KHNZORYAN, S.M. 1966. Two new species of the Coleoptera (Insecta) from the Armenian SSR. Doklady AN ArmSSR, 42 (5): 309-314.

Zoological Institute, USSR Academy of Sciences, Leningrad