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**A CATALOGUE OF SCORPIONS (*CHELICERATA: SCORPIONES*)  
OF THE USSR**

**PREFACE**

The fauna of scorpions of the USSR (i.e. mainly Soviet Caucasus and Central Asia) was partly described by A. A. Birula (1911b, 1917a, 1917b). Since that time numerous collections were made in leading Soviet museums, and now it became possible to give a complete survey of scorpion fauna and its distribution within the USSR.

Sorrowfully, the general work of A. A. Birula (1917b) was not finished, and a lot of data concerning Central Asian scorpions was never published. Some zoologists paid their attention to scorpions in 1930-1940s (Pavlovsky 1934; Richter 1945; Tertyshnikov 1949). These studies were continued in 1970-1980s by O. V. Malinina (Kashnikova), E. B. Yusubov and V. Fet. As a source of my work, collections of the most great zoological institutions in the USSR were examined: Zoological Institute of Academy of Sciences of the USSR (Leningrad), and Zoological Museum of Moscow State University (further, correspondingly: ZIN and ZM). Also a few data were found in the State Museum of Georgia (former Caucasian Museum); its great scorpion collections described by Birula (1912), now are almost lost; and in Zoological Museum of Warsaw, Poland.

The Catalogue includes all localities of all species and subspecies of scorpions from the modern territory of the USSR. According the Article 45e (Addition) of ICZN, all forms and varieties described before 1931 are considered subspecies (if following revisions did not change their status). Synonymy and bibliography were made as complete as possible, excluding however works on toxicology, anatomy, histology and physiology of scorpions, as well as popular works without mention of Latin names of species.

This Catalogue includes all information on 14 species belonging to 11 genera and 3 families. For *Calchas nordmanni* Bir., its record in the USSR is not supported by collections and is based on an uncertain mention by Richter (1945), but this species probably inhabits Soviet Adzharia (Khelvachursky District). All its localities that were registered from Russian Transcaucasia, are since 1918 within Turkish territory.

It must be noted that in southern parts of the USSR the other species,

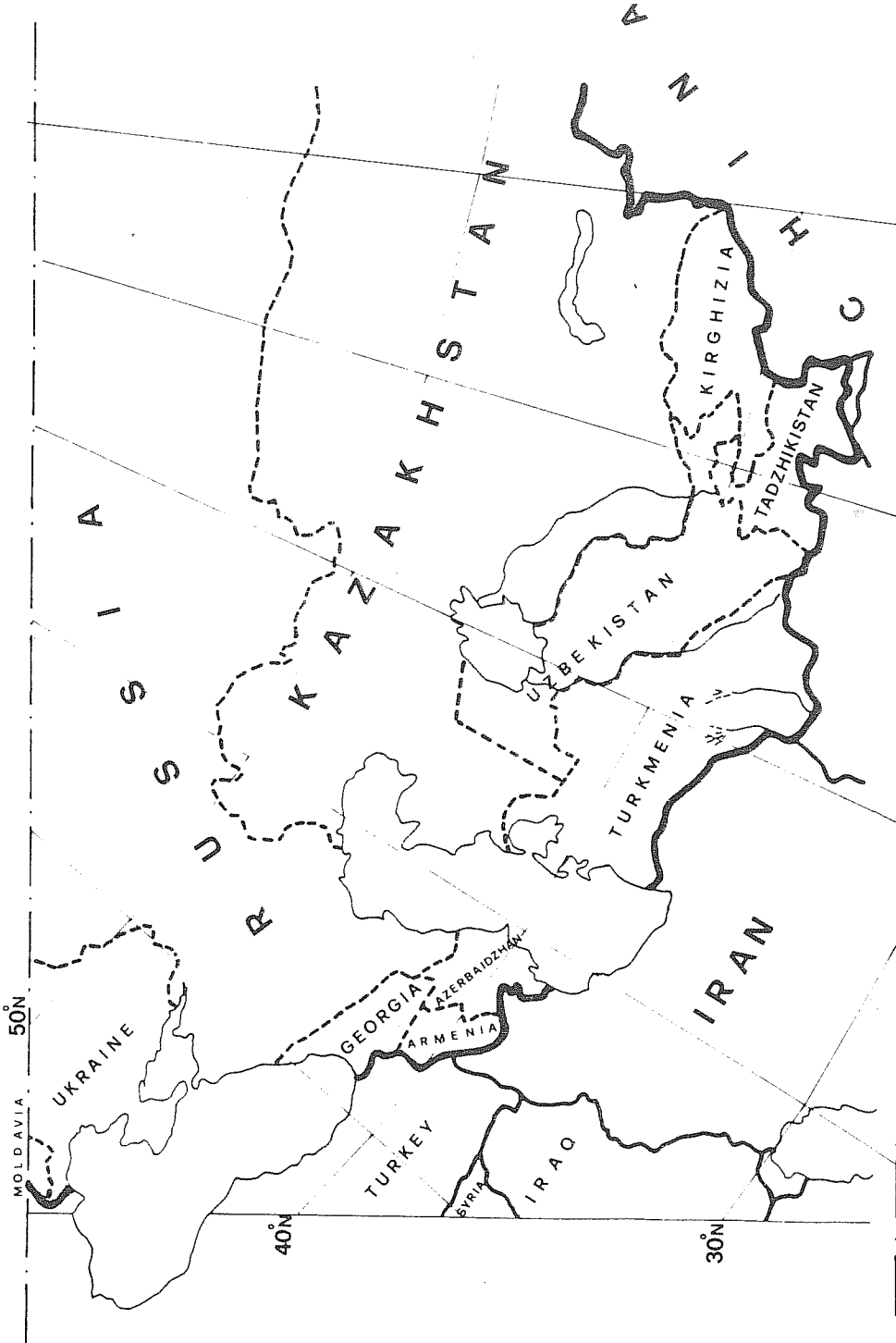
genera and even families of scorpions can be found, which inhabit adjacent regions of Turkey, Iran, Afghanistan and China. New species and genera of *Buthidae* still can be discovered in sandy deserts of Central Asia (Fet 1987a).

There are some dubious data from the territory of the USSR that must be discussed here. Gldenstaedt (1834) cited a binomen *Scorpio terrestris* from Georgia, but insofar that it can be a synonyme of any scorpion inhabiting Georgia, it must be considered as *nomen nudum* (see: Birula 1917b: III). C. Koch (1841: 89, fig. 658) mentioned *Broteas angustus* Perty (from "K. Samml. in Mnchen") from "Southern Russia", but this specimen was examined by K. Kraepelin (1899: 196) and it appeared *Bothriurus vittatus* (Gur.) from South America; so Koch's label was evidently wrong. Bogdanovich (1888) mentioned "*Scorpio europaeus* Latr." from Poti (Georgia); it can be *Euscorpius italicus* (Herbst) as well as *E. mingrelicus* (Kessl.) both inhabiting environs of Poti.

In ZIN collection I had found a species inhabiting Middle East, *Androctonus amoreuxi* (Aud.) with an uncertain label "Steinberg, 1954, Turkmenia"; but this label is probably wrong because detailed published routes of the known entomologist D. M. Steinberg passed in Turkmenia in 1951-1953; and in 1954 he collected in Iran (Kerman), where this specimen (ZIN-1860) was evidently found. At last, N. Shcherbak and M. Golubev (1986: 159) indicate scorpion family *Scorpionidae* as a prey of lizards in Southern Turkmenia; it is evidently lapsus calami and must be read *Buthidae*.

All data about distribution of scorpions in the USSR are given according modern administrative division to republics (SSR), autonomous republics (ASSR), autonomous regions (AO), regions ("oblast" or "krai") and, if necessary, districts ("raion"). All "old" geographical names are given whenever possible according to the modern maps, with the old name (or names) in brackets. All dates from labels before 1918 are given in an "Old Style" used in Russia. Dubious localities are designated "loc. dub.". Names of following collectors are abbreviated to initial letters: Yu. B. = Yu. S. Balashov; L. B. = L. A. Barshchevsky; N. B. = N. A. Bogoyavlensky; V. F. = V. Ya. Fet; E. K. = E. S. Kiryanova; K. M. = K. G. Mikhailov; K. S. = K. A. Satunin; S. S. = S. I. Sukh; V. S. = V. I. Sytchevskaya (Pereleshina); V. Sh. = V. N. Shnitnikov; N. V. = N. F. Vasilyev; A. Z. = A. A. Zavatsky, and N. Z. = N. A. Zarudnyi.

The author is sincerely grateful to all persons who collected scorpions for ZIN and ZM collections in different times. I am deeply obliged for their help during my work in these museums to Prof. Yu. S. Balashov and Dr. V. I. Ovcharenko (Leningrad, ZIN) and to Dr. M. V. Heptner and Mr. K. G. Mikhailov (Moscow, ZM) and also to all my colleagues who kindly sent important literature, information and loaned some collections: Dr. B. Scherabon (Graz, Austria), Dr. K. Thaler (Innsbruck, Austria), Dr. Kh. Delchev (Sofia, Bulgaria), Dr. G. Levy (Jerusalem, Israel), Dr. A. Bonacina (Bergamo, Italy), Prof. M. Vachon (Paris, France), Prof. R. Kinzelbach (Darmstadt, West Germany), Mr. M. E. Braunwalder



Administrative division of the USSR (republics)



(Zurich, Switzerland), Prof. B. Curcic (Beograd, Yugoslavia), Prof. J. Proszynski and Dr. W. Starega (Siedlce, Poland).

### I. Family *BUTHIDAE* Simon 1879 (1837)

#### Synonymy

*Buthidae* Simon 1879: 92; Pocock 1890: 114; 1839: 311; Kraepelin 1899: 6 (= *Androctonidae*); Pocock 1900: 12; Birula 1917a: 18, 1917b: 54; Werner 1934: 265; Comstock 1940: 25; Kästner 1940: 230; Mello-Leitao 1945: 239; Millot and Vachon 1949: 427; Vachon 1952: 78; Stahnke 1972: 121; Pérez 1974: 8; Francke 1985: 15.

*Androctonides* C. Koch 1837: 38

*Androctonoidea* Thorell 1876: 6.

*Androctonidae* Thorell 1877: 82; Kraepelin 1894: 5; 1895: 76; Lonnberg 1897: 183;

*Buthini* Laurie 1886: 131 (pro subfam.)

Notes: 1. The original name *Androctonidae* (sub *Androctonides*) (C. L. Koch 1837) was replaced when *Androctonus* *H. et E.* became a synonyme of *Buthus* Leach 1815. Now the genus *Androctonus* *H. et E.* is re-established (see further) but according to the ICZN, restoration of familial name is undesirable because the name *Buthidae* became very common and stabile.

2. *Buthidae* is not well divided to subfamilies, at least all buthids inhabiting the Old World (Birula 1917a: 18).

### 1. Genus *ANDROCTONUS* Hemprich et Ehrenberg 1882

#### Synonymy

*Androctonus* Hemprich et Ehrenberg 1829a: 117/in part; type species *Scorpio australis* Linnaeus 1758, by following designation, as *Prionurus funestus* (Ehr.) (Lankester 1885: 380)/, 1829b: 353; C. Koch 1841: 41; Lucas 1846: 271; Kessler 1874: 14 (in part.); Thorell 1877: 82; Kraepelin 1891: 156, 1895: 76; Vachon 1948a: 207 (= *Prionurus*, nom. praeocc.), 1948b: 288, fig. 148-159; Millot and Vachon 1949: 427; Vachon 1952: 117, 1958b: 123, 1966: 209; Stahnke 1972: 132, fig. 17; Pérez 1974: 17; Vachon 1974: 906; Lamoral and Reynders 1975: 495; Levy and Amitai 1980: 21; Tikader and Bastawade 1983: 242; Francke 1985: 4 (= *Puchale*). *Buthus* (*Androctonus*) -. Thorell 1876: 7 (in part.); Kraepelin 1899: 9, 1901: 265.

*Androctonus* (*Prionurus*) Hemprich et Ehrenberg 1829a: 120, /nomen praeocc. pro *Prionurus* Lacépède 1804, Pisces (changed to *Acanthocaulus* Waite 1900: 206) and pro *Prionurus* Rafinesque 1815, Reptilia/, 1829b: 120, 1831: sign. B (n. v.); Lankester 1885: 380.

*Prionurus* -. Peters 1862: 513; Pocock 1893: 312, 1895: 292; Laurie 1896: 131; Pocock 1896: 303, 1897: 103; Birula 1900b: 355, 1903a: 67, 1904b:

29; Kraepelin 1904: 195; Birula 1905a: 120; Penther 1912: 110; Pallary 1925: 56; Werner 1936b: 172.

*Buthus (Prionurus) Pocock* 1890: 126; Birula 1900c: 8; 1908: 132; Simon 1910: 64; Birula 1911b: 162, 1917a: 88, 1917b: 131, 1918: 27, 1927a: 80; Werner 1934: 268; Kästner 1940: 231.

*Puchale Francke* 1985: 4, nomen substitutum pro *Prionurus* H. et E. 1829, nomen praeoccupatum.

Distribution. USSR (Transcaucasia), NORTH and EAST AFRICA, MIDDLE EAST, IRAN, AFGHANISTAN, PAKISTAN, INDIA.

Note. The complete revision of genus was never made and is highly required, for the volume of its species remains uncertain (Levy and Amitai 1980).

### 1. *Androctonus crassicauda* (Oliver 1807)

#### Synonymy

*Scorpio crassicauda* Olivier 1807: 96, pl. 42, fig. 2/ type: "Cachan" = Kuchan, Iran, examined by A. A. Birula (1905a: 121)/.

*Androctonus bicolor* (nec H. et E. 1829) C. Koch 1841: 41, fig. 621 ("Syria"); Grube 1873: 56; Kessler 1874: 16 (in part.); Köppen 1881: 219.

*Buthus crassicauda* . Simon 1872: 247, 1879: 99; Kraepelin 1899: 16; Radde 1899: 478; Kraepelin 1901: 266; Pocock 1902: 373; Werner 1902: 596; Kraepelin 1913: 124; Richter 1945: 21; Bogachov 1951: 402; Orlov et al., 1977: 5; Yusubov 1977: 23, 1978a: 73, 1978b: 60.

*Androctonus crassicauda* -. Kraepelin 1891: 175, Taf. 1, fig. 2; Penther 1912: 110; Vachon 1948b: 305, 1951: 58, 1952: 134, 1958b: 124; Tolunay 1959: 366, Abb. 3; Khalaf L. 1962: 1; Khalaf K. 1963: 59; Tulga 1964: 153; Vachon 1966: 210; Habibi 1971: 42; Farzanpay and Pretzmann 1974: 215; Pérez 1974: 17; Vachon 1979a: 31; Levy and Amitai 1980: 23, fig. 3034 (= ssp. *orientalis*); Yusubov 1981: 80 (*Androctonus*, laps. cal.); Yusubov and Gadzhiev 1982: 36 (*Androctonus*, laps. cal.); Orlov and Vasilyev 1983a: 10, fig. 10, 1983b: 62; Vasilyev and Orlov 1983: 72; Yusubov and Gadzhiev 1983: 33; Fet 1984: 41; Kinzelbach 1985: 1.

*Prionurus crassicauda* -. Pocock 1895: 292; Birula 1896: 235 (= *bicolor*); Davydov 1898: 40; Birula 1900a: 355; 1903c: 67, 1903d: XVII, 1904b: 29; 1905a: 120; 1905b: 120; Finnegan 1932: 92; Werner 1936b: 172, 1936c: 204; Bodenheimer 1937: 235; Vachon 1947a: 161, 1947b: 26.

*Prionurus crassicauda orientalis* Birula 1900a: 355 (syntypes: 1 ♀, Iran, East Khorassan, Sirkuh, Chous-Muzafyr, 20.04.1898 (N. Z.), ZIN - ?; 1 ♂, Iran, East Kerman, "Sargad" (Serkhed), Chynikaka, 17.08.1898 (id.), ZIN - ? ), 1903c: 67, 1905a: 120.

*Buthus (Prionurus) crassicauda* -. Birula 1900c: 9, 1910: 170, 1911b: 161, 1912: 117; 1917a: 88, fig. 5, 1917b: 131, 1918: 27; Werner 1934: 268; Kennedy 1937: 745; Roewer 1943: 207; Tertyshnikov 1949: 112.

*Androctonus crassicauda orientalis* -. Vachon 1958b: 124, 1966: 210; Pérez 1974: 18.

*Euscorpis mingrelicus* (nec Kessler 1874) Khalilova and Monina 1973: 34, MISIDENTIFICATION.

#### Distribution

USSR. Armenia. Artashatsky (= Kamarlinsky) District (Richter 1945); Divalu (Richter 1945); Echmiadzin (Birula 1896, 1911b, 1912, 1917a); 5.08.1909 (Bryansky), 1 ♀, ZIN - 1833; Echmiadzinsky District (Richter 1945); Erevan (= Erivan') (Birula 1896, 1904b, 1911b, 1912, 1917a; Richter 1945), 1900 (N. Ivanov), 1 ♂, 1 ♀, ZIN - 35; 19.04.1917 (F.A. Byalynitsky-Birula), 1 ♀, ZIN - 388; 17.08.1902 (Yelachich and Klimantovich), 1 juv., ZIN - 1443; Megri (= Migry) (Tertyshnikov 1949), 5.07.1913 (A.N. Bartenev), 1 ♀, ZIN - 1446; Vedi, 2 - 25.07.1951 (coll.?), 2 ♂, 2 ♀, ZM - Tb - 175; Vedinsky District (Richter 1945).

Azerbaijan. Baku (loc. dub.) (Birula 1904b, 1917a; Richter 1945; Tertyshnikov 1949; Bogachov 1951); year? (O. Hertz), 2 ♀, ZIN - 24; Dzhebrail (Tertyshnikov 1949: loc. dub.); Mindzhevan (Tertyshnikov 1949); Muganskaya Steppe (Birula 1917a; Richter 1945; Tertyshnikov 1949; Bogachov 1951: loc. dub.). Nakhichevan' AO: Zhulfa (Birula 1896, 1904b, 1911b, 1917a; Tertyshnikov 1949; Bogachov 1951; Yusubov 1977); 1855 ("Brthlm"), 2 ex., ZIN - 29; 16.04.1917 (F. A. Byalynitzki - Birula), 1 juv., ZIN 387; 1981 (N. V.), 1 ♂, 1 ♀, ZM - Tb - 460; Ilyichevsky District (Khalilova and Monina 1973); Nakhadzhir, 1000 m, 15.06.1983 (P.M. Dunin) 1 ♂, 1 juv., ZM - Tb - 378; Nakhichevan' (Birula 1896; Radde 1899; Birula 1900c, 1904b, 1905b, 1911b, 1917a; Tertyshnikov 1949; Bogachov 1951; Yusubov 1977); 06-07.1891 (A. A. Birula), 2 ♂, 1 ♀, 1 juv., ZIN - 30; 1893 (A. O. Kovalevsky), 1 ♀, ZIN - 31; 07.1891 (A. A. Birula), 1 juv., ZIN - 1442; 06-07.1891 (id.), 1 ♂, 1 ♀, ZIN - 1831; Nizhne - Siarsky Post (on Araxes) (Birula 1917a); Ordubad (Birula 1896; Radde 1899; Birula 1905b, 1911b, 1912, 1917a; Bogachov 1951; Yusubov 1977); 1982 (N. V.), 3 ♀, ZM - Tb - 379.

Turkmenia (?) (loc. dub.). Ashkhabad, year? (K. Rossikov), 1 ♀, ZIN - 1830. ARABIA, ISRAEL, SYRIA, IORDANIA, IRAQ, IRAN, TURKEY, MOROCCO (?).

#### Notes

1. A subspecific structure of this species was not revised. Except of *A. c. orientalis* (Bir.) which is now considered non-valid, Vachon (1948) described *A. c. gometi* from Morocco. The last form probably belongs to the another species (Levy and Amitai 1980).

2. A record in Turkmenia is very doubtful. Rossikow visited Central Asia as well as Transcaucasia, where probably this specimen was collected, but labels in this collection maybe were mixed. Nevertheless, this species inhabits East Iran not far from Turkmenian border and its

penetration through Kopetdagh Mountains is not generally impossible. However, numerous samples during many years in environs of Ashkhabad had never given me a specimen of *A. crassicauda*.

## 2. Genus *ANOMALOBUTHUS* Kraepelin 1900

### Synonymy

*Anomalobuthus* Kraepelin 1900: 9 (type species *A. rickmersi*); 1905: 327; Birula 1911b: 171, 1917a: 215, 1917b: 112, 1927a: 81; Pavlovsky 1934: 201; Werner 1934: 265, Abb. 341, Birula 1937: 102; Vachon 1958a: 425; Stahnke 1972: 122, fig. 3; Pérez 1974: 18; Vachon 1974: 906, fig. 37; Fet 1980: 224, 1984: 40; Francke 1985: 5; Fet 1987a: 445.

Distribution: see *A. rickmersi*.

Note. O. Francke (1985: 5) gives wrong date of original description (1901), whereas Kraepelin's work is dated by 1900.

### 1. *Anomalobuthus rickmersi* Kraepelin 1900

#### Synonymy

*Anomalobuthus rickmersi* Kraepelin 1900: 10, fig. 4-7 /type in Zool. Mus., Hamburg, "Bucharei" (Uzbekistan, USSR), coll. W. Rickmer-Rickmers (Weidner 1959: 98); Birula 1904b: 32, 1905b: 449, 1910: 154, 1911b: 171; Pavlovsky 1916a: 35, 1916b: 243, fig. 1; Birula 1917a: 215, 1917b: 212; Pavlovsky 1934: 201; Werner 1934: 272, Abb. 341; Kästner 1940: 231; Vinogradov 1948: 305; Alimdzhanov and Bogdanov 1965: 280; Pérez 1974: 18; Vachon 1974: 908, fig. 37; Orlov et al., 1977: 5; Fet 1980: 224, 1982: 1911; Orlov and Vasilyev 1983a: 9, fig. 7; Vasilyev and Orlov 1983: 72; Fet 1984: 41, 1985: 76, 1987a: 446.

#### Distribution

USSR. Kazakhstan: Kzyl-Orda Region: Dzhulek (Birula 1911b; Pavlovsky 1916a); 6-21.1907 (D. Glazunov), 2 ♂, ZIN-810.

Uzbekistan (Kraepelin 1900; Weidner 1959; Alimdzhanov and Bogdanov 1965).

Turkmenia. Ashkhabad Region: Anausky District (G. T. Kuznetsov, pers. comm.), Lake Sportivnoye Reservoir (G. T. Kuznetsov, pers. comm.); Tedzhen (Birula 1905b; Pavlovsky 1934); 10-24.06.1904 (K. Arris), 1 ♂, ZIN - 809. Chardzhou Region: Repetek (Birula 1904b; Pavlovsky 1934; Fet 1980); 02.1904 (E. Fischer), 1 ♀, ZIN - 808; 06.1929 (V. 6.), 1 ♀, ZIN - 1834; 5.08.1981 (V. A. Krivokhatsky), 1 juv., ZM - Tb - 366; 04.1972 (V. I. Kuznetsov), 1 ♀, Tb - 368; 04-05.1967 (id.), 13 juv., ZM Tb - 369; 31.06.1967 (id.), 2 ♀, ZM - Tb - 370; 2.08.1967 (id.), 3 juv., ZM - Tb - 371; 13.05.1967 (id.), 1 juv., ZM - Tb - 372; 3.09.1972 (id.), 2 juv., ZM - Tb - 373. Krasnovodsk Region: Kheles (S. I. Sukh, pers. comm.). Tasshauz Region: Kunya (-) Urgnch, 3.06.1972 (G. S. Medvedev), 1 ♀, 1 juv., ZIN - 1699; Shakhselem, 8.10.1983 (O. Soyunov), 1 ♀, ZM Tb - 374.



### 3. Genus *HOTTENTOTTA* Birula 1908

#### Synonymy

*Buthus* (*Hottentotta*) Birula 1908: 141 /type species *Buthus hottentotta* (F.), by original designation/, 1910: 119; Simon 1910: 71; Birula 1911b: 174, 1914: 633, 1916: 11, 1917a: 214, 1917b: 214, 1918: 30; Pallary 1924: 220; Birula 1927a: 81, 1937: 101; Werner 1934: 268, 1935b: 211; Birula 1937: 101; Kästner 1940: 231; Roewer 1943: 207.

*Hottentotta* —. Pallary 1925: 56; Farzanpay and Pretzmann 1974: 215; Francke 1985: 4 (= *Buthotus*).

*Dasyscorpio* Pallary 1938: 279 (type species *Hottentotta franzwmeri* (Birula) 1914), sub *Buthus ludaudi* Pallary 1914, by original designation).

*Buthotus* Vachon 1949: 143, fig. 313 - 323 (type species *Buthus judaicus* Simon 1872: by original designation; = *Dasyscorpio*), 1952: 229, 1958b: 129; 1966: 210; Vachon and Stockmann 1968: 81; Stahnke 1972: 131; Pérez 1974: 20; Vachon 1974: 906; Lamoral and Reynders 1975: 500; Vachon 1979b: 233; Levy and Amitai 1980: 53; Tikader and Bastawade 1983: 164; Fet 1984: 40; Kinzelbach 1985: 1.

Distribution. USSR (Tadzhikistan), AFRICA, MIDDLE EAST, IRAN, AFGHANISTAN, PAKISTAN, INDIA.

Notes. 1. The name *Hottentotta* was forgot for a time, but Francke (1985) revalidated it; evidently must be conserved.

2. Within the USSR (Azerbaijan) there can be found the species *Hottentotta saulcyi* (Simon 1880) known from Iraq and Iran; it was collected in Iranian Azerbaijan (Ardebil), in 40 km from Soviet border (Habibi 1971).

#### 1. *Hottentotta alticola* (Pocock 1895)

#### Synonymy

*Buthus alticola* Pocock 1895: 302, pl. 9, fig. 3 (Pakistan, Chitral; type in British Museum (N.H.)); Birula 1897: 377 (= var. *punjabensis*); Pocock 1900: 19; Birula 1904b: 30; Kraepelin 1913: 127; Vinogradov 1948: 305; Alimdzhanov und Bronstein 1956: 92; Orlov et al., 1977: 5.

*Buthus buchariensis* —. Birula 1910: 65.

*Buthus* (*Hottentotta*) *alticola* —. Birula 1911b: 174, 1914: 654.

*Buthus* (*Hottentotta*) *buchariensis* —. Birula 1914: 654.

*Buthotus alticola* —. Vachon 1949: 147, 1953: 81, Abb. 1, 1958b: 129 (= *buchariensis*), 1965: 279; Vachon and Stockmann 1968: 91; Orlov and Vasilyev 1983a: 10, 1983b: 7 (*Buthothus*, laps. cal.); Tikader and Bastawade 1983: 164; Vasilyev and Orlov 1983: 72; Fet 1984: 41.

*Buthotus buchariensis* —. Vachon and Stockmann 1968: 91; Pérez 1974: 21.

*Buthus hottentotta* var. *punjabensis* Kraepelin 1890: 50, NOMEN NUDUM (Birula 1897) (no description of a variety was given).

Distribution. USSR (Tadzhikistan), AFGHANISTAN, PAKISTAN, INDIA.

Note. Six subspecies are distinguished within *H. alticola* (Poc.): *H. a.*

*alticla* (Poc.) (Pakistan), *H. a. buchariensis* (Birula 1897) (Tadzhikistan), *H. a. penjabensis* (Birula 1897) (Pakistan, India), *H. a. nigrifrons* (Poc. 1900) (Pakistan), *H. a. kabulensis* (Vachon 1958) (Afghanistan), and *H. a. minusalta* (Vachon 1958) (Afghanistan).

#### 1 a. *Hottentotta alticola buchariensis* (Birula 1897).

##### Synonymy

*Buthus alticola forma buchariensis* Birula 1897: 378 (Tadzhikistan, Dushanbe Region, syntypes ZIN - 209 and ZIN - 210, see below).

*Buthus alticola buchariensis* —. Kraepelin 1899: 21; Birula 1904: 30, 1917a: 240.

*Buthus buchariensis* —. Birula 1910: 65.

*Buthus (Hottentotta) buchariensis*: Birula 1914: 654.

*Buthotus alticola buchariensis* —. Vachon 1958b: 134.

*Buthotus buchariensis* —. Vachon and Stockmann 1968; Pérez 1974.

Distribution. USSR Tadzhikistan: Dushanbe Region: Gissar (Birula 1897, 1904b), 2 ex., (Lidsky), 1888, ZIN - 209 (syntypes); Tursunzade (= Regar) (Birula 1897, 1904b); 1 ex. (Lidsky), 1888. ZIN - 210 (syntype). Kurgantuybe Region: Gandzhino, 9.06.1961 (Yu. B.), 1 ♂, 5 ♀, ZIN 1543; Kurgantuybe Pass, 05.1959 (id.), 2 ♂, 1 ♀, 2 juv, ZIN - 1540.

Note. This subspecies was raised to species level (Birula 1910) without sufficient reasons. The revision of species is required.

#### 4. Genus *KRAEPELINIA* Vachon 1974

##### Synonymy

*Kraepelinia* Vachon 1974: 950, fig. 235 - 239/type species *Buthus palpator* (Birula 1903), by original designation; Fet 1984: 37, fig. 1; Francke 1985: 9; Fet 1987b: 91.

Distribution. USSR (Turkmenia), IRAN.

##### 1. *Kraepelinia palpator* (Birula 1903)

##### Synonymy

*Butinus palpator* Birula 1903b: 72 (Iran, Kerman, "Prov. Ssarghad", now Serkhed, 30-31.08.1899 (N. Z.), 1 ♂ (type), ZIN - 565, examined), 1905a: 138; Werner 1936c: 204.

*Buthus (Buthacus) palpator* —. Birula 1908: 140; Simon 1910: 75; Birula 1917a: 214, 1927a: 81.

*Buthacus palpator* —. Vachon 1948c: 475, 1952: 180, 1966: 210; Habibi 1971: 43; Pérez 1974: 19.

*Kraepelinia palpator* —. Vachon 1974: 950, fig. 235 - 239; Vasilyev and Orlov 1983: 72; Fet 1984: 37, 1987b: 91.

Distribution. USSR. Turkmenia. Chardzhou Region (loc. err.), Repetek (Vasilyev and Orlov 1983; a locality is wrong, for authors mixed Repetek

with Badghyz). Mary Region : Badghyz Reserve, Lake Yeroilanduz (Fet 1984), 19.04.1972 (Yu. K. Gorelov, 1 ♀, ZIN - 1563. IRAN (East).

### 5. Genus *LIOBUTHUS* Birula 1898

#### Synonymy

*Liobuthus* Birula 1898b: 276 (type species *L. kessleri* Birula 1898, by monotypy), 1904b: 28 (= *Plesiobuthus*); Kraepelin 1905: 327 (Birula 1911b: 170, 1917a: 214, 1917b: 112, 1927a: 81; Pavlovsky 1934: 201; Shestoporov 1934: 226; Werner 1934: 267; Birula 1937: 102; Vachon 1958a: 422, 1966: 212; Habibi 1971: 43; Stahnke 1972: 130; Pérez 1974: 25; Vachon 1974: 906; Fet 1980: 224, 1982: 1911, 1984: 40, 1985: 76; Francke 1985: 9; Fet 1987a: 445.

Distribution. USSR, IRAN.

Note. Some authors (Birula 1904b; Kraepelin 1905; Werner 1934; Francke 1985) consider the genus *Plesiobuthus* Pocock 1900 (Pakistan) as a junior synonyme of *Liobuthus* Bir. However, Stahnke (1972) examined true *Plesiobuthus* from Pakistan and stated that it is a separate genus; my examination of *Liobuthus* also shows it. A revision of type specimen of *Plesiobuthus paradoxus* Pocock is highly required.

### 1. *Liobuthus kessleri* Birula 1900 1898

#### Synonymy

*Liobuthus kessleri* Birula 1898: 276 (Turkmenia, syntypes: ZIN - 795 to 798, see further), 1900c: 13, 1904b: 33, 1910: 154, 1911b: 170; Pavlovsky 1916a: 35, fig. 3, 4, 5B, 1916b: 243, fig. 1, 2A; Birula 1917a: 214, 1917b: 112; Pavlovsky 1934: 201; Werner 1934: 272, Abb. 9 and 301; Kästner 1940: 232; Vinogradov 1948: 303, fig. 196; Vachon 1958a: 422, fig. 1 - 5; Alimdzhanov and Bogdanov 1965: (*Loiduthus*, laps. cal.); Vachon 1966: 212; Habibi 1971: 43; Pérez 1974: 251; Vachon 1974: 910, fig. 50; Orlov et al., 1977: 5; Kaplin 1978: 32; Soyunov 1979: 27; Fet 1980: 224, 1982: 1911; Orlov and Vasilyev 1983a: 8, fig. 6; Vasilyev and Orlov 1983: 72; Fet 1984: 41, 1985: 76, 1987a: 446.

Distribution. USSR. Kazakhstan. Chimkent Region: Karaikuduk Well, 25.07.1907 (N. Z.), 1 ♂, ZIN - 803. Kzyl-Orda Region: Dzhulek (Birula 1911b; Pavlovsky 1916 a); 2-3.08.1907 (P.V. Antonov), 1 ♂, 2 ♀, ZIN - 805; 6-21.08.1907 (D. Glazunov), 1 ♂, 1 ♀, ZIN 806. Turkmenia. Ashkhabad Region: Anausky District (G. T. Kuznetsov, pers. comm.); Archman, 7.05.1974 (Yu. B.), 1 ♀, ZIN - 1549; Ashkhabad (Birula 1898b, 1904b; Pavlovsky 1934); 1889 (A. P. Semenov-Tyan-Shansky) 1 ♀, ZIN - 797 (212) (syntype); 6.06.1985 (P. A. Varentsov), 1 ♂, ZIN - 796 (609) (syntype); Geok-Tepe (V.F., observation, Lake Sportivnoye Reservoir (G. T. Kuznetsov, pers. comm.). Chardzhou Region: AmuDarya (Birula 1898a, 1904b); 05.1895 (K. Ahnger), 1 ♀, ZIN - 798 (1392) (syntype); Chardzhou (Birula 1911b); 25.07.1905 (E. Fisher), 1 ♀, ZIN - 800; Repetek (Birula 1911b; Pavlovsky 1934; Kaplin 1978; Fet 1980); 27.07.1907

(Dolgopолоv), 1 ♀, ZIN 799; 06.1905 (E. Fisher), 1 ♀, ZIN - 801; 06-09.1972 (O. R. Sabirova), 3 ♂, 2 juv., ZIN - 1559; 7 - 10.05.1937 (B. Vinogradov and N. Yegorov), 1 ♀, ZIN - 1712; 26.04.1973 (V. I. Kuznetsov), 5 juv., ZM - Tb - 376; 04.1967 (id.), 1 ♂, 6 ♀, 35 juv., ZM - Tb - 377. Krasnovodsk Region: Akhchakuima, 12.05.1984 (V. F., observation); Dzhebel (Pavlovsky 1934); 26.04.1921 (L. Moritz), 1 ♂, ZIN - 807; 22 km to WSW from Dzhebel, 06.1974 (Yu. B.), 1 juv., ZIN - 1580, Mollakara ("Muttakary" or "Mollakary") (Birula 1898b, 1904b; Pavlovsky 1934); 20-23.04.1899 (A. P. Semenov-Tyan-Shansky), 1 ♀, ZIN - 795 (211) (syntype). Mary Region: Bairam-Ali (Birula 1911b; Pavlovsky 1934); 1907 (K. Demokidov), 1 ♂, ZIN - 802. Tashauz Region: Chirishly, 2829.09.1983 (O. Soyunov), 2 juv., ZM - Tb - 375; Shakhsemen, 06.1953 (E. Arens), 1 ♀, ZIN - 1847. Uzbekistan. Navoi Region: Aristantau and Beltau Mts, way from Malkharkuduk Well to Chukurkuduk Well, 22-23.05.1912 (N. Z.), 1 ♀, ZIN - 804; Baibek, year? (1871?) (A. P. Fedchenko), 1 ♀, 1 juv., ZM - Tb - 402; Karaikuduk Well (Birula 1911b). Tashkent Region: Tashkent (Birula 1900c; 1911b).  
IRAN (only in North-East: Sarakhs).

## 6. Genus *MESOBUTHUS* Vachon 1950

### Synonymy

*Mesobuthus* Vachon 1950: 152 (type species *Androctonus eupeus* C. L. Koch 1838, by original designation), 1952: 324, 1958b: 141, 1966: 212; Stahnke 1972: 133, fig. 21; Farzanpay and Pretzmann 1974: 216; Pérez 1974: 906; Kinzelbach 1975: 15; Fet 1980: 224; Kinzelbach 1982: 51; Orlov and Vasilyev 1983a: 10; Tikader and Bastawade 1983: 186; Fet 1984: 41; Kinzelbach 1984: 103; Francke 1985: 10; Kinzelbach 1985: 2.

*Olivierus* Vachon et Farzanpay in Farzanpay 1986: 334, NOMEN NUDUM (genus was not described).

Distribution. USSR (southern part of the European Part, Caucasus, Kazakhstan, Central Asia), ALBANIA, YUGOSLAVIA, GREECE, TURKEY, IRAQ, IRAN, AFGHANISTAN, PAKISTAN, INDIA, MONGOLIA, CHINA, KOREA; JAPAN (delivered), SINGAPORE (delivered?).

Note. The complete revision of this genus was never made, and number of species is not exactly known.

### 1. *Mesobuthus eupeus* (C. L. Koch 1838)

#### Synonymy

*Androctonus eupeus* C. L. Koch 1838: 127, tab. 175, fig. 419 /"Caucasus", "Sturm's collection in Nürnberg" (Birula 1917a), type unknown/; Gervais 1844: 43; L. Koch 1878: 38.

*Androctonus thersites* C. L. Koch 1839: 51, tab. 193, fig. 466 (patria ignota, "Sturm's collection in Nürnberg", type unknown); Kraepelin 1891: 204.

*Androctonus ornatus* Nordmann 1840: 732, pl. 1, fig. 2 (Caucasus, "Imeretia", type unknown); Kessler 1874: 19 (in part); Köppen 1881: 219; Kraepelin 1891: 204; Alimdzhanov and Bronstein 1956: 92.

*Androctonus cognatus* L. Koch 1878, tab. 1, fig. 1 /Caucasus, Upper Kura River, environs of Atskuri (= Atskur), types studied by Birula (1917a: 37), now are probably lost/.

*Buthus eupeus*—. Simon 1879: 100; Birula 1896: 238 (= ? caucasicus; = thersites; = ornatus; = occitanus; = cognatus; = afghanus); Schmidt 1896: 30; Kraepelin 1899: 23; Radde 1899: 480 (eupaeus, laps.cal.); Birula 1900a: 358, 1900c: 9; Kraepelin 1901: 267; Birula 1903a: 68, 1903d: XVII, 1904b: 29; 1905a: 119 (= caucasicus; = pachysoma), 1905b: 122, fig. 1, 3; Tarnani 1907: 30; Birula 1910: 120, 1911b: 162; Nesterov 1911: 0151; Birula 1912: 118; Penther 1912: 112 (eupaeus, laps.cal.); Birula 1917a: 24, fig. 1-2, tab. 1, 1917b: 135, tab. 1, 1918: 8, fig. 1-6 (= phillipsi), 1925: 95, 1927a: 82, 1927b: 202; Pavlovsky 1931: 93, fig. 24, 25A; Leister 1933: 341; Pavlovsky 1934: 200; Shnitnikov 1934: 28; Werner 1934: 269, 1936c: 204; Vlasov 1937a: 238, 1937b: 241; Kennedy 1937: 745; Kästner 1940: 231; Dubinin 1946: 98; Kobakhidze 1947: 647; Vinogradov 1948: 305; Kobakhidze 1949: 105; Tertysnikov 1949: 110; Kobakhidze 1950: 375; Bogachov 1951: 402; Kobakhidze 1951: 14; Marikovskiy 1953: 160; Dubinin 1954: 292; Alimdzhanov and Bronstein 1956: 92; Kobakhidze 1960: 1573; Pigulevskiy 1961: 40; Kobakhidze 1964: 8; Alimdzhanov and Bogdanov 1965: 278 (europeus, laps. cal.); Mkheidze 1968: 214; Länge 1969: 39; Khalilova and Monina 1973: 34; Orlov et al., 1977: 4; Yusubov 1977: 22; Kaplin 1978: 32; Yusubov 1978: 73; Ivanov and Balashov 1979: 73; Kashnikova 1979: 30, 1980: 20; Malinina 1981: 82; Vasilyev et al. 1981: 30; Yusubov and Gadzhiev 1982: 33; Bolokan 1984: 203; Sabirova 1986: 53.

*Buthus ornatus*—. Simon 1879: 100

*Buthus cognatus*—. Simon 1879: 100; Kraepelin 1891: 204.

*Buthus afghanus* Pocock 1889a: 116, fig. 4 /North-east Iran, "between valley of Harirud River and Meshed", type in British Museum (N. H.); paratype N 87-51, BMNH, studied by M. Vachon (1958b: 156), "North Afghanistan"; paratype from Bushir, Iran in Zool. Mus. Hamburg (Weidner 1959: 99); Kraepelin 1895: 83; Birula 1900c: 10.

*Buthus phillipsi* Pocock 1899b: 341, pl. 15, fig. 5 (South Iran, Bushir, type in BMNH); Kraepelin 1899: 24; Birula 1905a: 131, 1910: 173; Borelli 1914: 460; Werner 1936c: 204.

*Buthus pachysoma* Birula 1900a: 370 (Iran, East Kerman, Bampur, 1♀. 15-23.07.1898 (N. Z.), ZIN - ? ).

*Mesobuthus eupeus*—. Vachon 1950: 153, 1952: 324, 1958b: 154; L. Khalaf 1962: 2; K. Khalaf 1963: 59; Vachon 1966: 212; Mayre 1969: 40; Habibi 1971: 43; Farzanpay and Pretzmann 1974: 216; Pérez 1974: 26; Kinzelbach 1975: 22; Fet 1980: 224; Vasilyev et al. 1981: 30; Kashnikova 1982: 31; Yusubov 1981: 80; Fet 1982: 1911; Kinzelbach 1982: 31; Vasilyev and Orlov 1983: 72; Orlov and Vasilyev 1983a: 10, fig. 11, 1983b: 62; Yusubov 1983: 108; Yusubov and Gadzhiev 1983: 33; Fet 1984: 41; Kinzelbach

1984: 104; Kuznetsov 1984a: 163; Kinzelbach 1985: 2; Yusubov 1985: 43; Farzanpay 1986: 333.

*Mesobuthus phillipsi*—. Pérez 1974: 25.

*Scorpio caucasius* Fisher 1813: 404, tab. 4, fig. 1, NOMEN NUDUM (in part) (Birula 1917a: 1).

*Androctonus occitanus* Wagner 1854: 71 (nec Amoreux 1789), MISIDENTIFICATION.

*Buthus ? caucasicus* Birula 1896: 238 (nec Nordmann 1840), pro *Scorpio caucasius* Fisher 1813.

*Buthus caucasicus* Pocock 1899: 404 (nec Nordmann 1840), pro *Scorpio caucasius* Fisher 1813, NOMEN NULLUM.

*Buthus caucasius* Pocock 1900: 21, NOMEN NUDUM (Birula 1917a: 1)

Distribution. USSR: Georgia, Armenia, Azerbaidzhan (see *M. e. eupeus*), Russia, Kazakhstan (see *M. e. bogdoensis*, *M. e. thersites*), Tadzhikistan (see *M. e. thersites*, *M. e. barszczewskii*); Turkmenia (see *M. e. thersites*, *M. e. afghanus*, *M. e. philippovitchi*), Uzbekistan (see *M. e. thersites*, *M. e. barszczewskii*). All localities published without subspecific name from Georgia, Armenia and Azerbaidzhan are here placed to *M. e. eupeus*, from Kazakhstan and Turkmenia - to *M. e. thersites*.

TURKEY, IRAQ, IRAN, AFGHANISTAN, PAKISTAN, MONGOLIA, CHINA.

Notes. 1. There are separated 14 subspecies: *M. e. eupeus* (C. Koch 1838) (USSR, Turkey, Iran), *M. e. thersites* (C. Koch 1839) (USSR, Iran, China), *M. e. afghanus* (Pocock 1889) (USSR, Iran, Afghanistan), *M. e. phillipsi* (Pocock 1889) (Iran), *M. e. bogdoensis* (Birula 1896) (USSR), *M. e. persicus* (Pocock 1889) (Iran, Pakistan), *M. e. Kirmanensis* (Birula 1900) (Iran), *M. e. pachysoma* (Birula 1900) (Iran, Pakistan), *M. e. barszczewskii* (Birula 1904) (USSR), *M. e. philippovitchi* (Birula 1905) (USSR, Iran), *M. e. mongolicus* (Birula 1911) (Mongolia, China), *M. e. mesopotamicus* (Penther 1912) (Iraq), *M. e. iranus* (Birula 1917) (Iran), *M. e. haarlovi* Vachon 1958 (Afghanistan). Criteria for subspecific delimitation and validity of some subspecies need the complete revision.

2. Birula (1917a: 40) has united all known subspecies of *M. eupeus* into two "sections": Sectio *Eupeus* (ssp. *eupeus*, *philippovitchi*, *persicus*, *iranus*, *kirmanensis*, *mesopotamicus*, *afghanus*), and Sectio *Thersites* (ssp. *thersites*, *barszczewskii*, *bogdoensis*, *volgensis*, *mongolicus*). The status of these "sections" was not examined.

3. The species *Buthus atrostriatus* Pocock 1897 (India, Pakistan) was formerly included into *Buthus eupeus* C. Koch as subspecies (Kraepelin 1899) but now is placed into a new genus *Vachonus* Tikader and Bastawade 1983.

#### 1 a. *M. e. eupeus* (C. Koch 1838)

##### Synonymy

*Androctonus eupeus* C. Koch 1838: 127, tab. 175, fig. 419, L. Koch 1878: 38.

*Androctonus cognatus* L. Koch 1878: 58.

*Buthus eupeus forma* Birula 1896: 239.

*Buthus eupeus forma* Birula 1896: 240 (in part).

*Buthus eupeus ssp. tyicus* Kraepelin 1899: 23; Birula 1900a: 358.

*Buthus eupeus eupeus* —. Birula 1904b: 37 (= *ssp. cognatus*), 1905a: 122, 1905b: 122, 1911b: 162, 1912: 121, 1917a: 40, 1917b: 26, fig. 1-2, tab. 1, 1918: 9, 1925: 95; Leister 1933: 341; Werner 1936c: 204; Tertysnikov 1949: 110.

*Mesobuthus eupeus eupeus*—. Vachon 1950: 152, 1958b: 155, 1966: 212; Habibi 1971: 43; Pérez 1974: 26; Vasilyev et al. 1981: 31; Orlov and Vasilyev 1983b: 62; Vasilyev and Orlov 1983: 74.

Distribution. USSR. Armenia: "all Armenia except of Leninakan Steppe and Pambak Valley" (Richter 1945); Adatapa (near Sevan Lake), 30.06.1902 (E. Elachich), 1♂, 1♀, 1 juv., ZIN - 212; Aigerlych (near Yerevan), 6.04.1936 (A. Richter), 1♂, 1♀, ZIN 1782; Akhty, 5.06.1936 (A. Richter and M. Ter-Minassian), 1♂, ZIN 1785; Artyk (28 km from Leninakan), 5-20.06.1936 (M. Ter-Minassian), 1♂, 3♀, 2 juv., ZIN 1776; Astazur (Birula 1917a), 05.1894 (K.S.), 2♀, ZIN - 272; Babadzhandarasi (near Lake Sevan) 27.06.1902 (E. Elachich), 3♂, 2♀, 1 juv., ZIN - 311; Bartaz (on Araxes) 3.06.1904 (S. N. von Wick), 1♀, ZIN 273; Byurakan, 3.06.1956 (L. V. Zimina), 3♀, 2 juv., ZM - Tb - 452; Darachichakh (near Sevan Lake) (Birula 1917a), 1879 (A. Brandt), 1♂, 1 juv., ZIN - 303; Dzhrvezh (near Yerevan), 9.05.1938 (A. Richter and M. Ter-Minassian), 1♀, ZIN - 1786; 12.04.1936 (A. Richter), 2♀, ZIN - 1791; Echmiadzin (Birula 1911b, 1917a), 16.05.1909 (Bryansky), 1 juv., ZIN - 1833; 20.09.1934 (A. N. Kirichenko), 2♀, ZIN - 1605; 24.03.1936 (A. Richter), 1 juv. ZIN - 1793; Goris, 1983 (N. V.), 120 juv., ZM - Tb - 120; Gyunei (near Lake Sevan) (Birula 1917a), 26.05.1902 (E. Elachich), 1♂, 1♀, 2 juv., ZIN - 314; Khachik (Birula 1900c, 1917a; Tertysnikov 1949); year? (Nasonov) 2♂, ZM - Tb - 50; Khosrovsky Reserve, 1500m, 19.04.1983 (V. V. Yanushev), 1 juv. ZIN - 1779; Khurkhurkam (near Lake Sevan), 5.07.1902 (E. Elachich), 5♂, 8♀; ZIN - 310; Kushchudarasi (near Lake Sevan), 23-27.07.1902 (id.), 1♂, 3♀, ZIN - 313; Lichk (in Megrinsky District), 10.06.1955 (L. V. Zimina), 1♀, ZM - Tb - 434; Mastara (L. Koch 1878; Birula 1917a); Megri, 14.05.1957 (L. V. Zimina), 1♀, ZM - Tb - 454; 30.04.1938 (A. Richter and M. Ter-Minassian), 2♀, ZIN - 1790; Noemveryansky District, Khrami River, 23.05.1956 (L. V. Zimina), 1♀, ZM - Tb - 457; Oktemberyan (= Sardarabad) (L. Koch 1878; Radde 1899; Birula 1905b, 1917a); Sanain (Birula 1919, 1917a); Lake Sevan (= Gokcha), 22.07.1927 (A. N. Dyakonov), 1♀, ZIN - 1824; Sevanga Island (in Lake Sevan) (Birula 1900c, 1917a), 1879 (A. Brandt), 3♂, 2♀, 10 juv., ZIN - 308; 25.07.1894 (Markov), 3♀, 5 juv., ZIN 309; 1885 (N. V. Nasonov), 3♀, ZM - Tb - 130; Shikakhokhsy Reserve (in Kafansky District), 900 - 950 m, 26.04.1983 (S. I. Golovach), 1♀, 2 juv., ZIN - 1780; Surmalinsky District (= Uezd) 04-05.1911 (N. A. Bobrinskoi), 1♂, 1 juv., ZM - Tb - 198; Vedi, 11.04.1956 (L. Zhiltsova), 2 juv., ZIN - 1851;

Yelenovka (near Lake Sevan) (Birula 1917a), 1879 (A. Brandt), 2 ♀, 1 juv., ZIN 315; 1891 (Guileulmi), 1 ♂, ZIN - 316; Yerevan (= Erivan') (Birula 1900c, 1904b; Leister 1910; Birula 1917a); 1893 (A. O. Kovalevsky), 2 ♂, 1 ♀, ZIN - 302; 19.04.1917 (F. A. Bialynitsky - Birula), 1 ♀, ZIN - 306; year? (Shakhovskiy), 1 ♂, ZM - Tb - 48; 9. 02. 1935 (A. Richter), 2 ♂, ZIN 1775; 1904 (N. N. Prostoserdov), 1 ♂, 1 ♀, ZIN - 1778; 30.03.1936 (A. Richter), 1 ♀, 2 juv., ZIN - 1787; 20.05.1938 (A. Pichter and M. TerMinassian), 2 ♀, ZIN - 1788; 26.03.1936 (id.), 2 ♀, ZIN - 1789; 5.04.1936 (id.), 1 juv., ZIN - 1794.

Azerbaijan. Agzivyr Mt (near Baku) (Birula 1917a), 19.06.1910 (Panov), 1 ♂, ZIN - 245; Alar (in Lenkoran'), 17.07.1901 (A. Z.), 3 ♂, 1 juv., ZM - Tb - 148; 17.07.1901 (id.), 2 ♂, 2 ♀, ZM - Tb - 446; Apsheron Peninsula (Birula 1911b, 1917a; Yusubov 1983, 1985), 1863 (Göbel), 2 ♂, 1 ♀, 1 juv., ZIN - 236; 10-20.06. 1912 (collector?), 5 ♂, 1 ♀, 1 juv., ZIN - 237; 15. 08. 1912 (collector?), 2 ♂, 5 ♀, ZIN - 239; 8.05.1904 (N. Knipovich), 1 ♂, 2 ♀, ZIN - 248; Areshsky Uezd, 06-07.1893 (A. Shelkovnikov), 1 ♂, 2 ♀, 1 juv., ZIN - 263; 05-06.1893 (id.), 3 juv., ZIN - 265; between Arus and Dzhi (north of Zuvand) (Birula 1912, 1917a); Bailov (near Baku) (Tertyshnikov 1949); Baku (L. Koch 1878; Tertyshnikov 1949; Bogachov 1951), 1877 (K. Bär), 2 ♂, 5 ♀, ZIN - 227; 1874 (O. A. Grimm), 1 juv., ZIN - 228; 1881 (A. Becker), 6 juv., ZIN - 231; 1882 (N. Dinnyk), 1 ♀, ZIN - 233; 1888 (N. Varpakhovskiy), 6 juv., ZIN - 234; 1900 (O. Herz), 3 ♂, 1 ♀, ZIN - 235; 1904 (N. Knipovich), 1 ♀, ZIN - 238; 03.1922 (E. Bobrova), 1 ♂, 5 ♀, 8 juv., ZIN - 1513; 10.1900 (S. Sorokin), 2 ♀, ZM Tb - 122; Bekovich Beach, 14.07.1912 (collector ?) 5 ♂, 2 ♀, ZIN - 241; Belokansky District (Yusubov and Gadzhiev 1982); Bibi-Eibat (Birula 1911b); 1908 (G. Blöcker), 1 ♂, 3 ♀, ZIN - 240; 24.03.1922 (E. Bobrova), 1 ♂, 3 ♀, 18 juv., ZIN 1512; Bozdagh (Birula 1917a); Isle Bulla (Yusubov 1985); Cape Byandovan (near Baku) (Birula 1917a), 1.05.1910 (Panov), 1 ♂, 4 ♀, ZIN - 244; Demirdagh (Birula 1912); Divichi (Birula 1912, 1917a; Yusubov 1985); Isle Duvanny (Yusubov 1985); Dyman (in Lenkoran') (Birula 1911b, 1912); 25.05.1909 (A. N. Kirichenko), 1 ♀, ZIN - 255; 18.07.1901 (A. Z.), 3 ♀, 2 juv., ZM Tb - 431; 18.07.1901 (id.), 1 ♂, 3 ♀, ZM - Tb 451; Dzhebrail (Radde 1899; Birula 1905b, 1917a; Tertyshnikov 1949; Yusubov and Gadzhiev 1982), 2.06.1894 (K. S.), 2 ♂, 1 ♀, ZIN 271; Eshakchi (in Lenkoran') (Birula 1912); Fizulinsky District (Yusubov and Gadzhiev 1982); Geoktapa (Birula 1912, 1917a), 25-28.06.1901 (R. H. Schmidt), 1 ♂, ZIN 268; Gosmalyan (= Kosmalyan) (Birula 1911b, 1912), 18-19.05.1909 (A. N. Kirichenko), 14 ♂, 2 ♀, 15 juv., ZIN - 251; 15.05.1985 (P. M. Dunin), 7 ♂, 19 ♀, ZM - Tb - 524; 20.05.1985 (id.), 2 ♂, 2 ♀, 2 juv., ZM - Tb - 525; 15.07.1985 (id.), 2 ♂, 1 ♀, 1 juv., ZM - Tb - 526; Govdara (Birula 1911b), 9.07.1909 (id.) 1 ♀, ZIN - 255; Kakhsy District (Yusubov and Gadzhiev 1982); Karabulagh (in Dzhebrailsky Uezd) (Birula 1917a; Tertyshnikov 1949), year? (K. S.), 1 juv., ZIN 274; Karadzhadagh (Birula 1911a, 1917a), 6.04.1909 (L. Berg and A. Shelkovnikov), 1 ♂, 2 ♀, ZIN - 270; Kelbadzhinsky District (Yusubov and Gadzhiev 1982); Khanlar, 8.05.1986 (P. M. Dunin), 2 ♂, 6 ♀, 3 juv.,



ZM - Tb - 528; Kirovabad (= Jelizavetpol') (Birula 1904b, 1911b; Tertyshnikov 1949); year ? (A. Shelkovnikov), 3 juv., ZIN - 264; 1841 (Frick), 1 juv., ZIN - 266; 04.1909 (Volchanetsky), 1 ♂, 4 juv., ZIN 269; Kirovabadsky District (Yusubov and Gadzhiev 1982); Isle Kumani (Yusubov 1985); Kyalvaz (in Lenkoran') (Birula 1911b), 25.05.1898 (K. S.), 3 ♀, ZIN - 249; 21.05.1909 (A. N. Kirichenko) 1 ♂, 3 ♀, ZIN 253; 20.05.1909 (id.), 1 ♂, 1 ♀, ZIN - 257; Isle Los' (Yusubov 1985); Lyulakeran' (in Lenkoran'), 3.08.1932 (D. Znoiko), 1 juv., ZIN - 1773a; Post Maralyan (on Araxes) (Birula 1917a; Tertyshnikov 1949), 06.1894 (K. S.), 3 ♂, 1 ♀, ZIN - 276; Marayurt (in Lenkoran') (Birula 1912); Martuninsky District (Yusubov and Gadzhiev 1982); Meidanadzhi (Birula 1912, 1917a); Milskeya Steppe (in "Dzhevatsky Uezd") (Birula 1912, 1917a); Mistan (in Lenkoran') (Birula 1911b), 20.05.1909 (A. N. Kirichenko), 1 ♀, ZIN - 252; Isle Nargin' (Birula 1911b, 1917b), 18.06.1906 (L. Bianchi), 1 ♀, 1 juv., ZIN - 247; Nikolayevka (in Northern Talysh) (Birula 1912, 1917a); Isle Oblivnoi (Birula 1917a), 22.04.1910 (N. Panov), 3 ♂, 7 ♀, ZIN - 246; Oirankala (Birula 1912, 1917a); Otuziki (Birula 1912, 1917a); Pirkhanaga (Birula 1912, 1917a; Tertyshnikov 1949); Cape Pirsagat, 8.05.1906 (N. Panov), 6 ♂, 25 ♀, 5 juv., ZIN - 258; Resano (in Lenkoran') (Birula 1911b), 22.05.1909 (A. N. Kirichenko), 2 ♀, 1 juv., ZIN - 254; Saraitapa (Birula 1912, 1917b); Shakhbuzsky District (Yusubov and Gadzhiev 1982); Shamkherky District (Yusubov and Gadzhiev 1982); between Shin and Ambarchai (Birula 1917a), 26.07.1900 (A. Z.), 2 ♀, 1 juv., ZM - Tb 170; Shirinkum Sands (Birula 1912, 1917b); Isle Svyatoi (Birula 1917a), 1910 (N. Panov), 1 ♀, 21 pull., ZIN - 242; 1.09.1910 (id.), 2 ♂, 5 ♀, 4 juv., ZIN - 243; 07.1902 (K. Shaposhnikov), 9 ♂, 17 ♀, 2 juv., ZIN - 1306; Tatoni, 4.08.1932 (D. Znoiko), 1 juv., ZIN - 1773b; Tekledagh' (in Lenkoran') Birula 1912, 1917b; Turianchaisky Reserve, 13.05.1986 (P. M. Dunin), 2 ♂, 1 ♀, 1 juv., ZM - Tb - 527; Tsernavor Mt., 760 m (Birula 1917a), 1.07.1901 (R. Schmidt), 2 ♂, 1 ♀, 5 juv., ZIN - 267; Zakataly (Birula 1912, 1917a; Tertyshnikov 1949), 7.08.1906 (from Tiflis Museum), 2 ♂, 2 ♀, 2 juv., ZIN - 277; 3.08.1900 (A. Z.), 2 ♀, ZM - Tb 136; Isle Zhiloi (Yusubov 1985); "Zuvand" (Birula 1912; Tertyshnikov 1949); 5.08.1932 (D. Znoiko), 2 ♂, 1 ♀, 1 juv., ZIN - 1777. Nagorno Karabakhskaya Autonomous Region (AO). Khaptagoi (Birula 1912, 1917a); Shusha (Birula 1912, 1917a; Bogachov 1951); 17.06.1933 (F. Lukyanovich), 2 juv., ZIN - 176; Nakhichevanskaya ASSR. Bichenek (= Bechenagh) (Birula 1917a); year? (Tikhomirov), 2 ♂, 1 ♀, ZM - Tb - 51; Darydagh Mt (Yusubov 1977); Dasta (= Dosty) (Birula 1912, 1917b; Tertyshnikov 1949); Diza (= Dizar), 29.07.1933 (D. Znoiko), 1 juv., ZIN - 1604; 20.07.1933 (id.), 1 juv., ZIN - 1761; 24.07.1933 (id.), 1 ♀, ZIN - 1774; Dzhul'fa, 16.04.1917 (F. A. Byalynitsky - Birula), 1 ♂, ZIN 307; 1982 (N. V.) 4 ♂, 3 ♀, ZM - Tb 185; Dzhul'finski District (Yusubov and Gadzhiev 1982); Enidimidzh (Yusubov 1977); Plain Gilanskaya (Yusubov 1977); Ilanlydagh, 21-22.05.1957 (L. V. Zimina), 1 ♂, 1 ♀, ZM - Tb 453; Ilyichevsky District (Khalilova and Monina 1973; Yusubov and Gadzhiev 1982); Karmalinovka (Birula 1917a);

Nakhichevan' (Birula 1905b, 1917a; Tertyshnikov 1949); Yusubov 1977), 05.1982 (N. V.), 2 ♂, 6 ♀, ZM - Tb - 191; 1982 (id.), 12 ♂, 4 ♀, 3 juv., ZM - Tb - 189; 1967 (Exped. Inst. Geogr. Ac. Sc. USSR), 7 ♂, 8 ♀, ZM - Tb - 432; Nizhne-Siarsky Post (near Ordubad) (Birula 1912, 1917a); Nyusnyus (Yusubov 1977); Ordubad (Birula 1905b, 1911b, 1912, 1917a; Yusubov 1977); 10.07.1904 (E. König), 2 ♀, 1 juv., ZIN - 305; 16.04.1956 (L. Zhiltsova), 1 ♀, ZIN - 1850; Ordubadsky District (Yusubov and Gadzhiev 1982); Vaikhyr, 23.04.1983 (V. V. Yanushev), 1 ♂, ZIN - 1781.

Georgia. Abastumani, 1899 (F.A. Byalynitsky - Birula), 1 ♀, ZIN - 291; Akhaltsikhe (Birula 1912); Ateni (Radde 1899; Birula 1905a, 1917a); Atskuri (= Atskur) (L. Koch 1878; Birula 1896, 1917a); Borzhomi (Radde 1899; Birula 1896, 1900c, 1904b, 1905b, 1912, 1917a), 1893 (S. Alferaki), 1 juv., ZIN - 289, 10.06.1912 (L. Mlokosevich), 1 ♂, ZIN - 295; 07.1889 (A. I. Petrunkevich), 1 ♂, ZM - Tb - 43; Gogasheni (Leister 1933); Kaspi, 1982 (N. V.), 1 ♂, 1 ♀, ZM - Tb - 450; 1980 (id.), 3 ♂, 5 ♀, 2 juv., ZM - Tb - 529; Khrami River (Radde 1899; Birula 1905b, 1917a); Klych River (Kobakhidze 1960); Lagodekhi (Birula 1917a; Tertyshnikov 1949), 1887 (L. Mlokosevich), 3 ♀, ZIN - 290; Lake Lisi, 11.04.1910 (K. S.), 2 ♀, ZIN - 1770; Mtskheta (Birula 1912); Tbilisi (= Tiflis) (Radde 1899; Birula 1900c, 1905b, 1912, 1917a; Kobakhidze 1947, 1950, 1960), year? (collector?), 1 ♂, 1 ♀, ZIN - 284; year? (Sievers), 1 ♀, ZIN - 285; 09.1875 (K. Kessler), 3 ♂, 4 ♀, 4 juv., ZIN - 286; 9.09.1875 (id.), 25 juv., ZIN 287; 27.03.1894 (K. S.), 1 juv., ZIN - 288; 3.05.1915 (id.), 1 ♂, ZIN 292; 05.1913 (id.), 2 juv., ZIN - 293; 11.04.1910 (id.), 2 juv., ZIN - 294; 19.04.1909 (id.), 1 ♂, 1 ♀, 2 juv., ZIN - 296; 3-6.05.1909 (id.), 2 ♂, 1 juv., ZIN - 297; 9.08.1912 (G. B. Bugdanov), 1 juv., ZIN - 298; 24.04.1907 (K. S.), 2 ♀, 2 juv., ZIN - 300; 29.04.1907 (id.), 1 ♂, 2 ♀, ZIN - 1515; 12.04.1914 (P. Andrievsky), 1 ♂, 2 ♀, ZIN - 1601; 04.1888 (Zhמידzinovch and K. A. Gorbachov), 3 ♀, ZM - Tb - 39; year? (P. Freiberg), 1 ♂, 2 ♀, ZM - Tb - 45; 1888 (K. A. Gorbachov), 1 ♀, ZM - Tb - 46; 1888 (id.), 3 ♀, ZM - Tb - 47; 13.05.1899 (A. Z.), 2 ♂, ZM - Tb - 121; 10.05.1894 (id.), 1 ♂, 1 juv., ZM - Tb - 161; 1896 (S. Zakharov), 1 ♀, ZM - Tb - 167; 14.06.1898 (id.), 1 ♂, 6 ♀, ZM - Tb - 168; 1899 (A. Z.), 1 ♀, ZM - Tb - 172; 14.09.1900 (id.), 1 ♀, 1 juv., ZM - Tb - 433; 15.07.1973 (Yu. B.), 4 ♂, 3 ♀, 3 juv., ZIN - 1601; Tsteli-Tskharo, 1982 (N. V.), 1 ♀, ZM Tb - 196; Vashlovaansky Reserve, 500 - 580 m, 7-9.05.1983 (S.I. Golovach), 1 ♂, ZIN - 1782.

Abkhasia (?). Sukhumi (= Sukhum) (Birula 1900c) year?, (M. V. Nasonov), 1 ♀, 3 juv., ZM - Tb - 52, LOC. DUB.; "Abkhazia", year? D. K. Glazunov), 1 juv., ZIN 278, LOC. DUB. South Osetia. Ordzhonikidze, 1969 - 72 (Yu. B.), 7 ♂, 5 ♀, 5 juv., ZIN - 1606; Shulauri (= Shulavery), year? (Shaposhnikov), 1 ♂, 2 ♀, 3 juv., ZIN - 1305. Russia (?). Adygeyskaya Autonomous Region (?): Maikop, 1912 (V. Zykov), 1 ♀, ZIN - 283, LOC. DUB. Daghestan (?): Gunib (Birula 1903b), 08.1900 (collector?), 1 ♂, 1 ♀, ZIN - 262, LOC. DUB.

TURKEY, IRAN.

Notes. 1. Terra typica for nominal subspecies, not designated by C.

L. Koch, was established by Birula (1917a: 35) from environs of Tbilisi (= Tiflis), Georgia.

2. Birula (1917a: 34) had separated there races ("Natio") within nominal subspecies: nat. *eupeus* C. Koch, nat. *armeniacus* Birula 1917 and nat. *talyshensis* Birula 1917. Status of these races was not revised later.

3. All unpublished collections from Caucasus are placed here within this subspecies.

### 1b. *M. e. thersites* (C. L. Koch 1839)

#### Synonymy

*Androctonus thersites* C. Koch 1839: 51 (patria ignota, type unknown)

*Buthus eupeus forma* Birula 1896: 240 (in part).

*Buthus eupeus thersites* —. Kraepelin 1899: 24; Birula 1900a: 359 (= forma in part), 1903a: 68, 1904a: 20, 1904b: 29, 1905a: 123, 1905b: 122, 1906: 45, tab. 5, 1911b: 164; Pavlovsky 1916a: 35; Birula 1917a: 47, 1917b: XVI; Moritz 1922: 214; Birula 1925: 95; Shnitnikov 1925: 147; Birula 1928: 338 (= ssp. *volgensis*, pro natio); Leister 1933: 342; Pavlovsky 1934: 200; Shnitnikov 1934: 28; Werner 1936c: 204; Roewer 1943: 206.

*Buthus eupeus volgensis* Birula 1917a: 41 (nec Birula 1925); NOMEN NUDUM (description was not published).

*Buthus eupeus volgensis* Birula 1925: 96 /types: Yenotayevsky District, left beach of Akhtuba River, higher from Selitryanoye, 27.04.1910 (V. Chernavin), 2 ♀, ZIN - 418/; Leister 1933: 342.

*Buthus eupeus caspius* Birula in Pavlovsky 1934: 200, NOMEN NUDUM (description was not published).

*Mesobuthus eupeus thersites* —. Vachon 1958b: 155, 1966: 213; Habibi 1971: 441; Pérez 1974: 26; Fet 1980: 224; Vasilyev et al., 1981: 74; Orlov and Vasilyev 1983b: 62.

*Mesobuthus eupeus volgensis* —. Vachon 1958b: 155; Orlov and Vasilyev 1983b: 62.

#### Distribution

Kazakhstan. Aktyubinsk Region: Bolshie Barsuki Sands, year? (E. S. Ostanin), 1 ♀, ZIN - 1747; Emba, 14.04.1909 (E. Fischer), 1 ♀, ZIN 432. Alma-Ata Region: "30 km West from Bakanas", 04-05.1973 (N. Ivleva), 1 ♀, 1 juv., ZM - Tb - 496; Lake Balkhash shore between Ili and Karatov Rivers, 05.1913 (V. Sh.), 1 ♂, 1 ♀, ZIN - 1817; Ili River (Birula 1906), 1909 (V. Sh.), 1 ♀, ZIN - 1618; 1906 (L. S. Berg), 2 juv., ZM - Tb - 127; 4.05.1953 (collector?), 2 juv., ZM - Tb - 423; "Between Iliisk and Bakanas", 1-5.05.1913 (V.Sh.), 1 ♂, ZIN - 1617; Lake Kapchagai Reservoir (Kashnikova 1982), 16.09.1984 (A. B. Nenilin and S. V. Ovchinnikov), 1 ♂, ZM - Tb - 523; "Kopalsky District", 9.03.1900 (V. Sh.), 1 ♂, 1 ♀, 5 juv., ZIN 1615; 05.1913 (id.), 2 ♂, 2 ♀, ZIN - 1616; Kyzkuduk (right beach of Ili River near Bakanas) (Birula 1906); Ostashkino (on B. Almatinka River), 1928 (V. Sh.) 1 ♂, 1 ♀, ZIN 1737; Tau-Chilik-Uryukty, 3.08.1919 (id.), 2 ♀, ZIN - 1752; Turaigyr Mts (Kashnikova 1982), 06.1912

(V. Sh.), 3 juv., ZIN - 1620. Chimkent Region: environs of Chimkent, Kazgurt, 3.07.1936 (E. Tsvetkova), 1♂, 1♀, ZM - Tb - 447; Dzhilga, 11-18.08.1985. (D. V. Logunov), 1♂, ZIN - 1730; Golodnaya Steppe (railway station), 6.04.1905 (A. Matthiesen), 2♀, ZIN - 458; Golodnaya Steppe (Birula 1904b); Karatau Mts, Pass Bukuitau, 29.06.1931 (N. Pavlov), 3♀, ZM - Tb - 126; "border of Kizylkum Desert and Golodnaya Steppe, 15 verst from Syrdarya", 27.03-25.04.1903 (G. Jakobson), 2♂, 3♀, 4 juv., ZIN - 456; 1903 (id.), 1♂, 14 juv., ZIN 457; Merkensky District, 5.09.1932 (I. Chetyrkin), 1♂ ZIN - 1845; Musabaikuduk Well (Birula 1911b), 24.07.1907 (N. Z.), 4♂, 1♀, 2 juv., ZIN - 498; Pakhtaaral (Dubinin 1946, 1954); Saryagach, 05-06.1925 (V. D. Prinada), 1 juv., ZIN - 1608; Topkuduk Well (Birula 1911b), 26.07.1907 (N. Z.) 1♂, 1♀, ZIN - 497. Dzhambul Region: Isle Basaral (Birula 1906) 1.08.1903 (L. S. Berg), 1♀, ZM - Tb - 169; Burubaital (SW shore of Lake Balkhash), 13.08.1934 (B. A. Vinogradov), 1♀, ZIN - 1771; Dzhambul (= Aulie-Ata), 06.1909 (E. Fischer) 1 pul., ZIN - 478; Georgievka, 22.05.1984 (S. V. Ovchinnikov), 1♀, ZM - Tb - 522; Karabastau, 25-30.06.1924 (A. Martynov), 1 ad., ZIN - 1134; Karatyubek (West shore of Lake Balkhash) 08.1903 (L. S. Berg), 1♂, ZM - Tb - 120; Kargalykul' (Murunkul') Well (in Muyunkum Sands), 15-24.05.1910 (A. N. Kirichenko), 3♀, ZIN 474; Kashkanteniz (West shore of Lake Balkhash) (Birula 1906), 3.08.1903 (L. S. Berg), 2♀, 4 juv., ZM - Tb - 96; 3.08.1903 (id.), 1♀, ZM - Tb - 107; Muyunkum Sands, "10-12 verst North from Chu River" (Birula 1911b); "15-20 verst from confluence of Chu and Kuragata Rivers, 10-12 verst southwest from Chu River", 11-12.04.1904 (V. Abramov and A. Begak), 4♂, 5♀, 2 juv., ZIN - 473; Mynaral (West shore of Lake Balkhash) Birula 1906; 1903 (L. S. Berg), 1♂, ZN - Tb - 139; Isles Ucharal (in Lake Balkhash) (Birula 1906). East-Kazakhstan Region: Zaisansky Karatal, 08.1982 (collector?), 2 juv., ZM - Tb - 497. Guryev Region: Lake Inder (Birula 1911b), 06.1907 (B. Uvarov), 4♂, 3♀, ZIN - 430; 11.07.1909 (id.) 4♂, 2♀, ZIN - 431; Inderborskoye and environs, 1986 (A. V. Ponomarev), 10♂, 16♀, ZM - Tb - 509; ZM - Tb - 517; Kalmykovo, 17.07.1951 (S. I. Keleinikova), 1♂, 1 juv., ZM - Tb - 429; Kul'sary, 1981 (N. V.), 1♂, 1♀, ZM - Tb - 195; Makhambet and environs, 26.05.1986 (A. V. Ponomarev), 1♀, 1 juv., ZM - Tb - 507; 16.09.1986 (id.), 2 juv., ZM - Tb - 508. Kzyl-Orda Region: Akkum (Birula 1911b, 9.07.1907 (N. Z.), 1 pul., ZIN - 505; "Aral Sea", 3.09.1920 (A. Bykov), 1 juv., ZIN 1296; "North-east shore of Aral Sea" (Birula 1911b); Isle Barsa-Kel'mes (Birula 1906), 2-12.07.1928 (M. V. Nazarov), 29♂, 12♀, 10 juv., ZIN - 1138; 1928 (collector?), 10♂, 2♀, 2 juv., ZIN - 1762; 05.1982 (T. V. Pavlenko), 6♂, 7♀, ZIN - 1772 (part); 05.1983 (id.) 4♀, ZIN - 1772 (part); 04-09.1982 (D. D. Piryulin), 3♂, 7♀, 1 juv., ZIN - 1772 (part); 18.04.1982 (E. Duisenbaev), 1♂, ZIN - 1772 (part); 10.04.1982 (D. D. Piryulin), 1♀, ZM - Tb - 498; 6.05.1982 (T. V. Pavlenko), 2♀, ZM - Tb - 499; 15.05.1982 (id.), 1♀, ZM - Tb - 500; 21.05.1982 (id.), 2♂, ZM - Tb 501; Dzhulek (in Baigakum Sands) (Birula 1911b; Pavlovsky 1916a), 4.05.1905 (Yu. Beckmann), 3♀, ZIN - 489; 20.05.1905 (id.), 1♂, 2♀, 2 pul., ZIN - 490; 6-15.06.1907 (D.

Glazunov), 1♂, 1♀, ZIN - 491; 1521.06.1907 (id.), 3♀, ZIN - 492; 12.06.1907 (id.), 1♂, ZIN 483; 15.06.1987 (id.), 1♀, ZIN - 494; 27.08.1907 (P. Antonov), 1♂, ZIN - 495; 2-6.08.1907 (id.), 1♂, ZIN - 496; Karmakchi (Birula 1911b), 17.04.1905 (Yu. Beckmann), 2♀, pulli, ZIN - 486; Kzyl-Orda (= Perovsk) (Birula 1911b), 04.1905 (id.), 3 juv., ZIN - 487; 23.04.1905 (id.), 1 pul., ZIN - 488; lower Sarysu River, 11.07.1947 (collector?), 1♀, ZM - Tb - 405; Turanglysai (in Paskevich Bay, North shore of Aral Sea) (Birula 1911b), 13.05.1906 (L. S. Berg), 1♂, 1♀, ZIN - 429; Cape Urga (in Aral Sea), 17.05.1928 (M. Markun), 1♂, 8♀, ZIN - 1137; 28.05.1925 (L. S. Berg), 1♂, 5♀, ZIN - 1733; Isle Vozrozhdeniya (Isle Nicolas I) (Birula 1906), 26.08.1901 (Alexandrov), 1♂, 2♀, ZIN - 1734. Mangyshlak Region: Ashche-Airyuk (in Ustyurt), 22.06.1926 (Burachek), 1♂, 1♀, ZIN - 1130; "East shore of Caspian Sea, between Cape Sagyndyk and Cape Karamandy", 13.05.1966 (Yu. Kabanov), 19♂, 12♀, ZM - Tb - 418; Karatau, 06.1974 (M. Bogdanov), 1♂, 1♀, 2 juv., ZIN - 423; Kendyuak (Eastern "chink" of Ustyurt), 06.1937 (G. V. Nikolsky), 7♀, 1 juv., ZM - Tb - 200; Mangyshlak Peninsula (Birula 1904b), 1877 (K. Bär), 1♂, ZIN - 420; 1864 (Göbel), 1♂, ZIN 421; 1892 (Sobolev), 7♀, ZIN - 422; year? (K. Rossikow), 4♂, 1♀, 1 juv., ZIN - 1758; 9.05.1966 (collector?) 2♂, 1♀, ZM - Tb - 495; Molkuduk (North from Ustyurt Town), 14.05.1926 (B. Borgeman), 1♂, ZIN - 1131; NovoAlexandrovskeye (ruined fort), 1840 (A. Lehman), 1♂, 6♀, ZIN - 426; "Ustyurt" (Birula 1904b), year? (Basiner), 2♂, 1 juv., ZIN - 424; year? (A. Keyserling), 1♂, ZIN - 425; 1982 (N. V. ), 3♂, ZM - Tb - 182; 1981 (id.), 7♂, 5♀, ZM - Tb - 192. Semipalatinsk Region: Ayaguz (= Sergiopol') District, 1872 (Kushakevich), 1♂, ZIN - 462; "the way from Zaisan Lake to Kokpekty", 1887 (Suvortsev), 1♂, ZIN - 461; Tarbagatai Mts (Birula 1904a, 1904b). Taldy-Kurgan Region: Akkul' Plain, 1915 (V. Sh.), 1 juv., ZIN 1621; Novo-Antonovka, 1912 (id.), 1♀, ZIN - 1619; "South from Lake Alakol' between Rgaity River and Emil'su River", 11.08.1915 (id.), 3♂, 3♀, 3 juv., ZIN - 1077; Panfilov (= Dzharkent), 1896 (Ingenitsky), 1♂, ZIN - 463.

Kirghizia. Frunze District: Kegeti, year? (Sarkisova) 1 juv., ZM - Tb - 443; Issyk-Kul' Region: Akulen, 07.1953 (N. A. Filippova), 6♂, 4♀, 1 juv., ZM - Tb - 426; Barskaun River (Schmidt 1896), 30.07.1892 (P. Yu. Schmidt), 1♂, ZIN - 467; Boomskeye (= Buamskeye) Canyon (Schmidt 1896), 9.08.1892 (P. Yu. Schmidt), 1♂, ZIN - 466; 22.08.1953 (D. V. Panfilov), 1♀, 3 juv., ZM - Tb - 422; 21.07.1938 (E. Tsvetkova), 1 juv., ZM - Tb - 458; Kutymaldy, 27-31.07.1910 (A. N. Kirichenko), 2♀, ZIN - 464; 11.06.1901 (Kutsenko), 8♂, 5♀, 6 juv., ZIN - 465; Przhevalsky District, year? (D. Pedashenko), 4♂, 16♀, 6 juv., ZIN 470; Rybachye, spring 1928 (Issyk-Kul' Exped. Ac. Sci. USSR), 1♀, ZIN - 1135; 11.07.1928 (id.), 1♀, ZIN - 1136. Osh Region: Osh, 1878 (Kushakevich), 1♀, ZIN - 514; Sary-Chelek Reserve, Arkit, 06.1952 (A. N. Zhelokhovtsev), 2♂, ZM - Tb - 427. Talas Region: Ichkeletoo, 1600 m. 2.06.1916 (Vel'tishchev), 1♂, 1♀, ZIN - 1754; Kenkol' (in Kirghizsky Range), 18.07.1930 (L.

Bianchi), 1 ♀, ZIN - 1755; Kirghizsky (= Alexandrovsky) Range, 5000', 30 verst from Dzhambul (= Aulie-Ata), 21.04.1910 (E. Kischer), 5 ♀, ZIN - 480; Leninpol' (= Nikolaipol'), 10.06.1907 (Yu. Beckmann), 1 ♂, 2 ♀, ZIN 477; 27.04.1909 (id.), 1 ♂, 1 juv., ZIN - 479; 05.1906 (id.), 11 juv. ZIN - 482; 06.1907 (id.), 2 ♂, 2 ♀, ZIN - 483; 11.10.1907 (id.), 1 ♂, 1 ♀, ZIN - 484; Talas (= Dmitrovka), 23.08.1905 (V. Abramov and A. Begak), 2 ♀, 1 pul., ZIN - 475; 28.08.1905 (id.), 2 ♂, 1 ♀, 2 juv. - ZIN 476; Talas River, 05.1908 (E. Fischer), 1 ♀, ZIN 481; Tegerek River (South slope of Kirghizsky Range), 24.06.1913 (V. Chernavin), 1 ♂, ZIN - 485; Tuyun River (in Kirghizsky Range), 16.07.1931 (V. Sh.), 1 ♀, 1 juv., ZIN - 1741.

Russia. Astrakhan' Region: "left beach of Volga River, Kalmytskaya Steppe, Cape Bashkul' on Caspian Sea shore", 15.07.1927 (E. Orlov), 1 ♂, ZIN - 419; Selitryanoe, 27.04.1910 (V. Chernavin), 2 ♀, ZIN - 418. Orenburgh Region: Guberli Mts (Birula 1904a), year? (O. Gertz), 7 ♀, ZIN - 1127.

Tadzhikistan. Dushanbe Region: Chil'dara, 05.1898 (N.B.), 1 ♀, ZM - Tb - 40. Kulyab Region: Kyzylsu (post on Kyzylsu River), 24.09.1907 (P. K. Khorev), 1 ♀, ZIN - 435. Kurgant'yube Region: Gandzhino, 9.06.1961 (Yu. B.), 1 ♀, ZIN - 1542; Kabodien, 13.06.1910 (N. Z.), 3 ♂, 1 juv. ZIN - 445; 14.06.1910 (id.), 2 ♀, ZIN - 1767; Sumbula (the way from Kyzylkala to Shaartuz), 18.05.1985 (Exped. Inst. Zool. Acad. Sc. Ukr. SSR) 1 ♀, ZM - Tb - 520. Leninabad Region: Adrasman, 3.05.1972 (A. B. Mukhitdinov) 1 ♀, ZIN - 1728; Bekabad, 15.05.1969 (Yu. B.), 4 ♀, ZIN - 1584; Chorku (= Charku) (Birula 1911b); 5.07.1908 (N. Z.), 1 ♀, ZIN - 515; Isfara, 27.04.1974 (Yu. B.), 1 ♀, ZIN - 1595; Kansai, summer 1930 (E. Tisengausen), 1 ♂, ZIN - 1739; Kuipangaz, 21-24.05.1969 (Yu. B.), 2 ♀, ZIN - 1582, Kshtut, 27.05.1908 (D. M. Fedotov), 1 ♂, ZIN 459; 05.1898 (N. B.), 2 ♂, ZM - Tb - 42; Leninabad (= Khodzhent) (Birula 1911b), 8-12.04.1908 (N. Z.), 3 ♂, 7 ♀, 8 juv., ZIN - 454; 14.04.1908 (id.), 1 pull., ZIN - 455; Pendzhikent, 05.1898 (N. B.), 1 ♀, ZM - Tb - 44; Utkansai, 05-06.1915 (R. Bub) 1 ♂, 3 ♀, ZIN 510; Vorukh, 23.05.1974 (Yu. B.), 1 ♂ 1 ♀, 2 juv., ZIN - 1597; year? (collector?), 1 ♂, 2 ♀, ZM - Tb - 1193.

Turkmenia. Ashkhabad Region: Akhalteke (Pavlovsky 1934), 1896 (K. Ahnger), 1 ♀, ZIN - 188; Aktepe, 2.07.1904 (S. I. Bilkevich), 1 ♂, ZIN - 199; Anau (Pavlovsky 1934), 21.04.1896 (P. A. Varentsov), 3 juv., ZIN - 190; Archman, 7.05.1974 (Yu. B.), 4 ♂, 5 ♀, ZIN - 1547; 1.06.1925 (M. K. Laptev), 1 ♀, ZIN - 1611; Ashkhabad (= Askhabad) (Pavlovsky 1934; Vlasov 1937a, 1937b), year? (A. P. Semyonov-Tyan-Shansky), 2 ♂, 2 ♀, ZIN - 185; 30.03.1896 (P. A. Varentsov), 1 ♀, ZIN - 189; 6.06.1895 (id.), 1 ♀, ZIN - 191; 26.05.1904 (S. I. Bilkevich), 1 ♂, ZIN - 198; 11.05.1928 (V. Gussakovski), 1 ♀, 1 juv., ZIN - 1132; 5.05.1928 (id.), 2 ♀, ZIN - 1133; 16.06.1905 (K. Ahnger), 1 ♀, ZIN - 1736; 19.04.1909 (id.), 3 juv., ZIN - 1814; year? (id.), 1 juv., ZIN - 1815; 8.06.1906 (id.), 1 ♂, 1 ♀, ZIN 1821; year? (id.), 1 ♀, ZIN - 1822; Bami, 1.05.1898 (E. Jahlberi), 1 ♀, ZIN - 192; Berzengi, 05.1978 (G. T. Kuznetsov), 1 ♂, 2 juv., ZM - Tb - 286;

Bikrova, 03.1977 (G. T. Kuznetsov), 1 ♀, ZM - Tb - 285; Birleshik-3 (id., pers. comm.): Cheperli, 2.02.1984 (I. A. Ushakov), 1 ♀, ZM - Tb - 472; Chuli, 26.09.1930 (L. Bianchi), 2 ♂, ZIN 1759; 26.09.1930 (id.), 2 ♀, ZIN - 1783; 19.04.1985 (Exped. Inst. Zool. Ac. Sci. Ukr. SSR), 1 ♂, 6 ♀, ZM - Tb - 296; Dushak Mt (see also Kheirabad), 8.08.1985 (A. Zykov), 2 ♂, 2 ♀, ZM - Tb - 291; Firyuza (Pavlovsky 1934), 22.06.1904 (S. I. Bilkevich), 1 ♂, ZIN - 197; 3.04.1904 and 6.04.1905 (K. Ahnger), 1 ♀, 2 juv., ZIN - 1816; 25.09.1930 (L. Bianchi), 1 ♀, ZIN - 1818; Gaudan (Pavlovsky 1934), 1897 (Filippovich), 1 ♂, 12 ♀, ZIN - 187; year? (L. A. Länz), 1 ♂, 3 ♀, ZIN - 212; 12.05.1985 (Exped. Inst. Zool. Ac. Sci. Ukr. SSR), 2 ♀, ZM - Tb - 298; Germab, 6.05.1971 (Yu. B.), 4 ♂, 21 ♀, 4 juv., ZIN - 1551; 8.05.1971 (id.), 5 ♂, 17 ♀, 4 juv., ZIN 1552; Imarat (20 km North from Saivan), 6.05.1985 (Exped. Inst. Zool. Ac. Sci. Ukr. SSR.), 1 ♂, 5 ♀, ZM - Tb - 297; Ipaikala 23.05.1984 (V. F.), 1 juv., ZM - Tb - 269; Kaakhka (Pavlovsky 1934), 05.1908 (M. Sizov), 1 ♂, ZIN 194; 12.05.1971 (Yu. B.), 1 juv., ZIN - 1545; 9.05.1974 (id.), 1 ♂, 3 ♀, ZIN - 1591; 21.04.1985 (S. S.), 2 ♂, 7 ♀, 3 juv., ZM - Tb - 494; Kelyata, 19.04.1974 (Yu. B.), 1 ♂, 7 ♀, 1 juv., ZIN - 1564; Kheirabad (on Dushak Mt), 20.04.1985 (S. S.), 2 ♂, 7 ♀, 3 juv., ZM - Tb - 504; Lake Kopetdaghskoye Reservoir (G. T. Kuznetsov, pers. comm.); Kovata, 5.02.1982 (K. M.), 1 ♀, ZM - Tb - 278; Lake Kurtly Reservoir (G. T. Kuznetsov, pers. comm.); Mollakurban (Pavlovsky 1934), 30.09.1929 (Ya. P. Vlasov), 1 ♂, ZIN - 1304; Nisa (ruins), 3.05.1985 (Exped. Inst. Zool. Ac. Sci. Ukr. SSR), 1 ♀, ZM - Tb - 293; Nokhur, 25.06.1923 (collector?), 1 juv., ZM - Tb - 425; Pervomaisky, 18.04.1985 (S. S.), 1 ♂, 5 ♀, 2 juv., ZM - Tb - 493; Serakhs, 26.04.1985 (id.), 4 ♀, 4 juv., ZM - Tb - 505; Tedzhen (Pavlovsky 1934), 10-28.06.1904 (K. Arris), 1 ♀, 2 juv., ZIN - 195; Tedzhenstroi (G. T. Kuznetsov, pers. comm.); Verkhnee Skobelevo (= Zinov'yevka), 27.09.1930 (L. Bianchi), 1 ♀, 1 juv., ZIN - 1749. Chardzhou Region: Char-Charagasy, 8.05.1910 (N. Z.), 5 juv., ZIN - 439; Darganata, 14.07.1910 (E. Fisher), 1 ♀, ZIN - 1082; Repetek (Pavlovsky 1934; Fet 1980), 20.02.1905 (E. Fisher), 1 ♂, ZIN - 200; 30.04.1905 (id.) 1 ♂, ZIN - 207; 07.1904 (id.), 1 ♀, ZIN - 208; 08.1904 (id.), 1 ♂, ZIN - 209; 27.07.1907 (Dolgoplov), 1 ♂, ZIN - 210; 17.07.1915 (S. Tsarevsky), 1 ♂, ZIN - 213; 09-10.1970 and 04-05.1971 (O. R. Sabirova), 3 ♂, 5 ♀, 4 juv., ZIN - 1600; 04.1968 (V. I. Kuznetsov), 1 ♂, 2 ♀, ZM - Tb - 290; 22.08.1972 (id.), 1 ♀, 1 juv., ZM - Tb - 521; Khodzha'il'ata, 11.05.1910 (N. Z.), 1 ♂, ZIN - 440. Krasnovodsk Region: Adzhidere (Pavlovsky 1934), 5-6.11.1926 (D. Denisov), 1 ♀, ZIN - 1125; 21-23.09.1926 (id.), 1 ♀, 1 juv., ZIN - 1746; Aidere (Radde 1899), 27.04.1971 (Yu. B.), 5 ♂, 17 ♀, 3 juv., ZIN - 1544; 6.08.1983 (V. F.), 1 ♂, 2 ♀, ZM - Tb - 270; 13.05.1982 (id.), 1 ♂, ZM - Tb - 271; 22-25.04.1981 (id.), 1 ♀, 1 juv., ZM - Tb - 272; 10-20.04.1980 (id.), 1 juv., ZM - Tb - 273; 16.03.1979 (id.), 2 juv., ZM - Tb - 274; 13-20.09.1978 (id.), 1 juv., ZM - Tb - 275; 6.04.1980 (id.), 3 juv., ZM - Tb - 276; 9.04.1980 (id.), 4 juv., ZM - Tb - 277; 15.07.1985 (id.), 1 ♂, ZM - Tb - 473; Akhchakuima, 14.05.1974

(Yu. B.), 1 ♂, 1 ♀, ZIN 1598; Arpaklen, 11.05.1971 (Yu. B.), 1 ♂, 22 ♀, ZIN - 1763; 9.05.1985 (Exped. Inst. Zool. Acad. Sci. Ukr. SSR), 1 ♀, ZM - Tb - 292; Bolshie Balkhany Mts (various points within) (Pavlovsky 1934): 1-2.04.1895 (S. I. Korzhinsky), 1 ♂, 2 ♀, 2 juv., ZIN - 193; 06-07.1924 (M. Laptev), 7 ♀, ZIN - 1742; 05.1985 (Kh. I. Atamuradov), 1 ♀, 2 juv., ZM - Tb - 475; *ibid.*, Northern slope, Uzunsu (or Uzunakar) Spring, 17.05.1974 (Yu. B.), 4 ♂, 16 ♀, 4 juv., ZIN - 1572; 17.05.1974 (*id.*), 5 ♂, 9 ♀, 4 juv., ZIN - 1745; *ibid.*, Northern slope of Shakhiburun Mt., 16.06.1934 (V. A. Popov), 1 ♀, ZIN - 1603; *ibid.*, Bashmygur, 23.06.1929 (V. S.), 2 ♂, 9 ♀, 1 juv., ZIN - 1744; *ibid.*, Koshagoi Spring, 23.06.1929 (*id.*), 1 ♂, 1 ♀, ZIN - 1748; Chandyr River, 24.04.1971 (Yu. B.), 1 ♂, 9 ♀, 4 juv., ZIN - 1557; Chandyro-Sumbarsky Range, 25.04.1971 (Yu. B.), 1 ♂, 4 ♀, ZIN - 1743; *ibid.*, Akderekdzhan Valley (Exped Inst. Zool. Act. Sci. Ukr. SSR), 3 ♂, 5 ♀, ZM - Tb - 295; Danata, 24.04.1974 (Yu. B.), 4 ♂, 9 ♀, 6 juv., ZIN - 1586; Lake Delili, 25-29.01.1981 (K. M.), 4 ♀, 1 juv., ZM - Tb - 267; Dzhebel (Pavlovsky 1934), 16.07.1905 (N. V. Nasonov), 2 ♀, ZIN - 193; 26.04.1921 (L. Moritz), 2 ♀, ZIN - 1124; 4.06.1934 (V. A. Popov), 2 juv., ZIN - 1812; Eishem (80 km SW from Iskander), 5.05.1985 (Exped. Inst. Zool. Ac. Sci. Ukr. SSR), 1 ♂, 5 ♀, 1 juv., ZM - Tb - 294; Kara-Kala, 5.05.1974 (Yu. B.), 1 ♂, 1 ♀, ZIN 1566; 24.05.1970 (*id.*), 4 ♂, 3 ♀, 6 juv., ZIN - 1575; 05.1960 (*id.*), 3 ♂, 3 ♀, ZIN - 1590; 10.08.1931 (A. Urusov), 1 ♂, ZIN - 1607; 20.08.1936 (L. Molchanov), 1 ♀, ZIN - 1623; 10.07.1931 (A. Urusov), 7 ♀, 6 juv., ZIN - 1764; 31.01.1982 (K. M.), 1 ♂, 1 ♀, 1 juv., ZM - Tb - 279; 15-21.06.1985 (T. V. Lukarevskaya), 1 juv., ZM - Tb - 280; 31. 0 7. 1981 (V. F.), 1 juv., ZM - Tb - 281; 05.1974 (V. M. Makeev), 2 ♂, 2 juv., ZM - Tb - 282; 1-7.10.1984 (T. V. Lukarevskaya), 1 ♂, 2 juv., ZM - Tb - 283; Karateniz (or Karabugaz, salt plain, 40 km north from Kizyl-Arvat), year? (Exped. ZIN), 1 ♀, ZIN - 1849; Kazandzhik, 20.04.1889 (A. P. Semyonov-Tyan-Shansky), 2 ♀, ZIN - 186; Kizyl-Arvat (Pavlovsky 1934), 1892 (A. Cheglov), 7 ♀, 11 juv., ZIN - 184; 04.1953 (collector?), 1 ♀, ZM - Tb - 421; Kizylkaya, 7.11.1982 (V. F.), 1 juv., ZM - Tb - 289; Khodzhakala (in Kizyl-Arvatsky District), 3.05.1971 (Yu. B.), 2 ♀, ZIN - 1567; Krasnovodsk (Radde 1899); Birula 1905b; Pavlovsky 1934), year? (Göbel), 18 ♀, ("Androctonus ornatus teste Kessler"), ZIN - 172, year? (*id.*), 2 pull., ZIN - 173; 1874 (O. Grimm), 3 ♂, ZIN - 174; year? (Radezky), 1 ♀, ZIN - 175; year? (P. Maximovich), 1 ♂, ZIN - 176; summer 1900 (K. Ahnger), 1 ♂, 2 ♀, ZIN - 177; 17.04.1912 (N. A. Solovkin), 3 ♀, ZIN - 178; 30.06.1904 (P. Maximovich), 1 ♂, ZIN - 179; year? (*id.*), 1 ♂, ZIN - 1613; 07.1905 (E. Fischer), 3 ♂, 2 ♀, ZIN - 180; 09.1904 (*id.*), 1 juv., ZIN - 181; 1-2.03.1905 (*id.*), 8 ♀, ZIN - 201; 3-5.05.1929 (V. S.), 1 juv., ZIN - 1609; 1925 (M. K. Laptev), 3 ♀, 2 juv., ZIN - 1622; Lappi (Pavlovsky 1934: Lapti), 3.11.1926 (D. Denisov), 1 ♀, ZIN - 1126; 31.10.31.1926 (*id.*), 1 juv., ZIN - 1757; Madau, 26-27.01.1982 (K. M.), 2 ♂, 5 ♀, 2 juv., ZM - Tb - 268; Mardagh, 24-30.09.1926 (D. Denisov), 1 juv., ZIN - 1760; Meshed-Misrian, 22.04.1971 (Yu. B.), 4 ♂, 10 ♀, 11 juv., ZIN - 1573; 2.05.1951 (D. M. Steinberg), 1 ♀, ZIN - 1846; Mollakara (Moritz 1922), 10.06.1934 (V. A. Popov), 1 ♂, ZIN - 1612;



Nebit-Dagh 8.11.1982 (V. F.), 1 juv. ZM - Tb - 288; Pereval (= Perevalnaya) (Pavlovsky 1934), 16-17.04.1903 (V. Fausek), 1 ♂, ZIN - 211; Sharlouk, 19.05.1971 (Yu. B.), 2 ♂, 2 ♀, ZIN - 1534; Syunt-Khassardaghsky Range (and Reserve), 26.04-1.05.1974 (Yu. B.), 8 ♂, 32 ♀, 9 juv., ZIN - 1550; 28.04-3.05.1974 (Yu. B.), 6 ♀, 12 juv., ZIN 1596; *ibid.*, Ioldere Valley, 06.1980 (V. F.), 1 ♀, ZM - Tb - 284; *ibid.*, Khydyrsuv Valley, 26.01.1984 (I. A. Ushakov), 1 ♀, 2 juv., ZM - Tb 299; Uzunada (in Krasnovodsk Bay), 20.09.1896 (L. B.), 2 ♀, ZIN 182; Yazkhan, 19.05.1971 (Yu. B.), 2 ♂, 2 ♀, ZIN - 1534. Mary Region: Badghyz Reserve /various points within: Adamulen, 24.04.1985 (S. S.), 2 ♀, 5 juv., ZM - Tb - 506; Akarcheshme, 30.04.1972 (Yu. B.), 6 ♂, 28 ♀, 10 juv., ZIN - 1530; 05.1974 (V. M. Makeev), 2 ♀, ZM - Tb - 491; 24.04.1985 (S. S.), 6 ♀, 1 juv., ZM - Tb - 492; Kepele, 12.04.1979 (Kh. I. Atamuradov), 1 ♀, 1 juv., ZM - Tb - 488; 03.1980 (R. I. Zlotin), 3 juv., ZM - Tb - 519; 25.04.1986 (S. I. Kalashnik), 1 juv., ZM - Tb 220; Kizyldzhar, 19-20.04.1972 (Yu. B.), 2 ♂, 5 ♀, 4 juv., ZIN - 1531; 16.04.1972 (*id.*), 1 juv., ZIN - 1594; 19-20.04.1972 (*id.*), 1 ♂, 3 ♀, 5 juv., ZIN - 1599; 21.04.1942 (V. G. Heptner), 1 ♀, ZM - Tb - 441; 14.03.1978 (V. A. Krivokhatsky), 1 juv., ZM - Tb - 481; 6.08.1975 (V. F.), 1 juv., ZM Tb - 482; 21.07.1975 (*id.*), 1 juv., ZM - Tb - 473; 30.07.1985 (*id.*), 1 ♂, ZM - Tb - 484; 18.09.1975 (V. I. Kuznetsov), 3 ♂, 1 ♀, ZM - Tb 485; Nardevanly (in Gyazgedyk Mts), 15.05.1972 (Yu. K. Gorelov), 1 ♀, ZM - Tb - 489; Pinkhancheshme, 23.04.1972 (Yu. B.), 1 ♂, 7 ♀, ZIN 1532; Pulikhatum, 13.05.1972 (Yu. K. Gorelov), 1 ♀, 2 juv., ZM - Tb - 486; 24. 04. 1985 (S.S.), 1 ♀, ZM - Tb - 487; Yeroilanduz Lake, 19.04.1972 (*id.*), 3 ♀, ZIN - 1732; 05.1976 (V. I. Kuznetsov), 1 juv., ZM - Tb - 477; 21.04.1978 (V. F.), 3 ♀, ZM - Tb - 478; 1.10.1979 (A. Yu. Cellarius), 3 ♀, ZM - Tb - 479; 28.09.1979 (*id.*), 1 ♂, ZM - Tb - 480; *ibid.*, Baschchenko Spring, 26.04.1985 (S. S.), 1 ♀, ZM - Tb - 476; Bairam-Ali (Pavlovsky 1934), 08-09.1908 (K. Demokidov), 8 ♂, 7 ♀, 8 juv., ZIN - 204; 8-10.09.1907 (*id.*), 2 ♂, 2 ♀, 18 juv., ZIN 205; 08-09.1908 (*id.*), 3 ♂, 2 ♀, ZIN - 1123; Dortkuyu (Pavlovsky 1934), 20.09.1896 (K. Ahnger), 3 ♂, ZIN - 206; Kushka (Pavlovsky 1934), 15-25.05.1904 (K. Arris), 1 ♂, 3 ♀, 3 juv., ZIN - 196; 20.06.1911 (I. Vasilyev), 1 ♂, 1 ♀, ZIN - 1614; Mary (G. T. Kuznetsov, pers. comm.); Morgunovka, 17.12.1977 (V. F.), 1 juv., ZM - Tb - 490; "Murghabskoye Imperial Manor" (near Bairan-Ali) (Pavlovsky 1934), 6.04.1912 (D. A. Smirnov), 1 ♀, ZIN - 202; 15.05.1912 (*id.*), 1 ♀, ZIN - 203; Yolotan' (Pavlovsky 1934), 27.06.1926 (V. Kizeritsky), 2 ♀, ZIN - 1128; 2-7.02.1926 (*id.*), 1 ♀, ZIN - 1129. Tashauz Region: Burkhlipurun, 13.05.1985 (L. A. Mitroshina), 1 juv., ZM - Tb - 238; Butentau, 27.09.1985 (*id.*), 1 juv., ZM - Tb - 226; Chirishly, 10.05.1983 (O. Soyunov), 1 juv., ZM - Tb - 259; Gangalykyr, 4.10.1983 (*id.*), 1 ♂, 2 juv., ZM - Tb - 261; Kankakyr, 20.04.1985 (*id.*), 2 juv., ZM - Tb - 262; Kaplankyrsky Reserve, 1984-1985 (L. A. Mitroshina), 3 ♂, 15 ♀, 33 juv., ZM - Tb - 221 - 225, 227 - 235, 237, 239 - 248, 250 - 251, 253 - 258 Shakhselem, 17.10.1985 (*id.*), 1 ♀, ZM - Tb - 236; 17.10.1985 (*id.*), 1 ♀, ZM - Tb - 249; 17.10.1985 (O. Soyunov), 2 juv., ZM - Tb 252; 18.10.1985

(id.), 6 juv., ZM - Tb - 260; 7.10.1983 (id.), 1 ♀, ZM - Tb - 263; 16.10.1985 (id.), 1 ♀, ZM - Tb - 264; 17.10.1985 (id.) 3 ♀, ZM Tb - 265; 19.10.1985 (id.), 1 juv., ZM - Tb - 266.

Uzbekistan. Karakalpakia: Aibugir, 22.08.1912 (L. Molchanov), 1 ♂, ZIN - 472; Cape Aksuat (at Aral Sea) (Birula 1911b); "shores of Aral Sea, East from Komsomol'sk-on-Ustyurt", 8.06.1972 (G. S. Medvedev), 3 ♂, 2 ♀, 1 juv., ZIN - 1593; "Western shore of Aral Sea, 45°20' North" (Birula 1906), 7.08.1901 (L. S. Berg), 1 ♂, 1 ♀, ZIN - 1072; 3.08.1902 (id.), 2 ♂, 1 ♀, ZIN - 1073; 7.07.1901 (id.), 1 ♂, 3 ♀, ZM - Tb - 111; Lake Karaterenga (in Beltau Mts, 26 km North from Takhtakumyr), 27.05.1972 (G. S. Medvedev), 1 ♂, 1 ♀, ZIN - 1576; 15.06.1972 (id.), 1 ♂, 1 ♀, ZIN - 1626; Kaskaotol (in Ustyurt shores of Aral Sea), spring 1933 (G. V. Nikolski), 10 ♂, 8 ♀, 13 juv., ZM - Tb - 149; Kipchak, 1898 (K. Rossikov), 1 ♀, ZIN - 1823; Kosbulak 6.06.1972 (G. S. Medvedev), 1 ♂, 5 ♀, ZIN - 1625; Lake Kutanbulak, year? (Alenitsyn), 1 ♂, 1 ♀, ZIN - 1074; Nukus, 15.08.1910 (E. Fischer), 1 ♂, ZIN - 471; "48 km SW from Nukus", 28.05.1972 (G. S. Medvedev), 2 ♂, 2 juv., ZIN - 1592; Sultanuizdagh Mt, 29.05.1972 (id.), 1 ♂, 1 ♀, 1 juv., ZIN - 1740; Tasbulak (Birula 1906), 5.07.1901 (L. S. Berg), 1 ♂, ZM - Tb - 104; 1900 (id.), 1 ♂, ZM - Tb 445.

Namangan Region: Karachak (Birula 1911b), 25.07.1909 (N. Z.), 1 juv., ZIN - 516; Uigursai, 10.04.1985 (S. V. Ovchinnikov), 1 ♂, ZM - Tb 502.

Navoi Region: Barylbaikuduk Well, 20.06.1912 (N. Z.), 1 ♂, ZIN - 499; Beltau (= Aristanbeltau) Mts, 29.05.1912 (N. Z.), 1 ♀, ZIN - 500; "way from Belkuduk Well to Aristanbelkuduk Well", 26-30.05.1912 (N. Z.), 1 ♀, ZIN - 1302; Kuldzhuktau, biological station of Ac. Sci. Uzb. SSR., 9-19.05.1974 (N. Ergashev), 4 ♂, 7 ♀, ZIN - 1751; "East Kizylkum", 04.1873 (M. N. Bogdanov), 3 ♀, ZIN - 502; year? (Eversmann), 5 ♀, ZIN - 503; Palvanuduk Well, 20.07.1907 (N. Z.), 1 juv., ZIN - 1811; Sarlybai Well, 15.06.1912 (N. Z.), 1 ♀, ZIN - 501; Tokhto Mt, Tokhtasai, 10.08.1915 (V. Peltz), 1 ♂, ZIN - 451.

Samarkand Region: Aktash; 18.05.1969 (Yu. B.), 1 ♂, 7 ♀, 2 juv., ZIN - 1758; Amankutan, 30.05.1969 (id.), 1 ♂, 1 ♀, ZIN - 1571; Dzhusma, 04.1910 (V. Peltz), 8 ♂, 5 ♀, 2 juv., ZIN - 450; Kizylchaly, Autumn 1910 (id.), 8 ♂, 5 ♀, 2 juv., ZIN - 460; Samarkand, 04.1896 (L. B.), 1 ♀, ZIN - 447; 05.1896 (id.), 2 ♀, ZIN - 448; 1.04.1912 (A. N. Kirichenko), 1 ♂, 4 ♀, ZIN - 449; year (I. I. Sokolov), 1 ♀, ZIN - 159.

Surkhandarya Region: Derbent, 7.06.1912 (A. N. Kirichenko), 1 ♀, ZIN - 433; Khazretbaba (in Babatag Mts), 10.06.1910 (N. Z.), 4 ♀, ZIN - 444; Khodzhaulkan, 23.05.1910 (id.), 1 ♀, 4 juv., ZIN - 442; Kizylkum and Batankum Sands, near Surkhandarya River, 27.08.1896 (L. B.), 1 ♂, ZIN - 1738; Kyariz, 22.05.1910 (N. Z.), 1 ♂, ZIN - 441; Lyailyakan, 24.05.1910 (id.), 1 ♀, 4 juv., ZIN - 443.

Tashkent Region: Almazar (= Vrevskaya) (Birula 1911b: Vrasskaya!), 1904 (G. Nasibyanz), 1 ♂, 2 ♀, ZIN - 513; summer 1932 (P. Veltishchev), 1 ♀, ZIN - 1610; Badaksai (in Pskem Valley) (Birula 1911b) 9.06.1907 (N. Z.), 1 ♀, ZIN - 511; Chinaz (Birula 1911b), 13.08.1907 (N. Z.) ZIN - 504; 1878 (V. Russov), 10 ♂, 14 ♀, 6 juv., ZIN - 508; Korzhantau Mts (in Karachatau Range), 08.1981 (A. B. Nenilin), 4 juv., ZM - Tb - 503; Tashkent, 27.03.1907 (N. Z.), 1 ♀, ZIN - 506; 1883 (A. Nikolsky), 1 ♀, ZIN - 507; Turpak Pass (in Pskem

Valley) (Birula 1911b), 18.06.1907 (N. Z.), 1 ♀, ZIN - 512.

IRAN (North - East), CHINA (first record, North - West China, former Kopsky District, Arasan: 1 ♀, ZIN - 468.

Notes. 1. Birula (1917a: 41, footnote 37), noted that, according to some characters in the original description and figure in Koch's work (1839), he placed *Androctonus thersites* C. Koch into Turkestanic race of *Buthus eupeus* (C. Koch). The original specimen apparently was collected by Eversmann and Pander (1820-1821) or Eversmann (1824) (Birula 1917a). In general revision, the type specimen and terra typica must be designated, because expeditions mentioned collected as wide as from Orenburgh to Bukhara.

2. All unpublished collections from Kazakhstan and Central Asia here above were provisory placed into *M. e. thersites*, until the revision would be made which established the status of such forms as *M. e. afghanus*, *M. e. barszczewskii* and *M. e. philippovitchi*.

3. According to his unpublished records, A. A. Birula intended to describe the separate subspecies, *M. e. caspius* (see: Pavlovsky 1934). With this name he had labeled a lot of specimens of *M. e. thersites* from Turkmenia in ZIN collection.

#### 1 c. *M. e. afghanus* (Pocock 1889)

##### Synonymy

*Buthus afghanus* Pocock 1889a: 116, fig. 4 (types: see above); Kraepelin 1895; Birula 1900c: 10.

*Buthus eupeus* forma Birula 1896: 240 (in part).

*Buthus eupeus afghanus* —. Birula 1900a: 360 (= forma γ, in part), 1903a: 69, 1904b: 30, 1905a: 122, 1917a: 41; Leister 1933: 342.

*Mesobuthus eupeus afghanus* —. Vachon 1958b: 156, fig. 38; 1966: 212; Habibi 1971: 43; Pérez 1974: 27.

Distribution. USSR. Turkmenia. Mary Region: Kushka (Birula 1904b, 1905a); between Tedzhen and Murghab Rivers (Birula 1904b).

IRAN (North and East), AFGHANISTAN (North).

Note. No specimen from the USSR in ZIN collection is labeled by this name; there are only *M. e. afghanus* from Iran (ZIN - 152 to ZIN 170).

#### 1 d. *M. e. bogdoensis* (Birula 1896)

##### Synonymy

*Buthus eupeus* forma δ *bogdoensis* Birula 1896: 241 (Type: 1872, Maloe Bogdo, 1872 (A. Becker), 3 ♂, 2 ♀, 8 juv., ZIN - 171).

*Buthus eupeus bogdoensis* —. Kraepelin 1899: 24; Birula 1904b: 30; 1905a: 22, 1917a: 41; Leister 1933: 342.

*Mesobuthus eupeus bogdoensis* —. Vachon 1958b: 155; Pérez 1974: 27; Orlov and Vasilyev 1983b: 62.

Distribution. USSR. Kazakhstan. Ural Region: Maloe Bogdo Mt, 1872

(A. Becker), 3 ♂, 2 ♀, 8 juv., ZIN - 171; 1872 (id.) 9 ad., ZIN - 1295; year? (A. Kharuzin and K. S.), 1 ♂, 4 ♀, ZM - Tb - 55; year? (id.), 2 ♂, 1 ♀, 1 juv., ZM - Tb - 54.

Russia. Astrakhan Region: Bolshoe Bogdo Mt. (Birula 1896, 1900c, 1904b, 1905a), 08.1934 (A. N. Kirichenko), 1 ♀, ZIN - 1768.

### 1. *e. M. e. barszczewskii* (Birula 1904)

#### Synonymy.

*Buthus eupeus barszczewskii* Birula 1904a: 21 /Types: "Kishlak Shut", 04-06.1898 (L. B.), 3 ♂, 2 ♀, 1 juv. ZIN - 438; syntypes in Zool. Mus. Berlin, Kishlak Shut, 04-06.1898, 3 ad., ZMB 10237 (Moritz and Fischer 1980) and 7 ♂, 17 ♀, 45 juv., ZIN - 437/; 1904b: 30, 1905a: 122, 1917a: 41; Leister 1933: 342; Moritz and Fischer 1980: 310.

*Buthus eupeus thersites* var. *barszczewskii* —. Birula 1911b: 167.

*Mesobuthus eupeus barszczewskii* —. Vachon 1958: 155; Pérez 1974: 26.

Distribution. USSR. Tadjikistan. Kulyab Region: Kyzylsu Post (Birula 1911b). Leninabad Region: Kshtut (Birula 1911b).

Uzbekistan. Samarkand Region: Karatyube (Birula 1904a, 1904b), 21.04.1897 (A. N. Kaznakov), 1 ♀, 1 juv., ZIN - 452; Shut and Chapugh (in Gissarsky Range) (Birula 1904a, 1904b) (See above); Kul', 15.06.1896 (L. B.), 1 ♀, ZIN - 436.

Note. The subspecies is dubious. Here are placed only specimens labeled by this name by A. Birula in his collection; all other specimens from Kyzylsu, Kshtut, Karatyube etc. are placed in *M. e. thersites*.

### 1 f. *M. e. philippovitschi* (Birula 1905)

#### Synonymy.

*Buthus eupeus philippovitschi* (Birula 1905 a): 125, fig. 2 /syntype: North Iran, Astrabad Province, Karasu River, 17.02.1904 (E. M. Philippovitsch), 1 ♂, 1 ♀, ZIN - 378/, 1911b: 165, 1917a: 40, 1918: 13; Leister 1933: 342; Pavlovsky 1934: 201; Werner 1936c: 204.

*Mesobuthus eupeus philippovitschi* —. Vachon 1958b: 155 (philippovitschi!), 1966: 213; Habibi 1971: 44; Pérez 1974: 26.

Distribution. USSR. Turkmenia: Krasnovodsk Region: Atrek River (Pavlovsky 1934), 10.1903 (K. Ahnger), 1 ♀, ZIN - 386; 10.1903 (id.) 1 ♂, 2 ♀, ZIN - 1735; IRAN (North, from Mazendaran to Atrek).

### 2. *Mesobuthus caucasicus* (Nordmann 1840)

#### Synonymy.

*Androctonus caucasicus* Nordmann 1840: 731, pl. 1, fig. 2 /Caucasus: Tiflis; type from Helsinki University was examined by A. Birula (1917a: 68)/; Eichwald 1841: 235; Gervais 1844: 43; Kraepelin 1891: 204.

*Androctonus ornatus* (nec Nordmann 1840) Kessler 1874: 19

/Azerbaijdzhan, Apsheron, 1863 (Göbel), 2 ♂, 1 ♀, ZIN - 73, examined by A. A. Birula (1905b: 120; 1917a: 70)/; Rossikov 1884a: 252, 1884b: 283.

*Buthus caucasicus* —. Simon 1879: 100; Kraepelin 1895: 82; Schmidt 1896: 30; Birula 1897: 383; Kraepelin 1899: 24 (= *fuscus*); Birula 1900c: 11; Kraepelin 1901: 267, 1904: 196; Dinnik 1905: 21; Tarnani 1907: 30; Leister 1912: 53; Penther 1912: 111; Kraepelin 1913: 125, Pavlovsky 1916a: 35; 1916b: 243, fig. 2B, C; Birula 1917a: 39, fig. 3-4; 1917b: 131 (= *caucasicus*), 1918: 24; Shnitnikov 1925: 147; Birula 1927a: 82, 1927b: 204; Pavlovsky 1934: 201; Werner 1934: 269; Vlasov 1937b: 241; Kästner 1940: 231; Vinogradov 1948: 305; Terthyshnikov 1949: 110; Kobakhidze 1950: 375; Bogachov 1951: 402; Marikovskiy 1953: 166; Alim-Izhanov and Bronstein 1956: 92; Popov 1958: 287; Pigulevskiy 1961: 41; Nefedov 1962: 96; Balashov 1973: 714; Orlov et al., 1977: 5; Yusubov 1977: 33; Kaplin 1978: 32; Yusubov 1978: 33; Sabirova 1981: 29.

*Buthus parthorum* Pocock 1889: 113, pl. 13, fig. 3 (North-East Iran, "between Harirud Valley and Meshed", type in British Museum); Kraepelin 1895: 83, 1913: 126.

*Buthus cognatus* (nec L. Koch 1878) Simon 1889: 386 (Turkmenia, Krasnovodsk; types (probably) in Mus. Natn. Hist. Natur. Paris, syntypes in Caucasian Museum are absent); Radde 1899: 478.

*Buthus fuscus* Birula 1897: 388 (Tadzhikistan; see subspecies).

*Buthus caucasicus* (nec *Scorpio caucasicus* Fischer 1813) Birula 1900b: 367, 1903a: 17, 1903b: 70, 1904a: 22, 1904b: 30 (= *parthorum*), 1905b: 120, fig. 2 (= *ornatus*, = *cognatus*); 1906: 42; Leister 1910: 1 Birula 1910: 120 (= *kaznakovi*), 1911b: 167.

*Buthus kaznakovi* Birula 1904a: 21 (Tadzhikistan; see subspecies).

*Buthus przewalskii* —. Kishida 1939: 44 (see subspecies), NEW SYNONYMY.

*Mesobuthus caucasicus* —. Vachon 1950: 153; Takashima 1957: 157; Vachon 1958b: 148, fig. 32 - 35; 1966: 212; Habibi 1971: 43; Farzanpay and Pretzmann 1974: 214; Pérez 1974: 25; Fet 1980: 224; Vasilyev et al. 1981: 30; Yusubov 1981: 80; Fet 1982: 1911; Yusubov and Gadzhiev 1982: 36; Orlov and Vasilyev 1983a: 11, fig. 12. 1983b: 63; Vasilyev and Orlov 1983: 72; Yusubov and Gadzhiev 1983: 33; Fet 1984: 41; Kinzelbach 1984: 104; Kuznetsov 1984a: 264, 1984b: 163; Fet 1985: 76; Kinzelbach 1985: 2.

*Scorpio caucasicus* Fischer 1813: 404, tab. 4, fig. 1 (Caucasus), NOMEN NUDUM (Birula 1917a: 1).

Distribution. USSR: Armenia, Azerbaijdzhan, Georgia (see *M. c. caucasicus*), Kazakhstan (see *M. c. parthorum*, *M. c. intermedius*), Kirghizia (see *M. c. parthorum*, *M. c. intermedius*), Russia (see *M. c. caucasicus*), Tadzhikistan (see *M. c. parthorum*, *M. c. intermedius*, *M. c. fuscus*, *M. c. kaznakovi*), Turkmenia (see *M. c. parthorum*, *M. c. intermedius*), Ukraine (see *M. c. caucasicus*), Uzbekistan (see *M. c. parthorum*, *M. c. intermedius*, *M. c. przewalskii*). TURKEY, IRAQ (?), IRAN, AFGHANISTAN, CHINA.

- Notes. 1. In the paper of Vietinghoff (1812) a scorpion from Pyatigorsk was not determined, but according to the number of pectinal dents (3035) it could be only *M. caucasicus*! Author mentioned that he sent this specimen to G. Fischer (Moscow), and probably it was the type of *Scorpio caucasicus* Fischer 1813. If so, the last name could be regarded as valid; but the type had vanished, and this restauration has no practical sense, for the name *Mesobuthus caucasicus* (Nordmann) is now very common and stabile one.
2. Subspecific structure is not certain. A. A. Birula (1917a) had placed here only four "good" subspecies: *M. c. caucasicus* (Nordm.), *M. c. parthorum* (Pocock.), *M. c. intermedius* (Bir.) and *M. c. przewalskii* (Bir.) (sub *Buthus*). Their status requires the revision; especially, the sympatry of *M. c. parthorum* and *M. c. intermedius* in Central Asia needs detailed study. The status and validity of *M. c. fuscus* (Bir.) and *M. c. kaznakovi* (Bir.) also require examination. Moreover, the comparative study of Central Asian subspecies of *M. caucasicus* versus the species *M. martensi* (Karsch) from China is required. That must be noted that in hand-written list of ZIN collection of scorpions, A. A. Birula labeled some specimen from Dzhambul (Kazakhstan) and Andizhan (Uzbekistan) with one more name, "*Buthus caucasicus ferghanensis*" which was neither described, nor published anywhere.
3. Farzanpay (1986:334) cited a new generic name for this species, however not yet described (*Olivierus* Vachon et Farzanpay).

## 2 a. *Mesobuthus caucasicus caucasicus* (Nordmann 1840)

### Synonymy.

- Androctonus caucasicus* Nordmann 1840: 731 (Caucasus, Tiflis).  
*Buthus caucasicus* forma typica Birula 1897: 385 (Turkey, Aralych near Ararat Mt., ZIN - 553), NEW SYNONYMY.  
*Buthus caucasicus typicus* Kraepelin 1899: 225, NEW SYNONYMY  
*Buthus cognatus* (nec L. Koch 1878, nec E. Simon 1889) Radde 1899: 478 (in part: Caucasus).  
*Buthus caucasicus forma typica* Birula 1904b: 31, NEW SYNONYMY.  
*Buthus caucasicus caucasicus* Birula 1904b: 38, 1905b: 120 (= *cognatus*, in part), 1912: 122.  
*Buthus caucasicus fischeri* Birula 1905b: 121 (syntype: Russia, Checheno - Ingushskaya AO, Yevdokimovskoye, 11.07.1894 (K. S.), 1 ♂, 1 ♀, ZIN - 104) (= *cognatus*, in part), 1911b: 168, 1912: 122.  
*Buthus caucasicus caucasicus* —. Birula 1917a: 59, fig. 34 (= *caucasicus caucasicus*, = *caucasicus fischeri*, pro natio), 1918:24.  
*Mesobuthus caucasicus caucasicus* —. Vachon 1958b: 150, 1966: 212; Habibi, 1971: 43; Yusubov and Gadzhiev 1982: 36; Orlov and Vasilyev 1983b: 62; Vasilyev and Orlov 1983: 74.  
*Mesobuthus caucasicus fischeri* —. Vachon 1958b: 150; Pérez 1974: 25; Orlov and Vasilyev 1983b: 62.  
*Buthus caucasicus fischeri* —. Nefedov 1962: 96; Balashov 1973: 714.

Distribution. USSR. Armenia: Echmiadzin (Birula 1904b, 1917a), 06.1891 (A. A. Birula), 1 ♀, ZIN 77; the way from Goris to Kafan, 19.07.1956 (L. V. Zimina), 1 ♀, ZM - Tb - 455; Khachik (Birula 1900c), year? (Nasonov), 1 ♂, ZM - Tb - 57; Megri, 1000 m, 24.04.1983 (S. I. Golovach), 1 juv., ZIN - 1802; Megrinsky District, 21.08.1948 (A. Richter), 1 ♀, ZIN - 1676; "Surmalinsky Uezd", 04-05-1911 (N. A. Bobrinskoi) 2 ♀, 1 juv., ZM Tb - 197; Vedi, 6.10.1974 (V. F. Orlova), 1 ♀, ZM - Tb - 199; Yerevan (= Erivan') (Radde 1899; Birula 1900c, 1904b, 1905b, 1917a), summer 1900 (N. N. Ivanov), 2 ♀, ZIN - 1271; 17.08.1902 (Yelachich and Klimantovich), 2 ♂, 1 ♀, 1 juv., ZIN 1273; 8.07.1935 (A. Richter), 1 juv., ZIN - 1675; 1904 (N. N. Prostoserdov), 1 ♂, 1 juv., ZIN - 1800; 1.06.1938 (A. Richter and M. Ter-Minassian), 1 ♀, ZIN - 1803; year? (Shakhovskoi), 1 ♀, ZM - Tb - 59; 1936 (collector?), 1 ♀, ZM - Tb - 151.

Azerbaijan: Apsheron Peninsula (loc. dub.) (Birula 1904b, 1917a; Tertyshnikov 1949, loc. dub.), 1863 (Göbel), 2 ♂, 1 ♀, ZIN - 73; Khaldan (Bogachov 1951); Geoktapa (Birula 1912, 1917a); Kirovabad (= Yelizavetpol') (Birula 1904b, 1917a; Tertyshnikov 1949; Bogachov 1951); Maralyan Post (on Araxes River) (Birula 1917a; Tertyshnikov 1949), 06.1894 (K.S.), 1 ♀, ZIN - 1272. Nakhichevanskaya ASSR: Biet, 29.07.1933 (Petrov), 1 ♀, 1 juv., ZIN - 1674; Dasta (= Dosty) (Birula 1912, 1917a; Tertyshnikov 1949); Nakhichevan' (Radde 1899; Birula 1904b, 1905b, 1917a; Tertyshnikov 1949; Bogachov 1951; Yusubov 1977), 07.1891 (A. A. Birula), 1 ♀, 2 juv., ZIN - 74; 1855, "Brthlm" (= Bartholomeu?), 1 ♀, ZIN - 75 (557); 1891 (A. A. Birula) 2 juv., ZIN - 78 (588); 1933 (Nakhichevanskaya Exped. Ac. Sci. USSR), 1 ♀, ZIN - 1672; 1982 (N. V.), 2 ♀, ZM - Tb - 184; Ordubad (Tertyshnikov 1949; Yusubov 1977), 9.07.1933 (D. Znoiko) 1 juv., ZIN - 1671; 4.07.1933 (id.), 1 ♀, ZIN 1673.

Georgia: Tbilisi (= Tiflis) (Nordmann 1840; Gervais 1844; Leister 1910, 1912; Birula 1917a; Bogachov 1951), summer 1914 (K. S.), 2 ♀, ZIN 1147; Abkhazia: Sukhumi (= Sukhum), LOC. DUB. (Birula 1900c), 1885 (Nasonov), 5 juv., ZM - Tb - 61.

Russia. Checheno-Ingushskaya AO, valley of Argun River: Shatoi (Radde 1899; Birula 1905b, 1917a); Yevdokimovskoye (Radde 1899; Birula 1905b; Dinnik 1905; Birula 1917a), 11.07.1894 (K. S.), 1 ♂, 1 ♀, ZIN - 104, 26.06.1885 (collector?), 1 ♂, 1 ♀, 5 juv., ZIN - 1670. Daghestan: Akhty (Birula 1912, 1917a), 24.07.1900 (A. Z.), 1 ♂, ZM Tb - 162; Botlikh (Rossikov 1894a, 1884b; Birula 1912, 1917a), 1883 (K. Rossikov), 3 ♂, 1 ♀, ZIN - 72; 12.07.1904 (Yu. Beckmann), 2 ♀, ZIN - 1202; 15.06.1913 (A. Mlokosevich), 1 ♂, 1 ♀, ZIN - 1649; Chirkei (Birula 1912, 1917a); Chiryurt (Birula 1911b, 1912, 1917a), 23.05.1903 (L. S. Berg), 1 ♂, ZIN - 1199; Derbent (Eichwald 1841; Birula 1912, 1917a), 31.07.1910 (K. S.), 1 ♂, ZIN - 1198; 08.1903 (L. Ter-Grigoriants), 3 ♀, 1 pul., ZIN 1201; 1885 (K. Rossikov), 1 ♀, ZIN - 1693; Golotl' (Birula 1912, 1917a); Gortlroso (Birula 1912, 1917a); Gunib (Birula 1903d, 1904b, 1905b, 1911b, 1912, 1917a), 30.05.1909 (L. S. Berg), 2 ♂, 5 juv., ZIN - 1200; 08.1900 (A. Tararin), 1 ♀, ZIN - 1270; Karakyure (= Karakyuri) (Birula 1917a);

Karidakh, 17.06.1913 (A. Mlokosevich), 2 ♀, ZIN - 1640, and 1 ♀, ZIN - 1684; 16.06.1913 (id.), 1 ♂, 12 ♀, 9 juv., ZIN 6 1692; 18.06.1913 (id.), 18 ♂, 27 ♀, 4 juv., ZIN - 1691; Khadzhal'makhi, 19.06.1925 (A. N. Kirichenko), 1 juv., ZIN - 1801b; Khunzakh (Birula 1912, 1917a), 20.06.1894 (K. Rossikov), 5 ♀, ZIN - 1627; Konchugai (Birula 1912, 1917b); Koroda, 13.06.1913 (A. Mlokosevich), 3 ♂, 2 ♀, 6 juv., ZIN - 1643; Kular (Birula 1912, 1917a); Maka (Birula 1917a); the way from Maka to Karakyuri, 16.07.1900 (A. Z.), 2 ♂, 1 ♀, ZM - Tb - 118; Makhachkala (= Petrovsk), (Birula 1903d, 1904b, 1917a) Maraga (Birula 1912, 1917a); Miskindzha (= Maskindzha) (Birula 1917a); Mugarty (= Mugatyr) (Birula 1912, 1917a); Rutul (Birula 1912, 1917a); Salta (= Salty) (Raddé 1899; Birula 1905b, 1917a); Samur (Bogachov 1951); Sanamakhi (Birula 1912, 1917a); Tebekmakhi (Birula 1912, 1917a); Urada (Birula 1912, 1917a); Zudakhar, 18.06.1925 (A. N. Kirichenko), 1 ♂, ZIN - 1801a. Kabardino-Balkarskaya ASSR: Gizhgit River (Nefedov 1962). Severo-Osetinskaya AO (= North Osetia): Skalisty Range, Matkhokh and Adaikhokh Mts. (Popov 1958). Stavropolsky Region (LOC. INCERT.): Pyatigorsk, Mashuk Mt. (Vietinghoff 1812) (see Note 1 to *M. caucasicus*).

Ukraine. Crimea Region (LOC. DUB.) (Nordmann 1840; Gervais 1844; Simon 1879). Kherson Region (Orlov and Vasilyev 1893a; Vasilyev, pers. comm.). Odessa Region: Severinovka (Balashov 1973), 07.1967 (V. S. Solodovnikova), 1 ♂, 1 ♀, ZIN - 1536.

TURKEY, IRAQ (?), IRAN.

### 2 b. *M. c. parthorum* (Pocock 1889)

#### Synonymy.

*Buthus parthorum* Pocock 1889: 113 (North-East Iran); Kraepelin 1895: 83, 1913: 126.

*Buthus cognatus* (nec L. Koch 1878) Simon 1889: 386 (in part, Krasnovodsk); Radde 1899: 480 (in part).

*Buthus caucasicus* forma  $\beta$  *parthorum* ---. Birula 1897: 386.

*Buthus caucasicus parthorum* ---. Birula 1904b: 31, 1905b: 120 (= *cognatus*, in part), 1911b: 16.

*Buthus caucasicus parthorum* ---. Birula 1917a: 71; Moritz 1922: 214; Pavlovsky 1934: 201; Shestoperov 1934: 226, 1935: 192.

*Mesobuthus caucasicus parthorum* ---. Vachon 1958b: 150, fig. 32-35, 1966: 212; Habibi 1971: 43; Pérez 1974: 25; Fet 1980: 224.

Distribution. USSR. Kazakhstan. Chimkent Region: Musabaikuduk Well (Birula 1911b), 24.07.1907 (N. Z.), 1 ♂, 1 ♀, ZIN - 1240; Saryagach, 05-06. 1925 (V. D. Prinada), 1 ♂, 1 ♀, 1 juv., ZIN - 1679; Kzyl-Orda Region: lower Sarysu River, 11.07.1947 (collector?), 1 ♂, ZM - Tb - 406; Uzunata, 05.1871 (A. P. Fedchenko), 1 ♂, ZM - Tb - 404; Baibek, 05.1871 (id.), 1 ♀, 1 juv., ZM - Tb - 401.

Kirghizia. Osh Region: Osh, 17.06.1928 (A. N. Reihardt), 1 juv., ZIN - 1245.



Russia. (LOC. ERR.?), Orenburgh Region, Guberli Mts., year? (O. Hertz), 1 ♀, ZIN - 1250; evidently label is wrong.

Tadzhkistan. Kurgantyuube Region: Reserve "Tigrovaya Balka", year? (Yu. B.), 1 ♂, ZIN - 1658.

Turkmenia. Ashkhabad Region: Anau (Birula 1897, 1904b; Pavlovsky 1934), 23.05.1896 (P. A. Varentsov), 1 ♀, ZIN - 1207; Archman, 7.05.1974 (Yu. B.), 2 juv., ZIN - 1548; Ashkhabad (= Askhabad) (Birula 1897, 1904b; Pavlovsky 1934), 9. 04.1895 (S. I. Korzhinsky), 1 juv., ZIN - 1211; 11.05.1928 (V. V. Gussakovsky), 2 juv. ZIN - 1232; 4.05.1928 (id.), 1 juv., ZIN - 1233; 23.09.1930 (Ya. P. Vlasov), 1 pull., ZIN - 1145; year? (A. Bykov), 2 ♂, 1 ♀, ZIN - 1647; spring 1642 (V. G. Heptner), 1 ♀, ZM - Tb - 440; Bakharden, 1981 (N. V.), 1 juv., ZM - Tb - 187; "Central Karakum Sands" (Sabiroya 1981); Gaudan (G. T. Kuznetsov, pers. comm.); Gyaurs (Pavlovsky 1934), 3.05.1889 (A. P. Semenov-Tyan-Shansky), 1 ♂, 1 juv., ZIN - 1206; 5.04.1984 (V. V. Yanushev), 1 ♀, ZM - Tb - 331; Firyuza (Birula 1911b, Pavlovsky 1934), 22.06.1904 (S. I. Bilkevich), 1 juv., ZIN - 1223; Kaakhka, 12.05.1971 (Yu. B.), 1 juv., ZIN - 1546; 9.05.1974 (id.), 3 ♀, 2 juv., ZIN - 1651; Lake Kopetdaghscoe Reservoir, (G. T. Kuznetsov, pers. comm.); Lake Kurtli Reservoir (G. T. Kuznetsov, pers. comm.); Serakhs., 26.04.1985 (S. S.), 1 ♀, ZM - Tb - 329; Serakhsy Region, year? (V. E. Flint), 1 ♂, ZM - Tb - 413; Lake Sportivnoye Reservoir (G. T. Kuznetsov, pers. comm.); Sultandepe (G. T. Kuznetsov, pers. comm.); Tedzhen (Birula 1904b, 1911b; Pavlovsky 1934), 1896 (K. Ahnger), 1 ♀, ZIN 6 1209; 10-28.06.1904 (K. Arris), 1 ♀, 1 juv., ZIN - 1214; 10.08.1896 (K. Ahnger), 1 juv., ZIN - 1261; Tedzhenstroï (G. T. Kuznetsov, pers. comm.). Chardzhou Region: Repetek (Birula 1904b, 1911b; Moritz 1922; Pavlovsky 1934; Fet 1980); 03-05.04.1903 (V. Fausek), 1 ♀, ZIN - 1205; 27.07.1897 (Dolgopolov), 2 ♂, 1 juv., ZIN - 1212; 07.1904 (E. Fischer), 2 ♀, 2 pul., ZIN - 1215; 06.1905 (id.), 1 juv., ZIN - 1216; 02.1904 (id.), 1 ♂, ZIN - 1218; year (2), (id.), 1 ♀, ZIN - 1219; 08.1904 (id.), 1 ♀, 1 juv., ZIN - 1220; 16.04.1904 (S. I. Bilkevich), 1 ♀, ZIN - 1224; 1.06.1916 (B. A. Schkaff), 1 ♂, 1 ♀, ZIN - 1127; 17.07.1915 (S. A. Tsarevsky), 2 ♀, ZIN - 1238; 7-10.05.1937 (B. A. Vinogradov and N. Yegorov), 3 ♀, 1 juv., ZIN - 1639; 7.06.1971 (O. R. Sabirova), 1 ♀, ZIN - 1662; 30.07.1929 (V. S.), 1 ♀, ZIN - 1667; 06.1929 (id.) 1 ♀, ZIN - 1678; 28.07.1929 (id.), 1 ♀, ZIN - 1806; 24.04.1967 (V. I. Kuznetsov), 1 ♂, ZM - Tb - 350; 22.08.1972 (id.), 2 ♂, 1 ♀, ZM - Tb - 351; 5-12.09.1972 (id.), 1 ♂, 2 ♀, 1 juv. ; ZM - Tb - 352; 18.04.1975 (id.), 1 juv., ZM - Tb - 355; 28.04.1963 (S. I. Keleynikova), 1 juv., ZM - Tb - 416; 29.04.1929 (V. G. Heptner), 1 ♀, ZM - Tb - 439; 1937 (N. Kostylev), 1 ♂, 1 ♀, ZM - Tb - 448. Krasnovodsk Region: Akhchakuima (Shestoperov 1935), 14.05.1974 (Yu. B.) 2 ♀, ZIN - 1661; 12.05.1984 (V. F.) 1 juv., ZM - Tb - 333; Cheleken, 9.06.1913 (collector?), 1 juv., ZIN - 1630; year? (A. F. Bogolyubov), 1 ♀, ZIN - 1646; Dardzha Peninsula (Birula 1904b), 1864 (Göbel), 1 ♀, ZIN - 1204; Dzhebel (Pavlovsky 1934), 26.04.1921 (L. Moritz), 1 ♂, 1 ♀, ZIN - 1229; 23.06.1910 (E. Fischer), 1 ♀, ZIN - 1244; 22.07.1934 (V. A. Popov), 1 ♀, ZIN - 1663; 16.07.1934 (id.), 1 juv., ZIN - 1664; 22

km west-south-west from Dzhebel, 06.1974 (Yu. B.), 1 juv. ZIN - 1579; Karabugaz, 40 km North from Kizyl-Arvat, 28.04.1953 (Exped. ZIN), 1 ♀, ZM - Tb - 414; Kara-Kala, 20.08.1936 (L. Molchanov), 1 ♀, ZIN - 1631; 05.1960 (Yu. B.), 1 ♀, ZIN - 1650; Karatogolok (on Uzboi), 1951 (D. M. Steinberg), 1 ♀, ZIN - 1867; Krasnovodsk (Simon 1889; Radde 1899; Birula 1904b; 1905b, 1911b; Pavlovsky 1934; Summer 1900 (K. Ahnger), 1 ♂, 2 ♀, ZIN - 1210; 07.1905 (E. Fischer), 1 ♂, ZIN - 1217; 04-05.1900 (Maximovich), 1 juv., ZIN - 1260; 3-5.07.1929 (V. S.), 1 ♀, ZIN - 1682; 3-5.07.1929 (id.), 1 ♂, ZIN - 1808; 1981 (N. V.), 1 ♀, ZM - Tb - 188; 07-08.1973 (A. V. Chesunov), 1 ♀, ZM - Tb - 417; Mollakara (Moritz 1922); Yazkhan, 19.05.1971 (Yu. B.), 1 juv., ZIN 1588. Mary Region: Badghyz Reserve /various points within: Akarcheshme, 29.04.1972 (Yu. B.), 1 ♂, 1 ♀, ZIN - 1568; Kepele, 12.04.1980 (Kh. I. Atamuradov), 1 ♂, ZM - Tb - 334; 17.04.1977 (V. F.), 1 juv., ZM - Tb - 336; 05.1976 (A. Yu. Cellarius), 1 ♀ ZM - Tb - 338; Kizyldzhar, 09.1977 (V. M. Pakulin), 1 juv., ZM - Tb - 330; 18.04.1975 (V. I. Kuznetsov), 1 ♂, ZM - Tb - 354; Nardevanly, 15.05.1972 (Yu. K. Gorelov), 1 juv., ZM - Tb - 337; Pinkhancheshme, 23.04.1972 (Yu. B.), 1 ♀, ZIN - 1654; 14.05.1972 (Yu. K. Gorelov), 1 ♀, ZM - Tb - 153; Lake Yeroilanduz, 16.05.1976 (A. Yu. Cellarius), 1 ♀, ZM - Tb - 332; 26.04.1985 (S. S.), 1 juv., ZM - Tb - 335; Bairam-Ali (Birula 1911b; Pavlovsky 1934); 1906 (Demokičov), 1 juv., 2 ♀, ZIN - 1221; 22.04.1929 (V. G. Heptner), 1 ♀, ZM - Tb - 444; Chemenibid, 28.04.1985 (S. S.) 1 ♀, ZM - Tb - 328; Dortkuy (Pavlovsky 1934), 20.09.1896 (K. Ahnger), 1 juv., ZIN - 1262; Iolotan' (Pavlovsky 1934), 2.02.1926 (V. Kizeritsky), 1 ♂, ZIN - 1230; 27.06.1926 (id.), 1 ♂, ZIN - 1231; Kushka (Birula 1904b, 1911b), 15-25.05.1904 (K. Arris), 1 ♀, ZIN - 1213; year? (V. Oshanin), 1 ♂, 2 ♀, ZIN - 1686; "Afghan border, south from Kushka", year? (K. Ahnger), 4 ad., ZIN - 1208; year? (id.), 1 ♂, 1 ♀, 2 juv., ZIN - 1629; Mary (G. T. Kuznetsov, pers. comm.); Morgunovka, 14.08.1977 (V. F.), 1 ♀, ZM - Tb - 349; "Murghab Imperial Manor" (near Bairam-Ali) (Pavlovsky 1934), 30.05.1912 (D. Smirnov), 1 ♂, 2 ♀, ZIN - 1225; 29.02.1912 (id.), 4 ♂, ZIN - 1226; Murghab River, year? (A. N. Safarov), 1 ♂, 1 ♀, ZIN - 1637; year? (id.), 1 ♀, ZIN - 1804; year? (id.), 1 ♂, ZIN - 1805. Tashauz Region: Chirishly, 26.09.1983 (O. Soyunov), 1 ♂, 1 ♀, 2 juv., ZM - Tb - 323; 2.10.1983 (id.), 1 juv., ZM - Tb - 324; Kaplankyr Reserve, 1985 (L. A. Mitroshina), 5 ♂, 11 ♀, 10 juv., ZM - Tb - 300 to 322; Kunya-Urgench, 3.06.1972 (Yu. B.), 1 ♂, 1 juv., ZIN - 1653; Shakhsem, 06.1953 (E. A. Arens), 1 ♀, ZIN - 1848; 19.10.1985 (O. Soyunov), 1 ♂, ZM - Tb - 325; 1.05.1985 (id.), 1 juv., ZM - Tb - 326.

Uzbekistan. Bukhara Region: Sukuti, 6.06.1912 (M. Z.), 1 ♂, ZIN - 1234; Namangan Region: Uigursai, 10.04.1985 (S. V. Ovchinnikov), 1 ♀, ZM - Tb - 358; Navoi Region: Barlybaikuduk Well, 20.06.1912 (N. Z.), 3 ♂, ZIN - 1236; Bel'tau Mts., 20.06.1928 (A. Burachek), 4 juv., ZIN - 1242; Berkutbai Well, 14.06.1912 (N. Z.), 1 ♂, ZIN - 1237; Churkkuduk Well, 17.04.1873 (M. Bogdanov), 1 juv., ZIN - 1241; Kuldzhuktau, Biol. Station Ac. Sci. Uzb. SSR, 9-19.05.1974 (N. Ergashev), 3 ♀, 2 juv., ZIN - 1685;

05.1973 (A. V. Bykov), 1 ♂, 1 ♀, ZM - Tb - 428; Muspenkuduk Well. 18-19.06.1912 (N. Z.), 1 ♀, ZIN - 1239; Nurchataikuduk Well, 23.06.1912 (N. Z.), 1 pull., ZIN - 1235. Surkhandarya Region: Dzharkurgan, 1.05.1969 (Yu. B.), 1 ♀, ZIN - 1535; Termez, 20-30.04.1913 (A. N. Kirichenko), 7 pul., ZIN - 1247; 1912 (id.), 3 ♂, 3 ♀, ZIN - 1248; 20.10.1912 (id.), 1 ♀, ZIN - 1249; 8.04.1913 (id.), 1 juv., ZIN - 1681; 8.06.1913 (id.), 1 ♂, 4 ♀, 1 juv., ZIN - 1683. Karakalpakia: Karaterenga Lake (in Beltau Mts), 27.05.1972 (G. S. Medvedev), 1 ♀, ZIN - 1578; Kipchak, 1898 (K. Rossikov), 1 ♀, ZIN - 1828; 48 km east-south-east from Nulus, 28.05.1972 (G. S. Medvedev), 2 ♂, 3 ♀, 4 juv., ZIN - 1652.

IRAN, AFGHANISTAN.

### 2 c. *M. c. intermedius* (Birula 1897)

#### Synonymy.

*Buthus caucasicus* forma  $\gamma$  *intermedia* Birula 1897: 387

*Buthus caucasicus* forma *intermedia* —. Birula 1900c: 11

*Buthus caucasicus intermedius* Birula 1900b: 368, 1903b: 70, 1904a: 22, 1906: 42, 1911b: 168.

*Buthus caucasicus* forma *intermedia* —. Birula 1904b: 31.

*Buthus caucasicus intermedius* —. Birula 1917a: 71; Shnitnikov 1925: 147; Pavlovsky 1934: 201; Shestoporov 1934: 226; Werner 1936c: 204; Tynybekov 1948: 193.

*Mesobuthus caucasicus intermedius* —. Vachon 1958b: 150, 1966: 212; Habibi 1971: 43; Pérez 1974: 25; Fet 1980: 224; Vasilyev and Orlov 1983: 74.

Distribution. USSR. Kazakhstan. "Baraba" (LOC.DUB.) (Birula 1904b, 1906), 1876 (Slovtsov), 2 ♀, ZIN - 91. Alma-Ata Region: Lake Balkhash (Birula 1906), 1876 (id.), 1 ♂, 2 ♀, ZIN - 84; shore of Lake Balkhash between Ili River and Karatov River, 05.1913 (V. Sh.), 1 ♀, ZIN - 1829; Chamandy 1700 m (id.), 1 ♂, 1 juv., ZIN - 1636; Ilijsk, 05.1947 (V. B. Dubinin), 1 ♀, ZIN - 1865b; Chimkent Region: Chimkent (Tynybekov 1948), 25.07.1934 (V. Muralovich), 1 ♀, ZIN - 1694; 5.08.1934 (id.), 1 juv., ZIN - 1695; 05.1947 (V. B. Dubinin), 2 ♂, 7 ♀, ZIN - 1865a; border of Kyzylkum and Golodnaya Steppe, 15 verst from Syrdarya River, 10-14.05.1903 (G. Jacobson), 2 juv., ZIN - 1191; Saryagach, 05-06.1925 (V. D. Prinada), 1 ♂, 1 ♀, 1 juv., ZIN - 1679; Topkuduk Well (Birula 1911b), 26.07.1907 (N. Z.), 1 ♂, ZIN - 1494. Dzhambul Region: Dzhambul (= Aulie-Ata), 1910 (V. Black), 1 ♀, ZIN - 1196; Georgievka, 22.05.1984 (S. V. Ovchinnikov), 1 ♂, ZM - Tb - 346; Karabastau, 25-30.06.1924 (A. Martynov), 1 ♂, ZIN - 1192. Semipalatinsk Region: "southern part of Semipalatinsk Region" (Birula 1904b); Tarbagatai Mts. (Birula 1904b, 1906), 1871 (Slovtsov), 1 ♂, ZIN - 94. Taldy-Kurgan Region: "Kopal'sky Uezd", 05.1913 (V. Sh.), 2 ♂, ZIN - 1635, 9.03.1909 (V. Sh.), 1 ♀, ZIN - 1638; Lepsa River (Birula 1906), year? (Kushakevich), 1 ♂, ZIN - 85; Panfilov (= Dzharkent) (Schmidt 1896), 25.06.1890 (P. Yu. Schmidt),

1 ♀, ZIN - 96.

Kirghizia. Naryn Region: near confluence of Dzhumgal and Sususmyr Rivers, 8.08.1914 (E. Mikhalevskaya), 1 pul., ZIN - 1174; Osh Region: Akbura River, near its confluence with Bidanabul River, 1500 m, 27.07.1928 (E. Rozmirovich), 1 ♂, 1 ♀, ZIN - 1144; Andarak (Birula 1911b, 1720 m, year? (L. S. Berg), 6 ♀, ZIN - 1495; Aral (Birula 1911b, 4.07.1909 (N. Z.), 1 ♂, 2 ♀, ZIN - 1497; Dzhahal-Abad, 18.05.1925 (Th. Dobrzhansky), 1 juv., ZIN - 1274; 08.1929 (V. S.) 2 ♂, ZIN - 1644; Gul'cha River, 22.06.1928 (A. N. Reihardt), 3 ♀, ZIN - 1275; Osh, 29.03-24.04.1884 (G. T. Grumm-Grzhimailo), 25.06.1948 (E. K.), 1 juv., ZIN - 1872; Patshaata (Birula 1911b), 7.08.1909 (N. Z.), 1 ♀, ZIN - 1498; Sary-Cheleksky Reserve, Arkit, 3.07.1983 (A. B. Ryvkin), 2 ♀, 3 juv., ZM - Tb - 412; Tashkumyr, 6-13.09.1985 (D. V. Logunov), 2 ♂, 3 ♀, ZIN - 1784; Uzgent, 1876 (N. A. Severtson), 1 ♂, ZIN - 89; Yangryk, 23.06.1928 (A. N. Reihardt), 1 ♀, ZIN - 1276. Talas Region: Toktogul (= Ketmen'tyube), 07.1914 (S. I. Shchukin), 2 ♂, ZIN - ?; Lake Toktogul'skoye Reservoir, 23.06.1987 (S. V. Mironov, pers. comm.), 1 ♀.

Tadzhikistan. Dushanbe Region: Botash (on Karatag River), 31.05.1930 (G. Silin), 3 ♀, 1 juv., ZIN - 1698; 1.06.1930 (id.), 1 ♀, ZIN - 1807; 27.05.1930 (id.), 1 juv., ZIN - 1809; Charsoda, 06.1898 (N. B.), 1 ♀, ZM - Tb - 97 and 1 ♀, ZM - Tb - 107; Chil'dara, 2-3.09.1977 (Yu. B.), 6 ♂, 5 ♀, ZIN - 1553; Faizabad, 06.1911 (A. Holbeck), 1 ♀, ZIN - 1169; Garm, 24.06.1896 (L. B.), 1 juv., ZIN - 1648; Garmsky District, Komarousky Reserve, 07.1975 (N. E. Mikkau), 3 juv., ZIN - 1587; Gilyan 7.07.1896 (L. B.), 1 ♂, 1 juv., ZIN - 1257; Gorif River, 06.1901 (N. B.), 1 juv., ZM - Tb - 164; Ishtion, 06.1898 (id.), 1 ♀, ZM - Tb - 81; Kafirnigan, 8.07.1930 (G. Silin), 1 ♂, ZIN - 1687; the way from Kafirnigan to Yangibazar, 18.07.1930 (id.), 1 ♀, ZIN - 1810; Karatag River, 19-21.08.1977 (Yu. B.), 1 ♂, 8 ♀, 1 juv., ZIN - 1688; Khakimi 05.1901 (N. B.), 1 ♀, ZM Tb - 69; Khodzhaobigarm (Birula 1904a), 6.07.1896 (L. B.), 2 ♂, 8 ♀, ZIN - 1880; 1896 (id.), 7 juv. ZIN - 1181; 25.06.1956 (E. K.) 7 ♀, 4 juv., ZIN - 1864; Kondara, 22.06.1947 (E. K.), 1 ♂, 1 ♀, 4 juv., ZIN - 1868; 28.06.1936 (A. Gorzyaev), 1 juv., ZIN - 1875; 5.08.1969, 1800 m (S. I. Keleinikova), 1 ♂, 3 ♀, 1 juv., ZM - Tb - 411; Kul' (Birula 1904a), 15.06.1896 (L. B.), 1 ♂, 3 ♀, 4 juv., ZIN - 1178; Lyangar (Birula 1911b), 7.08.1906 (P. Khorev), 1 ♀, ZIN - 1509; Romit Reserve, 3-6.06.1971 (Yu. B.), 4 ♂, 4 ♀, ZIN - 1561; and 7 ♂, 17 ♀, 2 juv., ZIN - 1569; 8.06.1971 (id.), 3 ♂, 3 ♀, 1 juv., ZIN - 1690; Rundasht, 5.08.1943 (E. K.), 1 juv., ZIN - 1866; 8.09.1947 (id.), 1 ♀, ZIN - 1871; Sangvor (in Peter I Range), 11.06.1977 (N. A. Filippova), 1 ♂, 1 ♀, 1 juv., ZIN - 1641; Savasdara (in Peter I Range), 06.1911 (P. Mel'nikov), 4 ♀, ZIN - 1159; Shut (Birula 1904a), 5.06.1896 (L. B.), 1 ♀, 2 juv., ZIN - 1173; Siama River, 2100 m, 10.07.1969 (L. A. Arutyunov), 3 ♀, 2 juv., ZIN - 1645; south from Tadzhikabad (in Peter I Range), 2500 m, 15.06.1969 (Yu. B.), 1 ♂, 7 ♀, 1 juv., ZIN - 1556; 27.06.1969 (id.), 6 ♂, 3 ♀, ZIN - 1657; Tavil'dara, 06.1971 (Yu. B.), 5 ♂, 2 ♀, ZIN - 1570; Tupalang River (Birula 1904a); Varzob, 15.05.1972 (E.

K.), 2 ♀, 4 juv., ZIN - 1867; 23.05.1939 (A. Romanov), 1 ♂, ZM Tb 456; Varzob and Siama (= Siuma) Rivers (Birula 1904a), 8.07.1896 (L. B.), 1 ♀, ZIN - 1176 and 1 ♀, ZIN - 1303; Lake Varzob, 26.04.1986 (S. L. Sonnstein), 1 ♂, 1 ♀, ZM - Tb - 340; Yakhak (Birula 1904a), 17.06.1896 (L. B.), 3 ♂, 5 ♀, 8 juv., ZIN - 1179; Ziddy, 2000 m, 10.07.1669 (L. Zhil'tsova), 1 ♂, ZIN - 1874. Kulyab Region: Baldzhuvan (= Baldzhuan), 20.08.1896 (A. B.), 1 juv., ZIN - 1263; Bogorak, 12.06.1915 (V. Ya. Lazdin), 1 ♂, 4 ♀, ZIN - 1161; 13.06.1915 (id.), 1 ♂, 3 ♀, ZIN - 1162; Kulyab, 2.07.1933 (V. A. Popov), 1 ♀, ZIN - 1697; Sarichashma, 14.06.1915 (V. Ya. Lazdin), 2 ♀, 1 juv., ZIN - 1164; Tudaboyon (= Chubek), 17.06.1910 (N. Z.), 1 ♀, ZIN - 1156; Tutkavul (= Tetkail'), 1897 (A. Kaznakov), 1 juv., ZIN - 1264. Kurgant'yube Region: Dzhilikul', 1906 (Rozhevits), 1 ♀, ZIN - 1694; Gandzhino, 21.06.1986 (S. L. Sonnstein), 1 ♀, ZM - Tb - 530; 12.04.1986 (id.), 3 ♀, 2 juv., ZM - Tb - 342; 31.05.1967 (A. V. Alekseev), 1 ♂, 3 juv., ZM Tb - 461; Garavuti, 22. 04. 1986 (S. L. Sonnstein), 1 ♀, ZM - Tb - 339; the why from Kizylkala to Shaartuz, 18.05.1985 (Exped. Inst. Zool. Acad. Sci. Ukr. SSR.), 4 ♂, 4 ♀, ZM Tb - 341 and 2 ♂, 1 ♀, 2 juv., ZM - Tb - 345; Nizhnii Pyandzh (= Sarai), 30.05-1.06.1915 (V. Ya. Lazdin), 2 ♂, ZIN - 1182; Pyandzh River 07.1901 (N. B.), 1 juv., ZM - Tb - 113; Reserve "Tigrovaya Balka", 09.1975 (Yu. B.), 1 ♀, ZIN - 1585, 6.06.1975 (V. V. Gorbatovsky), 1 juv., ZM - Tb - 408. Leninabad Region: Adrasman, 3.05.1972 (A. B. Mukhitdinov), 1 ♀, ZIN - 1729; Aksu River (Birula 1900c), year? (collector?), 1 ♂, 2 ♀, ZM - Tb - 67; Babashamal (Birula 1911b), 10.07.1908 (N. Z.), 1 ♂, ZIN 1499; Bekabad, 15.05.1969 (Yu. B.), 2 ♀, 1 juv., ZIN - 1583; Isfara, 29.04.1974 (id.), 1 ♂, 3 ♀, ZIN - 1554; 27.04.1974 (id.), 1 ♀, ZIN - 1659; Iskanderkul' Lake 31.08.1947 (E. K.), 1 juv., ZIN - 1862; 10-13.07.1947 (id.), 2 juv., ZIN - 1870; 05.1898 (N. B.), 1 juv., ZM - Tb - 72 and 2 ♀, ZM - Tb - 73; Kshtut (Birula 1911b), 27.05.1908 (D. M. Fedotov), 1 ♂, 4 ♀, 1 juv., ZIN - 1500; 19.05.1908 (A. Holbeck), 3 ♀, ZIN - 1501; Kuipangaz, 21-24.05.1969 (Yu. B.), 4 ♂, 4 ♀, 2 juv., ZIN - 1581; Kul'kilyan, 05.1898 (N. B.), 2 ♀, ZM - Tb - 70; Shurab, 16.05.1969 (id.), 2 ♂, 5 ♀, 1 juv., ZIN - 1533; Urmetan, 05.1901 (N. B.), 4 ♂, 4 ♀, 2 juv., ZIN - 1581; Utkansai River (in Kuraminsky Range), 06.1915 (R. Bub), 1 ♂, ZIN 1173; "Zeravshan Valley", 1892 (D. Glazunov), 1 ♀, ZIN - 81; 05-07.1914 (V. Malyshev), 1 ♀, ZIN - 1170; 1871 (A. P. Fedchenko), 1 juv., ZM Tb 407; and 1 ♂, 1 ♀, ZM - Tb - 410. Gorno-Badakhshanskaya AO: Lake Karakul', 26.07.1915 (S. Tsarevsky), 2 juv., ZIN - 1258; Rung (in Pyandzh Valley), 07.1901 (N. B.), 1 juv., ZM - Tb - 110; Lake Sarez, 3270 m, 30.06.1958 (K. B. Gorodkov), 1 juv., ZIN - 1873; Vanch (= Vadzh), 1.08.1915 (V. Ya.Lazdin), 1 ♀, ZIN - 1163.

Turkmenia. Chardzhou Region: Charagasy, 9-10.05.1910 (N. Z.), 1 pul., ZIN - 1154; Kelif, 5.05.1910 (id.), 1 ♀, ZIN - 1151; 2-4.05.1910 (id.), 1 ♀, 1 pul., ZIN - 1256; Khodzhafil', 1200-1400 m, 9.05.1984 (A. V. Tanasevich), 2 juv., ZM - Tb - 344; Repetek (Birula 1911b; Pavlovsky 1934; Shestoporov 1934; Fet 1980), 30.04.1905 (E. Fischer), 2 ♂, ZIN - 1193; 07.1907 (E. N. Pavlovsky), 2 ♂, 1 ♀, 1 pul., ZIN - 1510; Saltyrykh

(on Amudarya River, 12 verst higher than Kelif), 11.05.1915 (V. Ya. ... 1 ♀, ZIN - 1160; Svintsovyi Rudnik, 05.1959 (Yu. B.), 3 ♂, 8 ♀, Krasnovodsk Region: Krasnovodsk (Pavlovsky 1934), 04.1905 ... ♀, ZIN - 1194; 3-5.07.1929 (V. S.), 1 ♂, ZIN - 1808.

Bukhara Region: Bukhara, 04-05.1925 (I. Sokolov), 1 ♂, 1 ♀; 1925 (id.), 1 ♀, ZIN - 1282; Kagan (Novaya Bukhara) (Kachan!), 12-15.07.1906 (M. Sparberg), 1 ♂, 1 ♀, ZIN ... 07.1929 (A. N. Zhelokhovtsev), 1 ♂, ZM - Tb - 438; Karaulbazar, ... (N. V.), 1 ♂, 1 ♀, 1 juv., ZM - Tb - 186; 1981 (id.) 1 ♂, 2 ♀, 2 juv., ... Tb - 459. Ferghana Region: Andizhan (Birula 1900c), 1900 (A. ... ashiyev), 1 ♂, 2 ♀, ZIN - 1197; year? (Voskoboinikov), 1 ♂, ZM - Tb - 131; Ferghana (= Novyi Marghilan) (Birula 1900c), 1894 (L. G. Ban'kovsky), 1 ♂, 2 ♀, ZM - Tb - 58; 1896 (id.), 1 ♂, 2 ♀, 4 juv., ZM - Tb - 63; 1894 (id.), 2 ♀, 3 juv., ZM - Tb - 66; 1894 (id.), 2 ♂, 1 ♀, ZM - Tb - 103; 1894 (id.), 3 ♂, 2 ♀, 3 juv., ZM - Tb - 109; 1894 (id.) 1 ♂, 2 ♀, ZM - Tb - 146; Kirovo (= Posyetovka), 9.04.1928 (E. and V. Kuznetsov), 1 ♀, ZIN - 1277; 8.04.1928 (id.), 1 juv., ZIN - 1279; Kokand (Birula 1911b), 12.07.1928 (id.), 1 ♂, ZIN - 1278; year? (Anisimov), 1 ♀, 1 juv., ZIN - 1503; 1981 (N. V.), 1 ♂, 1 ♀, ZM - Tb - 181; Shakhimardan, 28-29.05.1893 (Trotsina), 5 ♂, 3 juv., ZIN - 79; Kashkadarya Region: Chapug (on Tan khazdarya River) (Birula 1904a), 14.07.1896 (L. B.), 3 ♀, 1 juv., ZIN - 1885; Karshi, 18.04.1885 (G. T. Grumm-Grzhimailo), 3 ♂, ZIN - 83; Kitab, 30.05.1969 (Yu. B.), 1 ♀, 2 juv., ZIN - 1558; and 3 ♂, 2 ♀, ZIN - 1560; Shakhriyabz, 26.05.1928 (S. Dyakonov), 1 ♀, ZIN - 1286; 12.05.1928 (id.), 1 ♂, ZIN - 1287. Namangan Region: Namangan (= Skobelev), 15.06.1927 (E. and V. Kuznetsov), 1 ♀, ZIN - 1280; Ugursai, 10.04.1985 (S. V. Ovchinnikov), 1 ♂, 1 ♀, ZM - Tb - 394. Navoi Region: Kanimekh, 29.08.1928 (Burachek), 6 ♀, 1 juv., ZIN - 1283; 5.07.1928 (id.), 1 ♀, ZIN - 1284; Karakuduk Well (Birula 1911b), 23.07.1907 (N. Z.), 1 pul., ZIN - 1493; Karmana (see Samarkand Region, Ziadin); Palvankuduk Well (Birula 1911b), 19.07.1907 (N. Z.), 1 juv., ZIN - 1243; Tokhtysai, 10.08.1915 (V. Peltz), 1 ♂, ZIN - 1172. Samarkand Region: Aktash, 18.05.1969 (Yu. B.), 1 ♀, ZIN - 1539; Amankutan, 30.05.1969 (id.), 2 ♀, ZIN - 1589; Dzhuma, 04.1910 (V. Peltz), 1 ♀, ZIN - 1171; Samarkand (Birula 1900c, 1911b), 1871 (collector?), 1 ♀, ZIN - 80; 1895 (L. B.), 1 ♀, ZIN - 97; 03.1896 (id.), 3 juv., ZIN 98; 02.1896 (id.), 2 juv., ZIN - 99; 21.03.1896 (id.), 1 ♂, 1 ♀, ZIN - 100; 05.1896 (id.), 1 ♀, ZIN - 1195; 4.10.1896 (id.), 1 ♂, ZIN - 1288; 15.07.1908 (E. N. Pavlovsky), 2 ♂, ZIN - 1502; year? (I. Sokolov), 1 juv., ZIN - 1511; 1910 (L. B.), 2 ♀, ZIN - 1628; 2.08.1933 (P. Vel'tishchev), 1 juv., ZIN - 1668; 1871 (A. P. Fedchenko), 1 ♀, ZM - Tb - 60 and 2 ♀, ZM - Tb - 68; year? (A. N. Kharuzin), 1 ♂, ZM - Tb - 62; the way from Ziadin (= Ziadhan) to Karmana (= Kormine) (Birula 1911b), 25-27.07.1906 (M. Sparberg), 3 juv., ZIN - 1168; 27.07.1906 (id.), 2 ♂, ZIN - 1507; Peishambe, 12.09.1871 (A. B. Fedchenko), 6 juv., ZM - Tb - 403. Surkhandarya Region: Akrobat, 29.04.1897 (A. Kaznakov), 1 ♀, ZIN - 1184; Babatagh Mts, 1897 (id.), 1 ♀, ZIN - 1187; 24.05.1970, "10 km south from Isambai" (Yu. B.), 1 ♂,

1 ♀, ZIN - 1562; Baisun, 7.05.1969 (id.), 2 ♀, 1 juv., ZIN - 1655; Denau, 17.06.1930 (V. G. Heptner), 1 ♂, ZM - Tb - 435; 31.05.1930 (id.), 1 juv., ZM - Tb - 436; Derbent, 1-7.06.1912 (A.N. Kirichenko), 1 ♀, 2 juv., ZIN - 1166; 28.04.1912 (id.), 1 ♂, 1 ♀, ZIN - 1167; Igarchi, 1897 (A. Kaznakov), 1 ♂, ZIN - 1183; Kampyrtepe, 18.05.1910 (N. Z.), 3 ♀, ZIN - 1153; 20.05.1984, 1400-1600 m (A. V. Tenasevich), 1 ♀, ZM - Tb - 343; Khazretbaba (in Babatagh Mts), 5.05.1910 (N. Z.), 1 ♀, ZIN - 1151; 2-4.05.1910 (id.), 1 ♀, 1 pul., ZIN - 1256; Kugitang Mts, 19.05.1910 (N. Z.), 2 ♀, ZIN - 1152; 20.05.1910 (id.), 1 ♀, 2 juv., 8000', ZIN - 1155 and 8 ♀, ZIN - 1157; Sangardak, 20.06.1896 (L. B.), 2 ♂, 7 ♀, 8 juv., ZIN - 1177; Sarypul' (Birula 1904a), 1897 (A. Kaznakov), 1 ♂, 2 ♀, ZIN - 1186; "the way from Talbar to Sarypul" 1897 (id.), 2 ♀, ZIN - 1185; Termez, 31.05.1910 (N. Z.), 1 ♀, ZIN - 1158; 12.06.1928 (E. N. Pavlovsky), 2 ♀, ZIN - 1696. Tashkent Region: Almazar (= Vrasskaya) /Birula 1911b (Vreyskaya!)/, 1904 (G. Nasibyants), 1 juv., ZIN - 1506; Chirchik (Birula 1911b); Khodzhikent (= Khodzhakent) (Birula 1911b), 31.05.1907 (N. Z.), 1 ♀, ZIN - 1492; Tashkent (Birula 1900c, 1911b), year? (A. Nikolsky), ZIN - 87; 2.07.1924 (O. Martynová), 1 ♀, ZIN - 1259; 04.1907 (N. Z.), 3 ♀, ZIN - 1488; 15.09-1.10.1907 (id.), 1 ♀, ZIN - 1489; 10-20.11.1907 (id.), 1 juv., ZIN - 1490; 1916 (V. Sh.), 1 ♀, ZIN - 1634; 29.04.1929 (collector?), 1 juv., ZIN - 1665; 1929 (V. Shardakov), 7 juv., 2 ♀, 8 ♂, ZIN - 1876; 1871 (A. P. Fedchenko), 3 ♀, 2 juv., ZM - Tb - 14; (37 verst from Tashkent", 1905 (Bodungen), 1 ♂, 1 ♀, ZIN - 1491.  
IRAN, CHINA (North-West).

#### 2 d. M. c. przewalskii Birula 1897

##### Synonymy.

*Buthus caucasicus przewalskii* Birula 1897: 387 /North-West China, Lake Lobnor and Oasis Cherchen, syntypes: 5 ex., ZIN - 545 (111)/, 1900c: 11, 1917a: 71, 1927b: 204.

*Buthus caucasicus przewalskii* Birula 1904a: 24, 1904b: 31.

*Buthus przewalskii* —. Kishida 1939: 44.

*Mesobuthus caucasicus przewalskii* —. Vachon 1958b: 150; Pérez 1974: 25.

Distribution. USSR Tadjikistan. Leninabad Region: Zeravshan Valley (Birula 1904b), 14.04.1892 (D. Glazunov), 2 ♀, ZIN - 108; Mussatoi, 14.04.1892 (id.), 1 ♀, ZIN - 109; Kolmatoi, 14.04.1892 (id.), 1 ♀, ZIN - 110, "Ferghana" (Birula 1904b), LOC. INCERT.

Uzbekistan. Tashkent Region: Chinaz 1878 (Russov), 1 ♂, 2 ♀, 1 juv., ZIN - 107; Tashkent, 1887 (Lidski), 1 ♀, ZIN - 105; 1876 (N. A. Severtsov), 1 ♀, ZIN - 106.

CHINA, MONGOLIA.

##### Notes.

1. The subspecies and its differences from *M. c. intermedius* require special study.
2. The species level was established by Kishida (1939) without any

comparative revisions.

### 2 e. *M. c. fuscus* (Birula 1897)

#### Synonymy.

*Buthus fuscus* Birula 1897: 388 (Tadzhikistan).

*Buthus caucasicus fuscus* —. Kraepelin 1899: 25.

*Buthus caucasicus fuscus* Birula 1904a: 23, 1904b: 31, NEW SYNONYMY.

*Mesobuthus caucasicus fuscus* —. Vachon 1958b: 150.

#### Distribution.

USSR. Tadzhikistan. Dushanbe Region: Gissar (Birula 1897, 1904B), 1887 (Lidasky), 1 ♀, ZIN - 532; Iskanderaryk (Birula 1897, 1904b), 1887 (id.) 2 ♀, ZIN - 533; Varzob River and Siuma River Valleys (Birula 1904a), 8.07.1896 (L. B.), 1 ♂, 1 ♀, 4 juv., ZIN - 1203.

### 2 f. *M. c. kaznakovi* (Birula 1904)

#### Synonymy.

*Buthus kaznakovi* Birula 1904a: 21, 1904b: 32, 1911b: 167, 1917a: 71.

*Buthus caucasicus kaznakovi* Birula 1910: 120, NEW SYNONYMY.

*Mesobuthus caucasicus kaznakovi* —. Vachon 1958: 150 (kaskanovi!).

*Mesobuthus kaznakovi* —. Pérez 1974: 26.

Distribution. USSR. Tadzhikistan. Dushanbe Region: Chil'dara (Birula 1904a), 30.05-17.06.1897 (A. Kaznakov), 1 ♀, ZIN - 1254; Kulyab Region: the way from Sarypul' to Talbar (Birula 1904a), 28-29.05.1897 (id.), 1 ♂, ZIN - 1251. Gorno - Badakhshanskaya AO: Shakh dara (Birula 1904a), 08.1987 (id.), 40 ex., ZIN - 1252; and 1 ♀, with pulli, ZIN - 1253; Karasu River near Amudarya, 1-3.05.1897 (id.), ZIN - 1255.

## 7. Genus *ORTHOCHIRUS* Karsch 1892

#### Synonymy.

*Orthochirus* Karsch 1892: 306 /nomen substitutum pro *Orthodactylus* Karsch 1881, nomen praeoccupatum; type species *Androctonus scrobiculosus* Grube 1873, sub *Orthodactylus olivaceus* Karsch 1881, designated by Levy and Amitai (1980)/; Kraepelin 1895: 77; Birula 1898b: 210; Simon 1910: 77 (= *Butheolus*, in part); Birula 1917a: 4, 1917b: 55, 1918: 35, 1927a: 83; Borelli 1928: 353; Pallary 1929: 139, fig. 1 B; 1934: 96; fig. 3B; Pavlovsky 1934: 201; Werner 1934: 266, Abb. 235; Kästner 1940: 232; Roewer 1943: 208; Vachon 1949: 134, fig. 293-311, 1952: 220, 1958b: 166, 1966: 213; Stahnke 1972: 129, fig. 14; Vachon 1974: 906; Lamoral and Reynders 1975: 514; Levy and Amitai 1980: 93; Tikader and Bastawade 1983: 113; Francke 1985: 11.

*Orthodactylus* Karsch 1881: 90 /nec Hitchcock 1858: 113, Reptilia (?)/; Kraepelin 1891: 156; Pocock 1889: 117.

*Butheolus* Simon 1883 (in part), 1889: 386; Pocock 1890: 121 (in part) Simon 1892: 84 (in part); Pocock 1893: 306 (in part); Laurie 1896 (in



part); Pocock 1897: 108; Kraepelin 1899: 34 (in part); Radde 1899: 480; Birula 1900b: 373, 1900c: 13; Pocock 1900: 28; Birula 1903b: 74, 1904b: 32; 1905a: 145, 1905b: 125, 1908: 145 (in part), 1911b: 174.

*Butheolus (Orthochirus)* —. Werner 1936c: 204.

Distribution. USSR, North and East Africa, Middle East, Iran, Afghanistan, Pakistan, India.

### 1. *Orthochirus scrobiculosus* (Grube 1873)

#### Synonymy.

*Androctonus scrobiculosus* Grube 1873: 56 /"Lenkoran" — erroneously: probably Krasnovodsk in Turkmenia; the type was deposited in Museum of Breslau (= Wrocław) University and was examined by A. A. Birula (1917a: 5, 1917b: XIV)/.

*Androctonus melanurus* Kessler 1874: 16, tab. 1, fig. 1 - 3 /"Ustyurt, Kyzylkum Desert, Transcaspia"; syntypes: Kazakhstan, Mangyshlak Region: Novoalexandrovsckoye, year? (A. Lehman), 2 ♀, ZIN - 666; Chimkent Region, Kyzylkum Desert, 1873 (M. Bogdanov), 1 ♀, ZIN - 667; Turkmenia, Krasnovodsk Region: Krasnovodsk, year? (Göbel), 3 ♂, 3 ♀, ZIN - 690; all these samples have original label "Androctonus melanurus n. sp. teste Kessler", and the sample ZIN - 666 is designated as "typus"/; Alimdzhanov and Bronstein 1956: 92.

*Buthus schneideri* L. Koch 1878: 6, Taf. 2, fig. 4 /Krasnovodsk; type in Mus. natn. hist. natur., Paris, examined by G. Levy (Levy and Amitai 1980: 95)/; Simon 1879: 99.

*Orthodactylus olivaceus* Karsch 1881: 91 /"Sicilia" — erroneously: probably Palestine (Caporiacco 1950b; Levy and Amitai 1980), the type in Zool. Mus. Berlin, 1 ♀, ZMB 3629 (Moritz and Fischer 1980), seen/.

*Orthodactylus schneideri* —. Karsch 1886: 75 (= olivaceus); Pocock 1889: 117, pl. 13, fig. 5 (= aristidis); Kraepelin 1891: 215, Taf. 1, fig. 13, 15; Taf. 2, fig. 21.

*Butheolus conchini* Simon 1889: 336 /"Transcaspia, Bely-Bugor, 17.04.1886", leg. probably by A. Conchin; now: Turkmenia, Ashkhabad Region: Akdepe; type in Mus. natn. hist. natur., Paris, examined by G. Levy (pers. comm.); the syntype in State Museum of Georgia, Tbilisi, with the label "27.04.1886, Butheolus melanurus conchini, N 2584, det. A. Birula", seen/; Pocock 1897: 110; Kraepelin 1899: 36; Radde 1899: 480.

*Butheolus melanurus* —. Pocock 1890: 121; Birula 1896: 230 (= schneideri); Pocock 1897: 110; Kraepelin 1899: 35, fig. 18; Birula 1900b: 373, 1900c: 13; Pocock 1900: 28; Kraepelin 1901: 267; Birula 1903a: 74, 1904b: 32, 1905a: 145, 1905b: 125; Fausek 1906: 146, fig. 53, 1913: 238, fig. 37; Kraepelin 1913: 131; Bodenheimer 1937: 235; Caius 1938: 579; Kästner 1940: 231; Pérez 1974: 20.

*Orthochirus schneideri* —. Karsch 1892: 306.

*Orthochirus melanurus* —. Kraepelin 1895: 84; Pocock 1895: 295; Birula

1898b: 281 (= olivaceus; = conchini), 1908: 145; Tikader and Bastawade 1983: 134.

*Butheolus schneideri* —. Radde 1899: 480.

*Butheolus scrobiculosus* —. Birula 1909a: 356 (= melanurus), 1910: 170, 1911b: 174; Penther 1912: 114.

*Orthochirus innesi* Simon 1910: 79 (in part: Israel) /the type in Mus. natn. hist. natur., Paris, from Gebel Mokattam near Cairo, Egypt, examined by G. Levý (Levy and Amitai 1980: 94)/.

*Orthochirus scrobiculosus* —. Birula 1917a: 3, 1917b: VI, 1918: 35, 1927a: 83; Pavlovsky 1931: , 1934: 201; Shestoporov 1935: 192; Vlasov 1937b: 242; Dubinin 1946: 98; Whittick 1947: (= innesi); Vinogradov 1948: 305; Vachon 1949: 136, fig. 299, 1952: 224; Dubinin 1954: 292; Vachon 1958b: 166, fig. 47; Khalaf L. 1962: 2; Khalaf K. 1963: 59; Vachon 1966: 214; Farzanpay and Pretzmann 1974: 216; Pérez 1974: 28; Orlov et al. 1977: 5; Sabirova 1978: 15; Fet 1980: 225; Levy and Amitai 1980: 94 (= innesi, in part, pro ssp. negebensis); Sabirova 1981: 29; Orlov and Vasilyev 1983a: 9, fig. 9; Vasilyev and Orlov 1983: 72; Fet 1984: 41; Kuznetsov 1984a: 264, 1984b: 163; Kinzelbach 1985: 4; Nenilin and Irgashev 1986: 336.

*Orthochirus innesi negebensis* Shulov and Amitai 1960: 117 (Israel).

Distribution. USSR. Kazakhstan. Chimkent Region: Golodnaya Steppe (Birula 1898b); "Kyzylkum" (see O. s. melanurus); Pakhtaaraal (Dubinin 1946). Mangyshlak Region: Karatau (see O. s. scrobiculosus); "east shore of Caspian Sea", 13.05.1966 (Yu. Kabanov), 1 ♀, ZM - Tb - 396; Mangyshlak Peninsula (Birula 1898b), 9.05.1966 (Yu. Kabanov), 1 ♂, 2 ♀, ZM - Tb - 399; Novoalexandrovskoe (see O. s. melanurus); "the shore of Caspian Sea between Cape Sagyndyn and Cape Karamandy", 13.05.1966 (Yu. Kabanov), 3 ♂, 5 ♀, 3 juv., ZM - Tb - 393. Syrdarya Region: Dzhulek (see O. s. melanurus).

Russia. (LOC. ERR.?), see O. s. scrobiculosus.

Tadzhikistan. Kurgantube Region: Gandzhino, 9.06.1961 (Yu. B.), 1 ♀, 2 juv., ZIN - 1541; 10 km North-east from Garavuti, 22.04.1984 (S. L. Sonnstein), 1 ♀, ZM - Tb - 397; Kabodiyon (see O. s. concolor); 15 km from Kyzylkala, way to Shaartuz, 18.05.1985 (Exped. Inst. Zool. Acad. Sci. Ukr. SSR), 1 ♀, ZM - Tb - 395; Reserve "Tigrovaya Balka", year? (Yu. B.), 1 juv., ZIN - 1700; 6.06.1975 (V. V. Gorbатовsky), 1 juv., ZM - Tb - 408. Leninabad Region: Leninabad (see O. s. melanurus).

Turkmenia. Ashkhabad Region: Akdepe (see O. s. scrobiculosus); Akhalteke (Birula 1898b), (see O. s. melanurus); Anau (G. T. Kuznetsov, pers. comm.); Ashkhabad, 4.05.1928 (V. V. Gussakovsky), 1 juv., ZIN - 1359; year? (O. von Rosen), 1 ♀, ZM - Tb - 79; Bagir, 3.05.1985 (Exped. Inst. Zool. Acad. Sci. Ukr. SSR), 1 ♀, ZM - Tb - 471; Bakharden, 4.03.1982 (K. M.), 1 juv., ZM - Tb - 381; (Chuli, 26.09.1930) (L. Bianchi), 1 juv., ZIN - 1718; Gaudan (G. T. Kuznetsov, pers. comm.); Germab, 8.05.1971 (Yu. B.), 1 ♀, 2 juv., ZIN - 1706; Gyaurs, 5.04.1984 (V. V. Yanushev), 1 ♀, ZM - Tb - 384; Kaakhka, 9.05.1974 (Yu. B.), 3 ♂, 1 ♀, ZIN - 1709; Lake Kurtli Reservoir (G. T. Kuznetsov, pers. comm.); Serakhs, 26.04.1985 (S. S., 1 juv., ZM - Tb - 385; Lake Sportivnoye Reservoir (G. T. Kuznetsov,

pers. comm.); Sultandepa (G. T. Kuznetsov, pers. comm.). Chardzhou Region: Repetek (Sabirova 1978; Fet 1980; see also *O. s. melanurus*), 1969-1973 (O. R. Sabirova), 1♂, 1♀, 3 juv., ZIN - 1705; 04.1967 (V. I. Kuznetsov), 1 juv., ZM - Tb - 388 and 1♀, ZM - Tb - 398, (see *O. m. s. melanurus*). Krasnovodsk Region: Aidere, near ruins Saparbakhar, 1200 m, 08.1980 (V. E. Kurilenko), 1♀, ZM - Tb - 382; Akhchakuima (Shestoperov 1935), 14.05.1974 (Yu. B.), 1♀, ZIN - 1703; Chandyr River, 24.04.1971 (id.), 1♂, 1♀, ZIN - 1710; Dzhebel (see *O. s. scrobiculosus*); Karabogazgol (see *O. s. scrobiculosus*); Kara-Kala, 8.08.1934 (V. A. Popov), 1♀, ZIN - 1708; 17-26.10.1985 (T. V. Lukarevskaya), 1 juv., ZM - Tb - 380; Khodzhakala (in Kizyl-Arvatsky District), 11.05.1984 (V. F.), 1 juv., ZM - Tb - 383; Kizyl-Arvat (Birula 1898b), (see *O. s. scrobiculosus*); Krasnovodsk (Birula 1898b), (see *O. s. scrobiculosus*); 13.06.1928 (V. V. Gussakovsky), 1♀, 1 juv., ZIN - 1358; 1925 (M. K. Laptev), 4♂, 6♀, 3 juv., ZIN - 1713; Meshed-Misrian, 22.04.1971 (Yu. B.), 2♂, 5♀, 4 juv., ZIN - 1565; Mollakara (see *O. s. melanurus*); Nebit - Dagh, 12.05.1987 (T. V. Pavlenko), 1♀, ZM - Tb - 531. Mary Region: Badghyz Reserve /various points within: Adamulen, 24.04.1985 (S. S.), 6♀, ZM - Tb - 386; Kizyldzhar, 16.04.1972 (Yu. B.), 1♂, ZIN - 1701; 09.1977 (V. M. Pakulin), 1♂, 2♀, ZM - Tb - 361; and 1♂, ZM - Tb 387; Lake Yeroilanduz, 19-21.04.1972 (Yu. B.), 1♀, ZIN - 1716; 28.09.1979 (A. Yu. Cellarius), 2♂, ZM - Tb - 359; 21.04.1978 (V. F.), 1♂, 1♀, ZM Tb - 360; Bairam-Ali 17.04.1972 (Yu. B.), 2♂, 4♀, ZIN - 1707, (see *O. s. melanurus*); Iolotan', year? (A. N. Safarov), ZIN - 1720, (see *O. s. melanurus*); Kushka (Birula 1898b), (see *O. m. melanurus*); Mary (G. T. Kuznetsov, pers. comm.); Morgunovka, 04.1971 (Yu. K. Gorelov), 1♂, 1♀, ZM - Tb - 358; Sultanbent, 30.05.1929 (V. S.), 1♀, ZIN - 1719; Takhtabazar (see *O. s. melanurus*). Tashauz Region: Chirishly, 26.09.1983 (O. Soyunov), 1♀, ZM - Tb - 390; Sarykamysh, 07.10.1985 (L. A. Mitroshina), 1 juv., ZM - Tb - 218; 04.04.1985 (id.), 1 juv., ZM - Tb - 219; 1-2.10.1984 (O. Soyunov), 1 juv., ZM - Tb - 391; 28.09.1984 (id.), 1 juv., ZM - Tb - 392; Shakhsem, 17.10.1985 (id.), 1 juv., ZM - Tb - 389.

Uzbekistan. Bukhara Region: Karaulbazar, 1981 (N. V.), 1♂, 1♀, ZM - Tb - 179. Fergana Region: Andizhan, 1920 (Ye. Tolotsky), 10♂, 10♀, ZIN - 1715. Kashkadarya Region: Karshi (Birula 1898b, see *O. s. concolor*). Navoi Region: Kanimekh (see *O. s. melanurus*); Kuldzhuktau, Biol. Station Acad. Sci. Uzb. SSR, 9-19.05.1974 (N. Ergashev), 1♂, 1♀, 3 juv., ZIN - 1711; Palvankuduk (see *O. s. melanurus*). Samarkand Region: "Dzhizaksky Uezd" (see *O. s. melanurus*); Ziadin (see *O. s. melanurus*). Surkhandarya Region: Bashkokaity (see *O. s. concolor*); Denau, 31.05.1930 (V. G. Heptner), 1 juv., ZM - Tb - 437; Patagissar (see *O. s. concolor*); Termez (see *O. s. concolor*). Karakalpakia; the shore of the Aral Sea, east from Komsomolskon-Ustyurt, 8.06.1972 (G. S. Medvedev), 3♂, 3♀, 2 juv., ZIN - 1702; 8.06.1972 (id.), 1♀, 1 juv., ZIN - 1717; Bel'tau (near Lake Karaterenga), 6.06.1972 (id.), 2♂, 2 juv., ZIN - 1714; Kaskaotol, on Ustyurt shore of the Aral Sea, spring 1933 (G. V. Nikolsky), 1♂, 1♀,

ZM - Tb - 125; 48 km east-south-east from Nukus, 28.05.1972 (G. S. Medvedev), 1♂, 2♀, 1 juv., ZIN - 1704.

ISRAEL, IORDANIA, IRAQ, IRAN, AFGHANISTAN, PAKISTAN (?), INDIA.

Notes.

1. The differences between *O. scrobiculosus* (Grube) and other species of this genus: *O. aristidis* (Simon), *O. innesi* Simon, *O. bicolor* (Pocock), *O. pallidus* (Pocock), *O. flavescens* (Pocock), are not exactly determined. A revision of this genus is highly required.

2. Intraspecific taxonomy of *O. scrobiculosus* (Grube) is very uncertain. G. Levy (Levy and Amitai 1980; Levy, pers. comm.) considers *Orthochirus conchini* (Simon) from Turkmenia as a good species. Except of subspecies listed below, there were described also two from Iran (*O. s. persa* (Birula 1900) and *O. s. dentatus* (Birula 1900, as variety)/, one from Iraq (*O. s. mesopotamicus* (Birula 1918)/, and one from Israel, *O. s. negebensis* (Shulov and Amitai 1960). Also the undescribed form is deposited in ZIN collection from Iran, labeled by A. Birula's hand as "*O. s. bachtiansis*". Criteria for subspecific delimitation are not clear; the status of subspecies is doubtful for the case of *O. s. scrobiculosus* (Grube) and *O. s. melanurus* (Kessler). Here below only labeled samples from A. Birula's collection are placed within certain subspecies; all new samples are listed above, without differentiation into subspecies.

3. *O. melanurus* (Kessler) found in Djibuti (Somalia) (Kraepelin 1901: 267) evidently is *O. aristidis* (Sim.) (Lamoral and Reynders 1975: 514).

**1a. *Orthochirus scrobiculosus scrobiculosus* (Grube 1873)**

Synonymy.

*Androctonus melanurus* Kessler 1874: 16 (in part)

*Androctonus scrobiculosus* Grube 1873: 56

*Buthus schneideri* L. Koch 1878: 6

*Orthodactylus schneideri* —. Karsch 1886: 75, 1891: 215

*Butheolus conchini* Simon 1889: 386; Pocock 1897: 110; Kraepelin 1899: 36; Radde 1899: 480; Pérez 1974: 20

*Orthochirus schneideri* —. Karsch 1892: 306

*Orthochirus melanurus* forma *a* typica Birula 1898b: 281 (= *schneideri*; = *conchini*)).

*Butheolus schneideri* —. Radde 1899: 480

*Butheolus melanurus* forma *typica* —. Birula 1900c: 13

*Orthochirus melanurus typicus* —. Birula 1900b: 374

*Butheolus melanurus conchini* —. Birula 1900b: 374, 1900c: 13, 1904b: 32, 1905a: 126.

*Butheolus scrobiculosus scrobiculosus* —. Birula 1909: 359 (= *Orthochirus melanurus* forma *a* typica; = *Butheolus melanurus conchini*).

*Orthochirus scrobiculosus scrobiculosus* —. Birula 1917a: 241, 1918: 39; Pavlovsky 1934: 201; Pérez 1974: 28; Levy and Amitai 1980: 94; Vasilyev and Orlov 1983: 76;

*Orthochirus conchini* ---. Birula 1927a: 83; Levy and Amitai 1980: 94; Distribution. USSR. Kazakhstan. Mangyshlak Region: Karatau, 5.06.1926 (B. Borgeman), 1 ♀, ZIN - 1360; Russia (LOC. ERR.): Orenburgh Region, Guberli Mts., year? (O. Hertz), 3 ♂, 2 ♀, ZIN - 696. Turkmenia. Ashkhabad Region: Akdepe (= Bely Bugor) (Simon 1889; Kraepelin 1899; Radde 1899); 27.04.1886 (A. Conchin?), 1 ex., State Museum of Georgia, no. 2584; Ashkhabad (Birula 1900b, 1904b). Krasnovodsk Region: Dzhebel, 26.04.1921 (L. Moritz), 1 ♀, ZIN - 1516; Karabogazgol (Pavlovsky 1934), 1895 (P. Maximovich), 1 ♂, ZIN - 694; Kizyl-Arvat (Birula 1900b, 1904b; Pavlovsky 1934), year? (A. P. Semyonov-Tyan-Shansky), 1 ♂, ZIN 693; Krasnovodsk (L. Koch 1878; Simon 1889; Radde 1899; Birula 1900b, 1904b; Pavlovsky 1934), year? (Göbel), 3 ♂, 3 ♀, ZIN - 690; 1879 (Grimm), 1 ♂, 1 ♀, ZIN - 691; 1881 (Becker), 2 ♂, 2 ♀, ZIN 692; 1900 (K. Ahnger), 2 ♂, 5 ♀, ZIN - 695; 05.1912 (N. A. Solovkin), 1 ♂, 1 ♀, ZIN - 697.

#### 1b. *Orthochirus scrobiculosus melanurus* (Kessler 1874)

##### Synonymy.

*Androctonus melanurus* Kessler 1874: 16 (in part)  
*Orthodactylus schmeideri* (nec Karsch 1886) Pocock 1889: 117 (= aristidis).  
*Orthochirus melanurus forma intermedia* Birula 1898b: 282  
*Orthochirus melanurus intermedius* ---. Birula 1900b: 373  
*Butheolus melanurus typicus* Birula 1900b: 373 (= *Orthochirus melanurus intermedius*); Pocock 1900: 29.  
*Butheolus melanurus forma intermedia* ---. Birula 1900c: 13  
*Butheolus melanurus melanurus* ---. Birula 1904b: 35, 1905a: 145  
*Butheolus scrobiculosus melanurus* ---. Birula 1909: 359 (= *Orthochirus melanurus forma intermedia*; = *Butheolus melanurus typicus*).  
*Orthochirus scrobiculosus melanurus* ---. Birula 1911b: 174, 1917a: 241, 1918: 40; Moritz 1922: 215; Birula 1927a: 83; Pavlovsky 1934: 201; Vachon 1958b: 166, 1966: 214.  
*Butheolus (Orthochirus) scrobiculosus melanurus* ---. Werner 1936c: 204  
*Orthochirus melanurus* ---. Tikader and Bastawade 1983: 134  
Distribution. USSR. Kazakhstan. Chimkent Region: "Kizylkum", 1873 (M. Bogdanov), 1 ♀, ZIN - 667. Mangyshlak Region: Novoalexandrovskoye (now in ruins, environs of Fort-Shevchenko), (Birula 1904b), year? (A. Lehman), 2 ♀, ZIN - 656. Syrdarya Region: Dzhulek, 4.05.1905 (Yu. Beckmann), 1 ♀, ZIN - 665 Tadzhikistan. Leninabad Region: Leninabad (= Khodzhen) (Birula 1911b), 14.04.1908 (N. Z.), 1 ♂, ZIN - 668. Turkmenia. Ashkhabad Region: Akhalteke (Pavlovsky 1934), 1896 (K. Ahnger), 1 ♂, 1 juv., ZIN - 659. Chardzhou Region: Repetek (Moritz 1922; Pavlovsky 1934), 3-5-04.1903 (E. Fischer), 1 ♀, ZIN - 657; 17.03.1915 (S. Tsarevsky), 1 ♀, ZIN - 663; 12.08.1915 (id.), 1 ♂, ZIN - 664. Krasnovodsk Region: Mollakara (Moritz 1922). Mary Region: Bairam-Ali (Pavlovsky 1934), 13.04.1904 (S. I. Bilkevich), 1 ♀, ZIN - 658; 1907 (K. Demokidov), 1 ♀, ZIN - 662; Iolatan' (Pavlovsky 1934), 18.03.1927

(V. Kizeritsky), 1 ♀, ZIN - 1361; Kushka, 15-22.05.1904 (K. Arris), 1 ♀, ZIN - 661; "Afghan border, south from Kushka", 1897 (K. Ahnger), 1 ♂, 1 ♀, ZIN - 660; Takhtabazar (Pavlovsky 1934). Uzbekistan. Navoi Region: Kanimekh, 8.08.1928 (A. Burachek), 1 ♂, ZIN - 1362; Palvankuduk Well (Birula 1911b), 20.07.1907 (N. Z.), 1 juv., ZIN - 666. Samarkand Region "Dzhizaksky Uezd", 1913 (V. Peltz), 1 ♂, ZIN - 669; "the way from Ziadin (= Ziadan) to Karmana (= Kormine) (Birula 1911b), 25-27.07.1906 (M. Sparberg), 2 ♂, ZIN - 670.

### 1c. *Orthochirus scrobiculosus concolor* (Birula 1898)

#### Synonymy.

*Orthochirus melanurus forma concolor* Birula 1898b: 282 (type: Uzbekistan, Kashkadarya Region: Karshi, ZIN - 645, see below).

*Butheolus melanurus concolor* —. Birula 1900b: 374, 1904: 32.

*Butheolus melanurus forma concolor* —. Birula 1900c: 13.

*Butheolus scrobiculosus concolor* —. Birula 1917a: 241, 1918: 40; Vachon 1958b: 167; Pérez 1974; Levy and Amitai 1980: 94.

*Orthochirus scrobiculosus bicolor* Birula 1927a: 83 (nec *Orthochirus bicolor* Pocock 1897), LAPSUS CALAMI.

Distribution. USSR. Tadzhikistan. Kurgantuyube Region: Kabodiyon, 13.06.1910 (N. Z.), 1 ♂, ZIN - 651. Uzbekistan. Kashkadarya Region: Karshi (Birula 1900b, 1904b), 05.1885 (G. T. Grumm-Grzhimailo), 1 ♀, ZIN - 645, "typus". Surkhandarya Region: Bashkokaity, 3.06.1910 (N. Z.), 1 ♂, 1 ♀, ZIN - 652; Patagissar, 15.05.1915 (V. Ya. Lazdin), 3 ♂, 3 ♀, ZIN - 650; Termez, 8.04.1913 (A. N. Kirichenko), 4 ♂, 3 ♀, 12 juv., ZIN - 646; 20-30.04.1913 (id.), 4 ♂, 2 ♀, 12 juv., ZIN - 647; 5.06.1913 (id.), 2 ♂, 4 ♀, 2 juv., ZIN - 649; 06.1915 (V. Ya. Lazdin), 1 ♀, ZIN 648.

## 8. Genus *PECTINIBUTHUS* Fet 1987

#### Synonymy.

*Pectinibuthus* Fet 1987a: 443, fig. 1-5 (type species *P. birulai* Fet 1987, by monotypy) (nec *Pectinibuthus* Fet in Orlov and Vasilyev 1983a: 9, 15, fig. 8).

*Pectinibuthus* Fet in Orlov and Vasilyev 1983a: 9, NOMEN NUDUM.

*Pectinibuthus* Fet 1984: 40, 1985: 76, NOMINA NUDA (the description of the genus was not given).

### 1. *Pectinibuthus birulai* Fet 1987

#### Synonymy.

*Pectinibuthus birulai* Fet 1987a: 443, fig. 1-5 (nec *P. birulai* Fet in Orlov and Vasilyev 1983a: 9, 15 fig. 8), type: Turkmenia, Repetek, ZIN - 1795.

*Pectinibuthus birulai* Fet in Orlov and Vasilyev 1983a: 9, NOMEN NUDUM.

*Pectinibuthus birulai* Fet 1984: 41, 1985: 76, NOMINA NUDA (the

description of the species was not given).

Distribution. USSR. Turkmenia. Chardzhou Region: Repetek, 16.10.1974 (A. Yu. Cellarius), 1♂, ZIN - 1795 (type); paratypes: 23.04.1974 (id.), 2♀, ZIN - 1796; 16.06.1974 (V. I. Kuznetsov), 1♀, ZIN - 1797; 21.07.1985 (V. F.), 1 juv., ZM - Tb - 357.

Note. In the work of Orlov and Vasilyev (1983a) the diagnosis and description of the genus and the species were published without authors, permission and with some mistakes; the type specimen was not designated.

### 9. Genus *PSAMMOBUTHUS* Birula 1911

#### Synonymy.

*Psammobuthus* Birula 1911a: 69 type specie *P. zarudnyi* Birula 1911. by monotypy), 1911b: 172, 1917a: 215, 1917b: 112, 1927a: 81, Werner 1934: 267; Birula 1937: 102; Vachon 1958a: 426; Stahnke 1972: 129; Pérez 1974: 29; Francke 1985: 12; Fet 1987a: 446. Distribution: see below.

#### 1. *Psammobuthus zarudnyi* Birula 1911

#### Synonymy.

*Psammobuthus zarudnyi* Birula 1911a: 69 (USSR: Uzbekistan, Tadzhikistan, syntypes ZIN - 615 and ZIN - 616, see below), 1911b: 172, 1917a: 215, 1917b: 112; Werner 1934: 271; Kästner 1940: 232; Vinogradov 1948: 305; Pérez 1974: 30; Orlov et al., 1977: 5; Fet 1980: 224, 1982: 1911; Orlov and Vasilyev 1983a: 29; Vasilyev and Orlov 1983:72; Nenilin 1986: 487; Nenilin and Irgashev 1986: 337; Fet 1987a: 446.

Distribution. USSR. Tadzhikistan. Leninabad Region: Kairakkum (Birula 1911a, 1911b), 28-31.05.1908 (N. Z.), 1♀, ZIN - 616. Uzbekistan. Andizhan Region: Mingbulak (Birula 1911a, 1911b), 13.08.1909 (id.), 1♂, ZIN - 615.

### II. Fam. *CHACTIDAE* Pocock 1893

#### Synonymy.

*Chactini* Pocock 1893: 306 (pro subfam.); Kraepelin 1894: 5 (pro subfam.); Lonnberg 1897: 187.

*Chactidae* -. Laurie 1896: 130; Kraepelin 1899: 160; Birula 1900b: 248, 1904b: 1917a: 99, 1917b: 55; Werner 1934: 284; Comstock 1940: 29; Kästner 1940: 234; Mello-Leitao 1945: 37; Millot and Vachon 1949: 428; Pérez 1974: 8; Francke 1985: 16.

Distribution. USSR. Crimea, Caucasus, Moldavia (?). South and Central Europe; Turkey; Mediterranean shores of North Africa; southern part of North America; Central and South America.

Note. This taxon is considered as artificial (Francke 1982), being close to *Vaejovidae* (the last also being artificial). Particularly, Mediterranean

subfamily *Euscorpinae* (*Chactidae*) is very close to Mexican *Megacormidae* (*Chactidae*) and to South-East Asian *Scorpiopsinae* (*Vaejovidae*). The detailed revision of all these taxa is required, including revisions of families, subfamilies and tribes.

#### Subfam. *EUSCORPIINAE* Laurie 1896

##### Synonymy.

*Euscorpini* Laurie 1896: 130.

*Euscorpinae*—. Kraepelin 1899: 162; Birula 1900b: 248, 1900c: 14, 1904b: 33, 1917a: 103, 1917b: 159; Hadži, 1931a: 136.

*Euscorpidae*—. Kraepelin 1901: 272, LAPSUS CALAMI

*Euscorpioninae* Werner 1934: 285; Kästner 1940: 235; Roewer 1943: 236; Millot and Vachon 1949: 428; Vachon 1950a: 189, 1952: 361, 1971: 712; Pérez 1974: 32; Kinzelbach 1975: 42; Francke 1985: 23; NEW SYNONYMY.

*Scorpioninae* (nec Latreille 1810) Lange 1969: 39, LAPSUS CALAMI.

Distribution. USSR: Crimea, Caucasus, Moldavia (?). South and Central Europe Turkey, North Africa (Mediterranean shores).

Note. This subfamily traditionally included two genera, *Euscorpius* Thorell 1876 and *Belisarius* Simon 1879 (Birula 1917b; Kinzelbach 1975). However, the last monotypic genus from West Pyrenees evidently does not belong to *Euscorpinae* (Francke 1982b: 57).

#### I. Genus *Euscorpius* Thorell 1876

##### Synonymy.

*Euscorpius* Thorell 1876: 15 (nomen substitutum pro *Scorpius* Hemprich et Ehrenberg 1829; type species *Scorpius carpathicus* Linnaeus 1767, by original designation); Simon 1879: 102; Karsch 1881: 90; Lankester 1885: 379 (pro subgenus); Kraepelin 1894: 153; Birula 1896: 230; Laurie 1896: 130; Kraepelin 1899: 162; Birula 1900b: 248, 1900c: 15, 1917a: 103, 1917b: 161; Werner 1934: 285; Kästner 1940: 235; Vachon 1952: 361, 1974: 915; Francke 1985: 8.

*Scorpius* Hemprich and Ehrenberg 1829b (pro subgenus), nomen praeoccupatum (nec *Scorpius* Lacepede 1802, Pisces); C. Koch 1837: 36, see. Note 1.

Distribution. USSR: Crimea, Caucasus, Moldavia(?). SPAIN, FRANCE, ITALY, SWITZERLAND, AUSTRIA, TCHEKHOSLOVAKIA, ROMANIA, BULGARIA, YUGOSLAVIA, ALBANIA, GREECE, TURKEY, MALTA, MOROCCO, ALGER, TUNIS, LIBYA, EGYPT, YEMEN (introduced).

Notes. 1. As I could establish, the name *Scorpius* (ex Plumier) Lacepede 1802 was used by this author only as a Pre-Linnean synonyme, and therefore the name *Scorpius* H. et E. 1829 is a valid one. But its restoration has no practical reasons because the name *Euscorpius* Thor. is now very common and stabile.

2. The genus is divided into three subgenera; *Euscorpius* s. str.



*Tetratrichobothrius* Birula 1917, and *Polytrichobothrius* Birula 1917.

**1a. Subgenus *EUSCORPIUS* Thorell 1876**

Synonymy.

*Euscorpium* Thorell 1876: 15 (pro genus); Birula 1917a: 104, 1917b: 164; mollot and Vachon 1949: 428; Vachon 1975: 639; Kinzelbach 1975: 15; Yusubov 1981: 75; Francke 1985: 8.

Distribution. USSR: Crimea, Caucasus, Moldavia (?); all areal of the genus, excluding Morocco, Alger and Yemen. Note. The number and volume of species included into this subgenus are not exactly determined. Birula (1917a: 167) had divided the subgenus to three "sections"; their status was not examined. The majority of modern authors receipt two species: *E. carpathicus* (L. 1767) and *E. germanus* (Schaeffer 1766), with numerous subspecies. A. Bonacina (1980) proved that *E. mingrelicus* (Kessler) is a separate species; as such it is included here; all data on *E. germanus* (Schaeff.) are listed in Appendix. Also I consider *E. mesotrichus* Hadzi and *E. candiota* Birula, reestablished by R. Kinzelbach (1875, 1982) to species level, to be forms (maybe subspecies?) of *E. carpathicus* (L.); so I receipt three species in this subgenus. The detailed revision is required, with examination of all criteria for species and subspecies.

**1. *Euscorpium carpathicus* (Linnaeus 1767)**

Synonymy.

*Scorpio carpathicus* Linnaeus 1767: 1137 (1♂, presumably the type, in collection of Linnean Society of London, "habitat in Montibus Carpathicus", probably South Romania; brief description see: Kinzelbach 1975: 35); Pallas 1795: 64; 1799: 475; Ferrari 1872: 657; Kondaraki 1875 (carphicus, LAPS. CAL.); Calinescu and Calinescu 1930: 1.

*Scorpio germanicus* Herbst 1800: 72 (Tirol).

*Buthus terminalis* Brullé 1832: 60, tab. 28, fig. 3 (South Greece).

*Scorpio aquilejensis* C. Koch 1836: 101, fig. 244 (Triest, Lekche).

*Scorpio rufus* C. Koch 1836: 103, fig. 235 (patria ignota).

*Scorpio concinnus* C. Koch 1836: 106, fig. 246 (patria ignota).

*Scorpio tergestinus* C. Koch 1836: 106, fig. 247-248 (Triest).

*Scorpio sicanus* C. Koch 1836: 108, fig. 249 (Sicily).

*Scorpius tauricus* C. Koch 1836: 6, tab. 111, fig. 255 /Crimea, type: 1♀, "Sturm's collection in Nürenberg" (Birula 1917b: 218), see subspecies/.

*Scorpius tergestinus*—. C. Koch 1838: 7; Gervais 1844: 68; C. Koch: 1850: 86; Fanzago 1872: 84, fig. 5.

*Scorpius carpathicus*—. C. Koch 1838: 9, fig. 256; Gervais 1844: 68; C. Koch 1850: 86.

*Scorpius banaticus* C. Koch 1841: 111, fig. 679-680 (Mehedia, South Carpathian Mts), 1850: 86.

*Scorpius niciensis* C. Koch 1841: 112, fig. 681 (Nice); 1850: 86; Ferrari

- 1872: 657 (sub *Scorpio Nizaeensis*).  
*Scorpius oravitzensis* C. Koch 1843: 17, fig. 765 (Oravitza, South Carpathian Mts), 1850: 86.  
*Scorpio terminalis*— Gervais 1844: 67.  
*Scorpius aquilejensis*— Gervais 1844: 68; C. Koch 1850: 86; Ferrari 1872: 85, fig. 6.  
*Scorpius rufus*— Gervais 1844: 68; C. Koch 1850: 86.  
*Scorpius sicanus*— Gervais 1844: 68; C. Koch 1850: 86; Ausserer 1867: 24; Fanzago 1872: 83, fig. 4.  
*Scorpius canestrinii* Fanzago 1872: 78, fig. 1, 1a, 1b (Sardinia).  
*Scorpio tergestinus* var. *austriacus* Ferrari 1872: 657 (Lower Austria)  
*Euscorpius carpathicus*— Thorell 1876: 15, 1877: 211 (= *concinus*; = *banaticus*; = *oravitzensis*; = *provincialis*); Pavesi 1878: 339; Simon 1879: 108, tab. 20, fig. 4; Karsch 1881: 90; Pavesi 1884: 455; Simon 1884: 351 (= *terminalis*); 1885a: (n.v.); 1885b: 214 (= var. *tergestinus*); Kraepelin 1894: 159; Taf. 2, fig. 68-69 (= *aquilejensis*; = *rufus*; = *sicanus*; = *niciensis*; = *canestrinii*; = *europaeus*; = *tauricus*; = *fanzagoi*); Cecconi 1895: 190; Kraepelin 1899: 164, fig. 47 (= *germanicus*); Birula 1900b: 250, 1900c: 15 (= var. *austriacus*); Kraepelin 1901: 273; Pavesi 1901: 79; Mallasz 1902: 170; Werner 1902: 604; Kulczynski 1903: 678; Yurinich 1904: 1; Penther 1906: 61 (= *candiota*); Zottu 1907: 326; Werner 1908: 121; Birula 1909: 518; 1910: 156, 1911b: 178; Masi 1912: 141; Pavesi 1912: 339; Borelli 1914: 463; Cavanna 1916: 223; Werner 1916a: 338; 1916b: 338; Birula 1917a: 105, 1917b: 165; Popescu-Voitesti 1918: 14; Calinescu 1922: 384; Lämmermayer and Höffer 1922 (n.v.); Menozzi 1923: 6; Giltay 1924: 55; Müller 1924: 199; Werner 1925: 209; Birula 1927: 27; Werner 1927a: 144, 1927b: 77; Zottu 1927: 101; Borelli 1928: 354; Caporiacco 1928a: 127, 1928b: (n.v.); Kästner 1928: 3, Abb. 67; Roewer 1928: (n.v.); Werner 1928: 294; Hadži 1929: 36; Werner 1929: 483; Hadži 1930a: 34, 1930b: 53, 1931a: 127, 1931b: 357; Berland 1932: 30; Giltay 1932: 1; Werner 1934: 285, Abb. 368, 1935: 295; Caporiacco 1936: 328; Werner 1936a: 17, 1936b: 193, 1937: 153; Kolosvary 1938: 586; Werner 1938: 534; Capra 1939: 202 (= ssp. *mesotrichus*); Strouhal 1939b: 79; Calinescu 1940: 14; Feytaud 1940: (n.v.); Kästner 1940: 235; Werner 1941: 115; Hadži 1943: (n.v.); Roewer 1943: 236; Schenkel 1947: 14; Sochurek 1947: 354; Strouhal 1947: 181; Vachon 1948: 60; Millot and Vachon 1949: 418; Calinescu and Bunescu 1950: 38; Caporiacco 1950b: 178 (= ssp. *oligotrichus*; = ssp. *polytrichus*); Vachon 1950a: 189; 1950b: 413, fig. 636, 1951: 49; Strouhal 1952: 1; Vachon 1952: 361, fig. 542; Calinescu 1956: 155; Bunescu 1959: 7; Taborsky 1959: 211; Tolunay 1959: 366; Lang 1960: 162; Berbec 1961: 52; Marcuzzi 1961: (n.v.); Taborsky 1961: 7; Friese and Königsmann 1962: 784; Milan 1962: 25; Vachon 1962: 348, fig. 1-3,5; Bogdan 1964: 70; Calinescu and Jana 1964: 162; Fridén 1964: 202; Vanden Eeckhoudt 1964: 29; Hadži 1965: (n.v.); Marcuzzi et al. 1965: 81; Zangheri 1966: 529; Szalay 1968: 16, fig. 9 (CD), 10 (A-B); Calinescu 1969: 85; Kinzelbach 1970: 351; Curcic 1971:

95; Ranzi 1971: 25; Curcic 1972: 83; Bobirnac and Jonescu 1974: 7; Cola and Freude 1974: 38; Pérez 1974: 32; Vachon 1974: 913, fig. 172; Kinzelbach 1975: 36 (s. str.; = koschevnikovi; = ssp. aegaeus; = ssp. ossae); Vachon 1975: 636, fig. 57; Valle 1975: 209; Costantini 1976: 121; Vachon and Jaques 1977: 412, fig. 14-17; Voulalas and Michalis 1977: 131; Vachon 1978: 321, fig. 1-7; Guerra 1979: 1; Bonacina 1980: 57; Dumitrescu 1980: (n.v.); Michalis and Kattoulas 1981: 109; Kinzelbach 1982: 52; Bonacina 1983: 3 (= germanus banaticus); Vachon 1983a: 25, 1983b: 77; Schmallfuss and Schawaller 1984: (n.v.); Sochurek 1984: 27; Fet 1985: 3; Kinzelbach 1985: 1; Scherabon 1987: 80; Sissom 1987: 272.

*Euscorpium terminalis*—. Karsch 1879: 102 (= naupliensis), 1881: 90; *Euscorpium fanzagoi* Simon 1879: 111, tab. 20. fig. 5 (East Pyrenees); Birula 1917a: 129, 1917b: 168; Caporiacco 1928: 127; Feytaud 1940; Millot and Vachon 1949: 430 ("dubious species").

*Euscorpium concinnus*—. Simon 1879: 113 (Italy).

*Euscorpium germanicus*—. Simon 1879: 113; Cavanna 1916: 223.

*Euscorpium carpathicus* var. *sicanus*—. Becker 1881: XXXIII; Cantoni 1881: 281.

*Euscorpium sicanus*—. Kulczynski 1887: 349; Birula 1917a: 129, 1917b: 168.

*Euscorpium scaber* Birula 1900c: 18 /Greece, Chalkidiki, Mt. Athos; syntypes; 1886 (A. N. Kharuzin), 1 ♀, ZIN - 1035 and 3 ♂, 2 ♀, 1 juv., ZM - Tb - 33, examined (Fet 1985)/, 1917a: 105, 1917b: 167; Pérez 1974: 34; Fet 1985: 3 ("status uncertain").

*Euscorpium koschevnikovi* Birula 1900c: 19 /Greece, Chalkidiki, Russik, Mt. Athos, Isle Proclos; syntypes; 1886 (A. N. Kharuzin), 1 ♀; ZIN 1000, and 1 ♂, 2 ♀, ZM - Tb - 36, examined (Fet 1985b)/, 1917a: 105, 1917b: 167; Pérez 1974: 34; Fet 1985: 3 ("status uncertain").

*Euscorpium tergestinus*—. Chyzer 1900: 2; Mallasz 1902: 170.

*Euscorpium banaticus*—. Chyzer 1900: 2; Mallasz 1902: 170.

*Euscorpium candiota* Birula 1903c: 298 /Crete, Candia; syntypes: 24.10.1898 (Bogolyubov), 8 ♂, 15 ♀, ZIN - 947; examined (Fet 1985b)/, 1917a: 129, 1917b: 167; Menozzi 1941: 235; Roewer 1943: 236; Pérez 1974: 32; Kinzelbach 1982: 52 /in part, as hybrid of *E. carpathicus* (L.) and *E. mesotrichus* Hadži; Fet 1985: 3 ("status uncertain").

*Euscorpium canestrinii*—. Cavanna 1916: 229; Birula 1917a: 129, 1917b: 168; Pérez 1974: 34.

*Euscorpium carpathicus mesotrichus* Hadži 1929: 36 (North shore of the Adriatic Sea), 1930a: 34; Curcic 1971: 96; Pérez 1974: 33.

*Euscorpium carpathicus oligotrichus* Hadži 1929: 37 (North Italy), 1930a: 35; Curcic 1971: 96.

*Euscorpium germanus polytrichus* Hadži 1929: 37 (Bosnia).

*Euscorpium carpathicus polytrichus* Hadži 1929: 37 (Bosnia), 1930a: 32, fig. 1-2; Curcic 1971: 95.

*Euscorpium carpathicus aegaeus* Caporiacco 1950b: 187 (Greece, Isle Antiparos).

*Euscorpium carpathicus ossae* Caporiacco 1950b: 209 (Greece, Mt. Ossa).

*Euscorpium mesotrichus*—. Kinzelbach 1975: 30 (= *tergestinus*; = *scaber* (?); = ssp. *polytrichus*); Michalis and Katoulas 1981: 109; Kinzelbach 1982: 52; Sochurek 1984: 27; Kinzelbach 1985: 4.

*Euscorpium germanus banaticus*—. Vachon and Jaques 1977: 412.

*Scorpio europaeus* (nec Linnaeus 1758, nec Latreille 1804) Scopoli 1763: 404 (?) (Bosnia); Kutorga 1834: 490 (Crimea); Rathke 1837: 18; Nordmann 1840: 751; Gervais 1844: 67; Kessler 1860: 196; MISIDENTIFICATION.

*Scorpius flavicaudis* (nec De Geer 1778) Lucas 1853: 527 (Crete); Raulin 1869: 672; MISIDENTIFICATION.

*Scorpius provincialis* (nec C. Koch 1836) Fanzago 1872: 81, fig. 3 (North Italia)? MISIDENTIFICATION.

*Euscorpium naupliensis* (nec C. Koch 1836) Karsch 1879: 102; MISIDENTIFICATION.

*Euscorpium ?germanus* (nec Schaeffer 1766) Tömösvary 1880: 160; Chyzer 1900: 2; MISIDENTIFICATION.

*Scorpio italicus* (nec Herbst 1800) Rudov 1897: 89; MISIDENTIFICATION.

*Euscorpium italicus* (nec Herbst 1800) Tarnani 1907: 30 (in part: Yalta); MISIDENTIFICATION.

Distribution. USSR: Crimea. SPAIN, FRANCE, ITALY, SWITZERLAND, AUSTRIA, TCHEKHOSLOVAKIA, ROMANIA, BULGARIA, YUGOSLAVIA, ALBANIA, GREECE, TURKEY, MALTA, TUNIS, LIBYA, EGYPT.

Notes.

1. The subspecific structure of this species is extremely complicated. The criteria for subspecies are not exactly determined. The last revision (Caporiacco 1950b) included 34 subspecies. In the USSR this species inhabits only southern Crimean Peninsula. Some data about Caucasus (Kraepelin 1899; Kästner 1940) are erroneous.

2. R. Kinzelbach (1975, 1985) considers J. Hadži's subspecies *E. c. mesotrichus* as separate species; this emendation, however, is not yet accepted by other authors (Vachon and Jaques 1977; Fet 1985b). Also R. Kinzelbach (1975: 26, 36) mentioned *E. ciliciensis* Birula twice, as synonym of both *E. carpathicus* (L.) and *E. germanus mingrelicus* (Kessler). I consider it subspecies of *E. mingrelicus* (Kessler) (see below).

**1a. *Euscorpium carpathicus tauricus* (C. L. Koch 1838)**

Synonymy.

*Scorpius tauricus* C. Koch 1838: 6, tab. 111, fig. 255 (Crimea); Gervais 1844: 68; C. Koch 1850: 86.

*Scorpio europaeus* var. *tauricus*—. Nordmann 1840: 751.

*Scorpio tauricus*—. Ferrari 1872: 658; Kessler 1876: 24; Köppen 1881: 219.

*Euscorpium tauricus*—. Simon 1879: 113; Birula 1896: 230, 1900b: 250, 1900c: 18, 1903d: XVI, 1904b: 33; Karatygin 1910: 122; Mokrzhetsky 1914: 14; Birula 1917a: 105, 1917b: 168, tab. 3, fig. 10, tab. 5, fig. 3-4; Puzanov 1927: 27, 1929: 104 (*Euscorpium*, LAPS. CAL.), 1949: 22; Lange

1969: 39; Pérez 1974: 32; Orlov et al. 1977: 5; Fet 1982: 1911; Vasilyev and Orlov 1983: 72; Orlov and Vasilyev 1983a: 6, fig. 4, 1983b: 62.

*Euscorpium carpathicum oligotrichum* Hadži 1930a (nec Hadži 1929), in part: Crimea, 2 ♀, det. J. Hadži; 1 ♀, year? (J. Lomnický), Alushta, (all in Mus. Zool. Inst. Polish Acad. Sci., Warsaw, examined), NEW SYNONYMY.

*Euscorpium carpathicum tauricum*— Caporiacco 1950b: 209; Valle 1975: 210 (probably a special form from the complex "E. c. carpathicum"); Fet 1985b: 7.

*Scorpio europaeus* (nec Linnaeus 1758, nec Latreille 1804) Kutorga 1834: 490; Rathke 1837: Nordmann 1840: 751; Kessler 1860: 196, MISIDENTIFICATION.

*Euscorpium italicum* (nec Herbst 1800) Tarnani 1907: 30 (in part: Yalta); MISIDENTIFICATION.

Distribution. USSR. Ukraine. Crimean Region: Alupka (Pallas 1799; Rathke 1837; Birula 1900b, 1900c, 1917b); Alushta, 17.06.1897 (from Simferopol' Museum), 1 ♂, 2 ♀, 2 juv., ZIN - 1429; 1921 (J. Lomnický), 1 ♀, (Zool. Inst. Acad. Sci. Pol., Warsaw); Artek (Birula 1917b); Bakhchisarai (K. A. Yefetov, pers. com.); Balaklava (Birula 1917b), 07.1898 (from Simferopol' Museum), 1 ♂, ZIN - 1427; Eupatoria (Birula 1900c, 1917b: delivered?); Frunzenskoye, 07.1984 (M. Eidelberg), 4 ♂, 9 ♀, ZM - Tb - 470; Gaspra 18.05.1926 (V. Lindholm), 1 juv., ZIN - 1430; 29.05.1926 (id.), 1 ♀, ZIN - 1431; 24.04.1932 (A. N. Reihardt), 1 ♀, ZIN - 1724; 15.05.1932 (id.), 1 ♂, 1 ♀, ZIN - 1727; 27.11.1923 (A. Dyakonov), 1 ♀, ZIN 1726; Inkerman (Kessler 1876; Birula 1900b, 1917b), 1863 (Kushakevch), 1 ♀, 1 juv., ZIN - 1035; Kerch' (K. A. Yefetov, pers. comm.); Nikitsky Botanical Garden, 10.06.1903 (collector?), 3 ♀, 1 juv., ZIN - 1428; 1982 (S. S. Sharygin), 2 ♀, ZM - Tb - 178; 20.06.1983 (id.), 3 ♀, ZM - Tb - 469; Oreanda (Birula 1900b, 1917b), 12.08.1976 (M. Usov), 1 juv., ZIN - 1041; Sevastopol' (Guthrie 1874; Birula 1900b, 1917a), 1893 (P. Yu. Schmidt), 1 ♀, ZIN - 1036; 21.06.1913 (collection of Sevastopol' Biol. Station, in stones delivered from Eupatoria), 1 ♂, 3 ♀, ZIN 1725; Simeiz (Birula 1917b), year? (V. Aggeenko), 1 ♀, ZIN - 1037; Simferopol' (delivered?) (Birula 1917b; K. A. Yefetov, pers. comm.), 17.06.1907 (A. N. Kirichenko), 1 ♂, ZIN - 1723; Sudak (Rathke 1837; Birula 1919b); Yalta (Kutorga 1834; Rathke 1837; Kessler 1860; Birula 1900b, 1903d; Tarnani 1907; Birula 1917b), 1982 (N. V.), 1 ♀, ZM - Tb - 466.

Notes. 1. In ZIN collection there are deposited, under No. ZIN - 1841, 2 ♂ and 2 ♀ of *Euscorpium carpathicum*, morphologically corresponding to *E. c. tauricum* (C. Koch), with a label "*Scorpio carpathicum concinnus* Koch. Awchasia, pr. Nordmann, Zool. Mus. Helsingfors". These specimens were obtained in 1938 from A. Nordmann's collection in Helsinki and, evidently, are of Crimean origin. In Abchasia (Georgia) only *E. mingrelicum* (Kessler) and *E. italicum* (Herbst) are found.

2. E. Simon (1879) erroneously mentioned "Taurus" (instead of "Tauria") as the locality of *E. tauricum*.

## 2. *Euscorpium mingrelicus* (Kessler 1876)

### Synonymy.

- Scorpius bosnensis* Möllendorff 1873: 22 (Bosnia); Chyzer 1900: 2 (see Note 2); NEW SYNONYMY.
- Scorpio mingrelicus* Kessler 1876: 25 (Transcaucasia) (types unknown), Köppen 1881: 219.
- Euscorpium picipes* Simon 1878: 158 (West Transcaucasia), 1879: 113; Köppen 1881: 220.
- Euscorpium mingrelicus*—: Birula 1896: 230 (= *picipes*), 1898a: 138, fig. 2; Kraepelin 1899: 165; Radde 1899: 478; Birula 1800b: 251, 1900c: 219, 1903a: 17; Kulczynski 1903: 678; Birula 1904b: 33, 1905b: 129; Tarnani 1907: 30; Birula 1911b: 177; Nesterov 1911: 0144; Birula 1912: 126; Leister 1912: 2; Shugurov 1912: 105; Birula 1917a: 122, fig. 10; 1917b: 192, fig. 19b, tab. 3, fig. 7-8; tab. 5, fig. 1-2; Leister 1933: 341; Capra 1939: 201; Richter 1945: 31; Vachon 1947a: 162, 1947b: 26; Mkheidze 1960: 184; Kobakhidze 1964: 8; Mkheidze 1968: 214; Lange 1969: 39; Khalilova and Monina 1973: 34; Pérez 1974: 32; Orlov et al. 1977: 5; Vachon and Jaques 1977: 414; Bonacina 1980: 47, fig. 1-4 (= *germanus gamma*; in part; = *germanus historum*); Fet 1982: 1911; Bolokan 1984: 203; Fet 1987c: 313.
- Euscorpium ciliciensis* Birula 1898a: 136, fig. 1 /Turkey, Cilician Taurus, Bulghar Dag; syntypes: 1897 (M. Holtz), 2 ♀, ZIN - 956, and 08.1897, Karagöl, 2600 m (id.), 2 ♂, 1 ♀, 1 juv., ZIN - 957; examined (Fet 1985b); Kraepelin 1899: 165; Birula 1900c: 16; Werner 1902: 605; Kulczynski 1903: 679; Birula 1910: 170, 1917a: 105, 1917b: 167; Capra 1939: 201; Vachon 1947a: 162, 1947b: 26; Caporiacco 1950b: 223; Vachon 1966: 214; Pérez 1974: 32 (*ciliciensis*!); Bonacina 1980: 49; Fet 1985b: 3; NEW SYNONYMY.
- Euscorpium germanus gamma* Caporiacco 1950b: 211 (in part: Italia, Slovenia).
- Euscorpium germanus historum* Caporiacco 1950b: 214 (Yugoslavia)
- Euscorpium germanus mingrelicus*—: Caporiacco 1950b: 229; Vachon 1951a: 342; 1966: 214; Kinzelbach 1975: 27, 1982: 59; Orlov and Vasilyev 1983a: 6, fig. 5; Fet 1985: 3.
- Euscorpium germanus ciliciensis*—: Vachon 1951a: 342; NEW SYNONYMY.
- Euscorpium mingrelicus boninoi* Bonacina 1980: 73 (nom. nov. pro *E. germanus historum* Caporiacco 1950) NEW SYNONYMY (see Note 1).
- Euscorpium germanus* (nec Schaeffer 1766) Kulczynski 1903: 679; MISIDENTIFICATION.
- Euscorpium germanicus mingrelicus*—: Vasilyev and Orlov 1983: 72; Orlov and Vasilyev 1983b: 62; LAPSUS CALAMI.
- Distribution USSR: Caucasus, Moldavia (?). ITALIA, YUGOSLAVIA, TURKEY; probably also GREECE and BULGARIA.
- Notes. 1. This species was re-established in species status by A. Bonacina (1980), and was separated into several subspecies: nominal, *E. m.*

*mingrelicus* (Kessler 1876) (Caucasus, Turkey), *E. m. phrygius* Bonacina 1980 (Turkey), *E. m. caporiaccoi* Bonacina 1980 (Bosnia), *E. m. caprai* Bonacina 1980 (Italia, Slovenia) (as the part of former *E. germanus gamma* Căporiacco 1950), and *E. m. boninoi* Bonacina 1980 (Yugoslavia). The last subspecies was named against existing rules, and must be called *E. m. histrorum* (Caporiacco 1950), therefore its name becomes a synonyme. Here we consider *E. ciliciensis* Birula also a synonyme of *E. mingrelicus*, and it must be placed in subspecies also, *E. m. ciliciensis* (Birula 1898), COMB. NOV. In the USSR, from Caucasus, only *E. m. mingrelicus* is known; here below, a new subspecies is cited from Moldavia (under a question), *E. m. phrygius* Bonacina (see note to this subspecies).

2. The name *Scorpius bosnensis* Möllendorff 1873 is undoubtedly a synonyme of *E. mingrelicus* (Kessler), according to the original description (six trichobothria on the ventral side of the tibia of its chela). Nevertheless, this name was almost forgotten until R. Kinzelbach (1975) cited it as synonyme of *E. germanus*. A. Bonacina (1980) have shown that Bosnian population with six ventral trichobothria belongs to *E. mingrelicus*; so far as the last author described from Bosnia the new subspecies, *E. m. caporiaccoi*, we must state that *Scorpius bosnensis* Möllendorff is a synonyme of *E. mingrelicus* (Kessler), but not of any of its known subspecies. Naturally, it is a senior synonyme; but the name *Euscorpius mingrelicus* (Kessler) surely was used more than by five authors in more than ten works during last 50 years (as ICZN requires for its preservation).

## 2a. *Euscorpius mingrelicus mingrelicus* (Kessler 1874)

### Synonymy.

*Scorpio mingrelicus* Kessler 1874: 25. (see above).

*Euscorpius picipes* Simon 1878: 158. (see above).

*Euscorpius mingrelicus*— (in part; see above: Caucasus and Turkey).

*Euscorpius mingrelicus mingrelicus*— Bonacina 1980: 71.

Distribution. USSR. Georgia: Adzhemeti Reserve (Shugurov 1912; Birula 1917a), 29-31.08.1985 (V. F.), 28♂, 23♀, ZM - Tb - 202; Belogory (Birula 1912, 1917a); Bori (Birula 1917a); Gelati (Shugurov 1912; Birula 1917a); Kharagulsky District (Mkheidze 1960); Kutaisi (= Kutais) (Birula 1900d; Shugurov 1912; Birula 1917a, 1917b), 1893 (A. O. Kovalevsky), 1♂, 3♀, ZIN - 1015; Novo-Senaki (in Lower Rioni River) (Birula 1912, 1917a, 1917b); Tkibuli (= Tkivibuli) (Birula 1917b), 11.1894 (B. Kislyakov), 1♂, 1♀, ZIN - 1018; Tkibulsky District (Mkheidze 1968); Tsageri (Birula 1912, 1917b). Abkhazia: Duripsh, 9.09.1985 (I. A. Ushakov), 1♂, ZM - Tb 213; Gagra (Birula 1917a, 1917b), 08.1904 (Kharuzoy), 1♂, 2♀, ZIN 1001; 1904 (A. Skorikov), 1♂, 4♀, ZIN - 1002; 14.06.1912 (V. M. Isayev), 1♂, ZIN - 1007; 5-13.07.1894 (A. Skorikov), 1♀, ZIN - 1008; 7-8.06.1913 (I. I. Sokolov), 1♀, ZIN - 1020; 06.1916 (id.), 1♀, ZIN 1423;

Gagrusky Range, Mt. Mamdzyskha, 13.05.1960 (E. K.), 1 ♀, ZIN - 1721; Gudauta (Radde 1894; Birula 1905b, 1912, 1917b), 6.01.1907 (A. Kaznakov and A. Shelkovnikov), 2 ♂, 3 ♀, 2 juv., ZIN - 1425; Gumista River (Birula 1917a); Gumistinsky Reserve, 4.06.1982 (J. Bogac), 1 juv., ZM - Tb 214; Kvemo-Azhara (= Azhary) (Birula 1911b, 1917a, 1917b), 18.07.1905 (M. Kalishevsky), 12 ♀, ZIN - 1019 and 1 ♀, ZIN - 1031; 21.07.1905 (id.), 2 ♀, ZIN - 1028; 28.07.1905, (id.), 3 ♀, ZIN - 1024, 2 ♂, 9 ♀, ZIN - 1026, and 2 juv., ZIN - 1032; Lata (= Laty) (Birula 1911b, 1917a, 1917b), 1.09.1909 (Bryansky), 1 ♂, 3 ♀, ZIN - 1010; 18.08.1905 (M. Kalishevsky), 2 ♀, ZIN - 1030; 18.08.1905 (id.), 4 ♂, 4 ♀, ZIN - 1025; between Lata and Baghdadi Bridge, 20.08.1905 (id.), 1 ♂, 55 ♀, ZIN 1029; Novyi Anon, 06.1947 (N. G. Yerofeev), 8 ♂, 27 ♀, ZM - Tb - 205; Ol'ginskoye (near Tsebel'da), 20.05.1912 (V. Lindholm), 1 ♀, ZIN - 1422; Pitsunda, year? (L. Kotovski), 1 ♀, coll. Inst. Zool. Acad. Sci. Polon. Warsaw; Sukhumi (= Sukhum) (Birula 1900c, 1911b, 1917b), 18.11.1911 (F. A. Zaitsev), 1 ♂ juv., ZIN - 1855; 16.10.1911 (id.), 1 ♂, 3 ♀, ZIN 1859; "5 verst from Sukhum, Venetian Bridge on Besla River", 25.08.1905 (M. Kalishevsky), 2 ♂, 1 ♀, ZIN 1022; Suredi (on Supsta River), 14.08.1902 (K. S.), 2 ♀, ZIN - 1878; Tsebel'da (Birula 1911b, 1912, 1917b), 21.08.1905 (M. Kalishevsky), 4 ♀, ZIN 1027 and 4 ♀, ZIN 1957. Adzharia: Batumi (= Batum) (Radde 1889, Birula 1905b, 1917a, 1917b), 1893 (G. I. Radde), 1 ♂, 1 ♀, ZIN - 1013; Chorokh River (Birula 1917a); Machakhelistskali River, 22-23.05.1973 (Yu. B.), 3 ♂, 2 ♀, 5 juv., ZIN - 1537; Makhindzhauri, 12.05.1918 (W. Eichler), 1 ♀, (coll. Inst. Zool. Acad. Sci. Polon., Warsaw); Tsikhisdziri (Birula 1917b), 26.05.1912, (V. Lindholm), 1 ♀ juv., ZIN - 1419; 16.08.1914 (A. Bykov), 3 ♂, 1 ♀, ZIN - 1424; 24.10.1914 (id.), 1 ♂, 1 ♀, ZIN - 1426; 5.04.1912 (id.), 6 ♂, 6 ♀, 1 juv., ZIN - 1852; Zelyonyi Mys (Batumski Botanical Garden) (Fet 1987c), 4.06.1912 (V. Lindholm), 1 ♂, 2 ♀, ZIN - 1420; 25-29.08.1985 (V.F.), 141 ♂, 77 ♀, ZM - Tb - 203; 10.10.1981 (J. Bogak), 3 ♂, 1 ♀, ZM - Tb - 204; 16.08.1960 (L. Borutskaya), 1 ♀, ZM - Tb - 211; 13.10.1981 (S. I. Golovach), 1 ♂, ZM - Tb - 212; 28.06.1981 (A. Antropov), 7 ♀, ZM - Tb - 216.

Russia. Krasnodar Region: Khosta (Birula 1903d, 1912, 1917b), 04.1901 (A. Silant'ev), 2 ♂, 5 ♀, ZIN - 1016; 26.05.1929 (V. Lindholm), 1 ♂, ZIN - 1854; 5.04.1961 (E. K.), 1 ♀, ZIN - 1879; 16.09.1956 (I. M. Likharev), 1 ♂, 2 ♀, ZIN - 1881; 15-16.05.1985 (S. I. Golovach), 1 ♂, 4 ♀, ZM - Tb - 208; 5-10.05.1964 (I. I. Malevich), 3 ♀, ZM - Tb - 209; 22.05.1901 (A. Z.), 2 ♀, ZM - Tb - 465; Krasnaya Polyana (Birula 1917a, 1917b), 05.1907 (A. N. Kirichenko), 1 ♂, 1 ♀, ZIN - 1005; 23.05.1912 (V. Lindholm), 1 ♂, ZIN - 1421; 27.09.1932 (A. Gerasimov), 1 ♂, ZIN - 1882, 17.05.1985 (S. I. Golovach), 2 ♂, 2 ♀, ZM - Tb - 206; summer 1910 (V. V. Stein), 1 ♀, ZM - Tb - 207; Kudepsta (Fet 1987c); 06.1983 (N. V.), 30 ♂, 115 ♀, ZM - Tb - 201; Kuzebek, 06.1983 (id.), 14 ♀, ZM - Tb - 215; "Our Lady's Cave", near Khosta, 16.05.1985 (S. I. Golovach), 3 juv. ZM - Tb - 210; Sochi (Birula 1917b, 13.07.1900 (A. Bykov), 4 ♂, 24 ♀, ZIN - 1009; 06-07.1927 (I. Philip'ev), 2 ♂, 20 ♀, ZIN - 1853; 10.1935 (A. Gerasimov),



1 ♂, ZIN - 1856; 12.10.1932 (id.), 1 ♀, ZIN - 1883; Uchdere (Birula 1900b, 1903d, 1917a, 1917), year? (D. Glazunov), 1 ♀, ZIN - 1017.  
TURKEY.

**2b. *Euscorpium mingrelicus phrygius* Bonacina 1980**

Synonymy.

*Euscorpium mingrelicus phrygius* Bonacina 1980: 72, Tav. 1 (Turkey).

Distribution. USSR. Moldavia (?), 1863 (K. Jelsky), 2 ♀, coll. Inst. Zool. Polish Acad. Sci. Warsaw, examined. TURKEY.

Note. This subspecies was described from Turkey; two females from Warsaw museum completely coincides by morphology with this subspecies. The story of this sample is following: Polish zoologist and political emigrant Konstantin Jelsky worked in Kiev University; after repression of Polish revolt of 1861-1863 by Russian authorities, he crossed, via Moldavia, the Turkish border, and emigrated, through Turkey, to France and South America. In the same collection of Warsaw museum there are deposited his samples of Scorpions from Konstantinopol and Saloniki, dated 1864. His collections with the label "Moldavia" (if only this last is proper) must be dated with 1863; so we can suppose that the phrygian subspecies could inhabit in this times also Moldavia (= Bessarabia). Nevertheless, we state it with doubt, for no data supporting scorpions in Moldavia we have now. It most be noted that natural landscapes in Moldavia, SE Romania, SE Bulgaria and European Turkey were sufficiently degraded since 1860s, and maybe now all natural habitats for scorpions have extincted (*E. mingrelicus* known from Caucasus lives only in moist forest litter). No data exist also about any scorpions inhabiting the adjacent parts of Romania, Bulgaria and Turkey; only Kulczynski (1903) noted "*E. germanus*" from Adampol (European Turkey) with sixtrichobothria on the tibia of pedipalps in ventral side; this is evidently also *E. m. phrygius* Bonacina.

**Ib. Subgenus *Polytrichobothrius* Birula 1917**

Synonymy.

*Polytrichobothrius* Birula 1917a: 105, 1917b: 164; Kinzelbach 1975: 15; Vachon 1975: 639; Yusubov 1971: 75; Kinzelbach 1982: 52; Francke 1985: 8.

Distribution. See below, sub *E. italicus*.

Note. This subgenus includes only one species, *E. italicus* (Herbst). R. Kinzelbach (1975) without any reasons placed here also *E. flavicaudis* (De Geer), which is usually placed in monotypic subgenus *Tetratrachobothrius* Birula 1917.

**1. *Euscorpium italicus* (Herbst 1800)**

Synonymy.

- Scorpio italicus* Herbst 1800: 76, Taf. 3, fig. 1 (Italy; type unknown)  
*Scorpius naupliensis* C. Koch 1836: 93 (Greece), 1843: 18, tab. 330, fig. 766; Gervais 1844: 68; C. Koch 1850: 86.  
*Scorpius italicus*—. C. Koch 1836: 95, fig. 241 - 243; 1850: 86; Milde 1865: 965; Ausserer 1867: 160; Fanzago 1872: 80, fig. 2; Pavesi 1872: 28.  
*Scorpio provincialis* C. Koch 1836: 114 (South France).  
*Scorpio awhasicus* Nordmann 1840: 751, pl. 1, fig. 1 (Sukhumi, Poti); Ulyanin 1871: 91; Kessler 1876: 24; Köppen 1881: 219.  
*Androctonus awhasicus*—. Eichwald 1841: 188.  
*Scorpius awhasicus*—. Gervais 1844: 67.  
*Euscorpius italicus*—. Pavesi 1876: 57; Thorell 1877: 212 (= provincialis); L. Koch 1878: 38 (= awhasicus); Entz 1880a: 71, 1880b: 160; Becker 1881: XXXIII; Karsch 1881: 90; Lankester 1882: 455; Simon 1884: 351 (= naupliensis); Lankester 1885: 379; Kraepelin 1894: 155, Taf. 2, fig. 163; Birula 1900b: 230; Lonnerberg 1897: 187; Deryugin 1899: 94; Kraepelin 1899: 163; Birula 1900b: 249, 1900c: 17; Chyzer 1900: 2; Mällasz 1902: 170; Werner 1902: 604; Birula 1903d: XVII, 1904: 33, 1905b: 129; Tarnani 1907: 30 (in part); Jullien 1908: 240; Werner 1908: 121; Birula 1910: 170; Leister 1910: 1; Birula 1911b: 177, 1912: 125; Zykoff 1912: 209; Leister 1912: 2; Shugurov 1912: 106; Masi 1912: 141; Borelli 1914: 463; Cavanna 1916: 223; Werner 1916b: 338; Birula 1917a: 105, 1917b: 173, tab. 3, fig. 1-6,9; tab. 4, fig. 3-4; Lessert 1917: 6, fig. 5-6; Caporiacco 1922: 104; Menozzi 1923: 5; Werner 1927a: 144; Hadži 1929: 33, 1930b: 53, 1931a: 127, 1931b: 357; Berland 1932: 30; Caporiacco 1936: 328; Birula 1937: 101; Werner 1937: 153; Kòlòsvàry 1938: 587; Wolf 1938: 534; Feytaud 1940: (n.v.); Kästner 1940: 235; Werner 1941: 115; Kobakhidze 1943; Hadži 1943; Roewer 1943: 237; Richter 1945: 32; Schenkel 1947: 15; Vachon 1947a: 161, 1947b: 26; Millot and Vachon 1949: 430; Caporiacco 1954b: 223 (= ssp. mesotrichus); Vachon 1950a: 189, 1950b: 412, fig. 635; Bott 1951: 290; Vachon 1951a: 342; Strouhal 1952: 1; Vachon 1952: 361, fig. 541; Hadži 1955: 50; Sochurek 1958: 170; Bunesco 1959; Tolunay 1959: 366, Abb. 5; Marcuzzi 1961: (n.v.); Friese and Königsmann 1962: 734; Vachon 1962: 353, fig. 2, 3, 7; Kobakhidze 1964: 8; Hadži 1965: (n.v.); Vachon 1966: 214; Zangheri 1966: 529; Mkheidze 1968: 214; Szalay 1968: 16, fig. 10 (CD); Lange 1969: 39; Curcic 1971: 94, 1972: 83; Pérez 1974: 33; Kinzelbach 1975: 38 (= ssp. polytrichus, = ssp. oligotrichus; = ssp. etrusciae; = ssp. zakynthi); Vachon 1975: 638, fig. 12-14; Orlov et al. 1967: 5; Costantini 1976: 122; Guerra 1979: 263; Michalis and Kattoulas 1981: 110; Vachon 1981: 196, fig. 1-6, 810, 13-16; Fet 1982: 1912; Bonacina 1982: 3; Kinzelbach 1982: 52; Orlov and Vasilyev 1983a: 5, fig. 2; 1983b: 62; Vachon 1983a: 25, 1983b: 77; Vasilyev and Orlov 1983: 72; Bolokan 1984: 203; Sochurek 1984: 27; Kinzelbach 1985: 3; Fet 1985: 4; Fet and Gruodis 1987.  
*Euscorpius naupliensis*—. Pavesi 1887: 326.  
*Euscorpius awhasicus*—. Radde 1899: 478.

*Euscorpium italicum awhasicum*—. Birula 1904b: 33, 1905b: 129, 1910: 170; Leister 1910: 1; Birula 1911b: 177, 1912: 125; Leister 1910: 2; Shugurov 1912: 106; Vachon 1947a: 161, 1947b: 26; Caporiacco 1950b: 223, Vachon 1951a: 342; Tolunay 1959: 366; Vachon 1966: 214; Pérez 1974: 33; Orlov and Vasilyev 1983b: 62; Vasilyev and Orlov 1983: 72.

*Euscorpium italicum polytrichum* Hadži 1929: 33, fig. 1-4 (Greece); Pérez 1974: 33.

*Euscorpium italicum mesotrichum* Hadži 1929: 35 (South Slovenia), 1930a: 31; Roewer 1943: 237; Caporiacco 1950b: 116; Curcic 1971: 94; Pérez 1974: 33.

*Euscorpium italicum oligotrichum* Hadži 1929: 36 (North Italy); Caporiacco 1950b: 224.

*Euscorpium italicum etrusciae* Caporiacco 1950b: 171 (Italy).

*Euscorpium italicum zakynthi* Caporiacco 1950b: 172 (Isle Zante).

*Scorpio flavicaudis* (nec De Geer 1778) Rudow 1897:89; MISIDENTIFICATION.

Distribution. USSR. Georgia: Borzhomi (L. Koch 1878; Birula 1900c, 1917a, 1917b: LOC. DUB.); Kolkhida Depression (Kobakhidze 1943); Poti (Nordmann 1840; Birula 1900b, 1900c, 1917a, 1917b), 27.08.1875 (K. F. Kessler), 11 pulli, ZIN - 965; 24.08.1875 (id.), 1♂, 1♀, ZIN - 966, and 1♂, 1♀, 2 juv., ZIN - 972; year? (R. Freiberg), 2♀, ZM - Tb - 20; and 2♀, ZM - Tb - 115. Abkhazia: Gagra (Radde 1899; Birula 1905, 1917a, 1917b); 06.1893 (G. I. Radde), 1♀, ZIN - 964; 1904 (Kharazov), 1♂, ZIN - 973; 1913 (V. Isayev), 1♂, ZIN - 976; 5-13.07.1904 (A. Skorikov), 1♀, ZIN - 986; 1912 (P. Stefan), 1♀, ZIN - 1840; 10.1984 (V. E. Kurilenko), 1♀, ZM - Tb - 468; year? (L. Kotowski), 1♂, coll. Inst. Zool. Polish Acad. Sci. Warsaw; Gudauta (Birula 1912, 1917a, 1917b), year? (L. Kotowski), 2♀, coll. Inst. Zool. Polish Acad. Sci., Warsaw; Sukhumi (= Sukhum) (Nordmann 1840; Ulyanin 1871; Birula 1900b, 1900c, 1911b, 1912, 1917a, 1917b), 1880 (Chernyavsky), 1♀, ZIN - 967; 1879 (id.), 3♀, 1 juv., ZIN - 968; 29.08.1905 (M. Kalishevsky), 1♂, ZIN - 983; 30.08.1905 (id.), 1♀, ZIN - 988; 31.08.1905 (id.), 7 juv., ZIN - 989; year? (collector?), 1 juv., ZM - Tb - 13; year (N. V. Nasonov), 1♂, 1♀, 1 juv., ZM - Tb - 22; year? (Levshin), 1♀, ZM - Tb - 150, and 2♀, ZM - Tb - 463; year. (collector?), 1♀, ZM - Tb - 157; 1982 (S. V. Parin), 1♂, ZM - Tb - 177; 20.08.1986 (S. I. Golovach), 1♂, ZM - Tb - 462. Adzharia: Batumi (= Batum) (Birula 1900b, 1912, 1917a, 1917b); Buknari (Birula 1912, 1917a, 1917b); Kobuleti (Birula 1912, 1917a, 1917b); 1906 (K. S.), 1♂, ZIN 974; 21.08.1910 (id.), 1 juv., ZIN - 977 and 1♀, ZIN - 978; 5.07.1910 (id.), 1♀, ZIN - 979; 07.1909 (id.), 1 juv., ZIN - 982 and 1 juv., ZIN 985; 27.06.1909 (id.), 1 juv., ZIM - 984; Skhalta River (Birula 1912, 1917a, 1917b), 06.1905 (collector?), 1♀, ZIN - 1417; Zelyonyi Mys (Batumski Botanical Garden), 8.02.1895 (B. Kislyakov), 1♂, ZIN - 971; 25.08.1907 (A. Silantsev), 1♀, ZIN - 981; 4.06.1912 (V. Lindholm), 1♂, ZIN - 1420.

Russia. Krasnodar Region: Novorossiisk (delivered?) (Birula 1903; Tarnani

1907; Birula 1917a, 1917b), year? (collector?), 1 ♀, ZIN - 975; Sochi (Birula 1917a, 1917b), 13.07.1900 (A. Bykov), 1 ♂, 1 ♀, ZIN - 987; Uchdere (Birula 1900b, 1917a, 1917b), year? (D. Glazunov), 1 ♀, ZIN - 970. Rostov Region: Razdorskaya (Zykoff 1912; Birula 1917a, 1917b).

FRANCE, ITALY, SWITZERLAND, ROMANIA, YUGOSLAVIA, ALBANIA, GREECE, TURKEY, ALGER, TUNIS, YEMEN (introduced?).

Notes.

1. This species is not now divided into subspecies (Vachon 1981; Bonacina 1983).

2. The locality in Rostov Region must be checked up; the locality in Moldavia (Bolokan 1984) is not yet confirmed by any literature or collections. It must be noted that this species has abilities to synanthropic way of life and thus is constantly delivered far from its natural areal (Kinzelbach 1975; Fet and Gruodis 1987).

### 3. Family *IURIDAE* Thorell 1876

Synonymy.

*Iurini* Thorell 1876: 11 (pro subfam.).

*Iuridae*—. Laurie 1896: 129; Francke and Soleglad 1981: 233; Francke 1985: 17.

Distribution. USSR: Adzharia (?). GREECE, TURKEY, NORTH and CENTRAL AMERICA.

### Subfamily *IURINAE* Thorell 1876

Synonymy.

*Iurini* Thorell 1876: 11 (in part); Pocock 1893: 308; Laurie 1896: 129.

*Jurini*—. Karsch 1879a: 19 (in part), 1879b: 101.

*Jurinae*—. Birula 1917a: 63, 1917b: 57; Werner 1934: 282; Stahnke 1939: 15.

*Calchinae* Birula 1917a: 102, 1917b: 143; Vachon 1971: 712; Fet 1982: 41.

*Iurinae*—. Mello-Leitao 1934: 80, 1945: 118; Vachon 1948: 62; Millot and Vachon 1949: 428; Stahnke 1974: 114; Francke and Soleglad 1981: 249 (= *Calchinae*).

Distribution. USSR: Adzharia (?). GREECE, TURKEY.

### I. Genus *CALCHAS* Birula 1899

Synonymy.

*Calchas* Birula 1899: XIV (type species *C. nordmanni* Birula, by monotypy); see below synonymy for species; Fet and Madge 1988 (in press) (= *Paraiurus*).

*Paraiurus* Francke 1985: 3; Sissom 1987: 272.

Distribution.

USSR: Adzharia (?). TURKEY, GREECE.

Note.

O. Francke (1985) proposed *Paraiurus*, nomen substitutum, pro *Calchas* Birula, based on praecoccupation of the last name by Klug (1850) for Coleoptera. It is a mistake because of wrong spelling by Klug of the generic beetle name *Chalcas*. Therefore, the generic name *Calchas* Birula 1899, is valid, and *Paraiurus* Francke 1985 must be its junior synonym (Fet and Madge 1988).

**1. *Calchas nordmanni* Birula 1899**Synonymy.

*Calchas nordmanni* Birula 1899: XIV (syntypes: North-East Turkey, Ardanuch, 5.07.1898 (K. Deryugin), 2♂, sbad, ZIN - 942, seen), 1900b: 252, 1904b: 33, 1905b: 130; Kraepelin 1905: 351; Birula 1910: 170; Leister 1910: 2; Birula 1911b: 175, fig. 2-3; Nesterov 1911: 0144; Birula 1912: 124; Leister 1912: 2; Birula 1917a: 138, fig. 11-15, 1917b: 143, tab. 2, fig. 1-9; Leister 1933: 341; Werner 1934: 288, Abb. 378; Kästner 1940: 235; Richter 1945: 32; Vachon 1971: 712, fig. 1-12; Pérez 1974: 32; Vachon 1974: 915, fig. 166, 180, 212-215; Orlov et al., 1977: 5; Kinzelbach 1980: 169, fig. 1-5; Francke and Soleglad 1981: 242, fig. 1-4,20; Kinzelbach 1982: 51; Fet 1982: 1911; Orlov and Vasilyev 1983a: fig. 2, 1983b: 62; Vasilyev and Orlov 1983:72; Fet 1984: 41; Kinzelbach 1985: 4; Fet and Madge 1988.

*Paraiurus nordmanni*.- Sissom 1987: 272.

Distribution. USSR. Georgia: "mountains of Adzharia" (Richter 1945), LOC. DUB. TURKEY (south: Antalya, Siirt; north-east: Chorokh Basin), GREECE (Samos Island).

Note. A locality in Adzharia is not confirmed by any collections. All former reports from Russian Transcaucasia are since 1918 within Turkish territory. The detailed search for this species in Adzharia (lower Chorokh) is required.

## APPENDIX

***Euscorpius germanus* (Schaeffer 1766)**Synonymy.

*Scorpio germanus* Schaeffer 1766, tab. 2, fig. 3-5; Tab. 113, fig. 1-3 (Tirol); C. Koch 1936: 110, fig. 250-252; Ausserer 1867: 160.

*Scorpius germanus*—. C. Koch 1850: 86; Milde 1865: 962; Fanzago 1872: 8, fig. 8.

*Euscorpius germanus*—. Kraepelin 1894: 158; Müller and Schenkel 1895: 822; Birula 1898: 138, fig. 3; Kraepelin 1899: 165; Birula 1900b: 252; 1900c: 20; Chyzer 1900: 2; Kraepelin 1901: 273; Mallasz 1902: Werner 1902: 605; Kulczynski 1903: 678; Bourgeois 1911: 42; Borelli 1914: 464; Birula 1917a: 129; 1917b: 166, fig. 19a; Lessert 1917: 7, fig. 1-4,7; Werner

1927a: 144; Kästner 1928: 3, Abb. 4-5; Hadži 1929: 38, 1930a: 37, 1930b: 53, 1931a: 127, 1931b: 357; Werner 1934: 285; Capra 1939: 199 (= ssp. mesotrichus); Strouhal 1939a: 253; Kästner 1940: 335; Caporiacco 1940: 82; Hadži 1943: Roewer 1943: 237; Millot and Vachon 1949: 429; Caporiacco 1950b: 223 (= mingrelicus); Vachon 1950a: 189, 1951a: ; Strouhal 1952: 1; Vachon 1952: 361; Franz 1954: 459; Hadzi 1955: ; Marcuzzi and Fabris 1957: 299; Marcuzzi 1961: (n.v.); Kühnelt 1962: 65; Hadži 1965: (n.v.); Vachon 1966: 214; Curcic 1968: (n.v.); 1971: 97; Valle et al. 1971: 96 (= ssp. beta; = ssp. histrorum); Curcio 1972: 83; Pérez 1974: 34; Vachon 1974: 913, fig. 228-230; Kinzelbach 1975: 26, fig. 10c, 11 (= bosnensis; = ciliciensis; = ssp. oligotrichus; = ssp. alpha; = ssp. gamma; = ssp. dinaricus; = ssp. croaticus); Vachon 1975: 635, fig. 2-4; Sampl 1976: 29; Costantini 1976: 121; Kofler 1977: 1; Vachon and Jaques 1977: 414, fig. 10-12; Guerra 1979: 119; Thaler 1979: 49; Bonacina 1980: 47, fig. 1-4; Kinzelbach 1982: 52; Bonacina 1983: 3; Kreissl 1983: 2; Sochurek 1984: 27; Fet 1985: 83; Kinzelbach 1985: 1; Scherabon 1985: 133; 1987: 80.

*Euscorpius germanus mesotrichus* Hadži 1929: 37 (Bosnia), 1930a: 37; Curcic 1971: 98; Pérez 1974: 34.

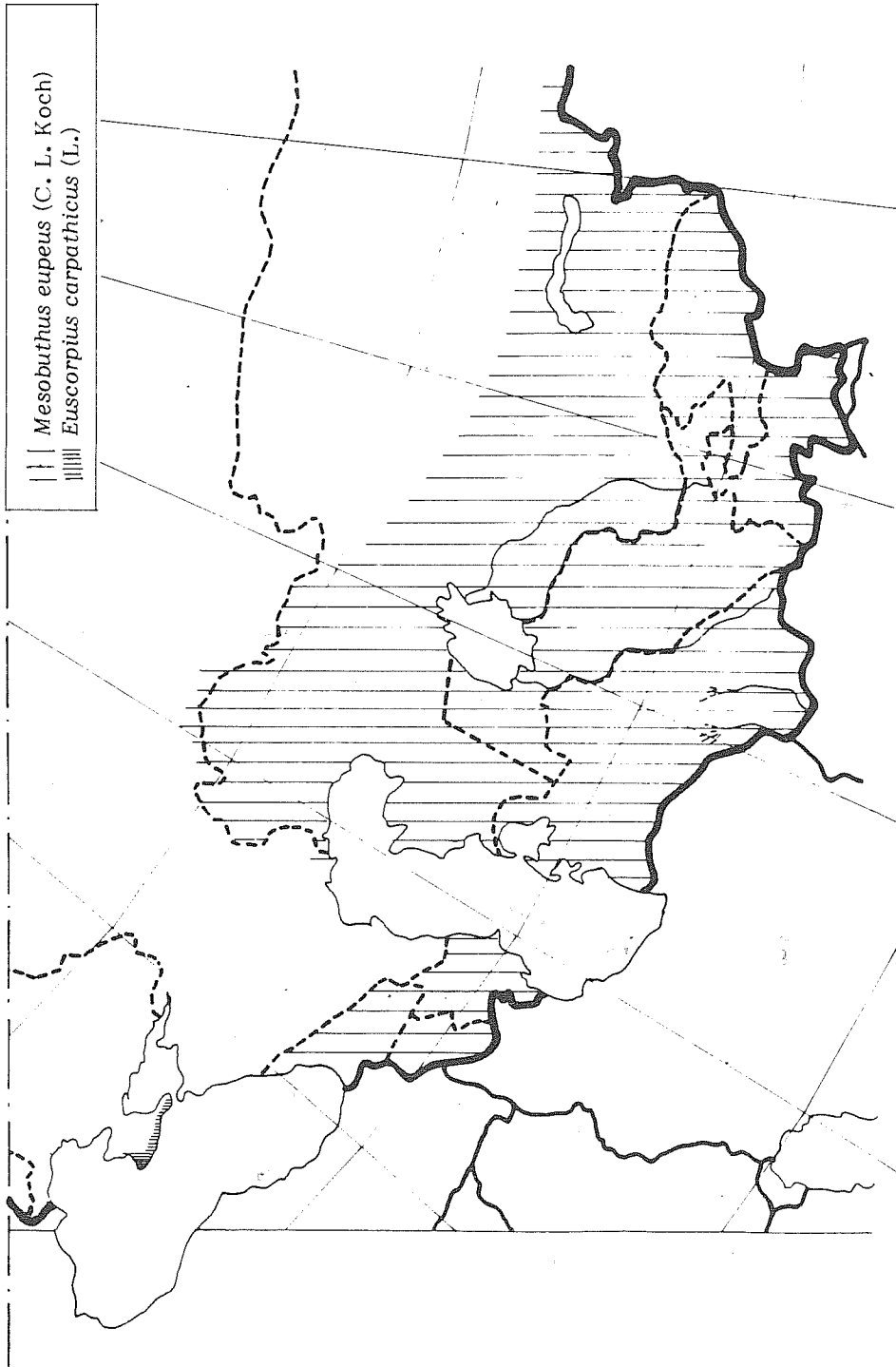
*Euscorpius germanus oligotrichus* Hadži 1929: 37 (patria ignota); Roewer 1943: 237.

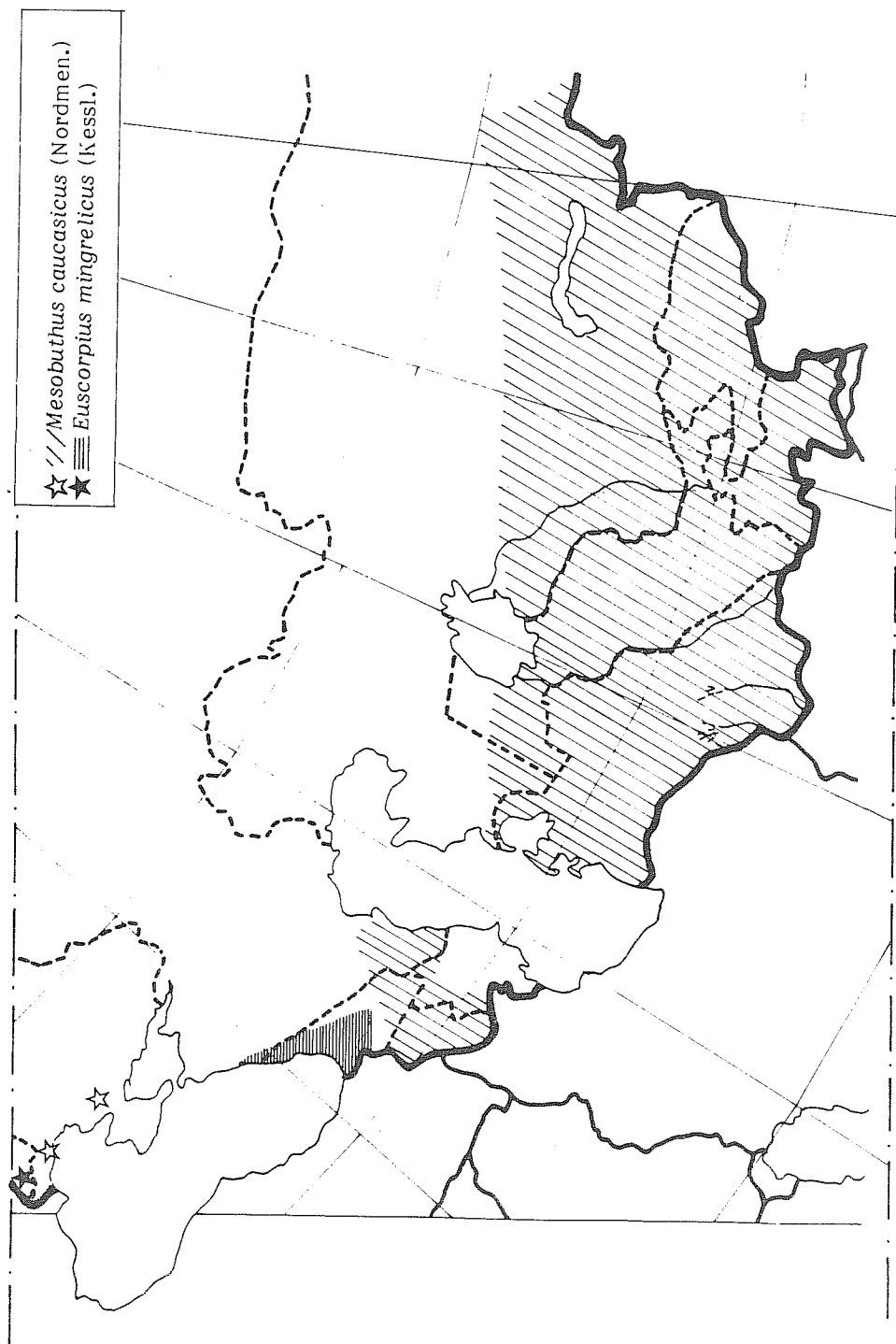
*Euscorpius germanicus* (nec Herbst 1800) Gervais 1844: 67; Dalla Torre 1882: 69; Caporiacco 1927: 125; LAPSUS CALAMI.

#### Distribution.

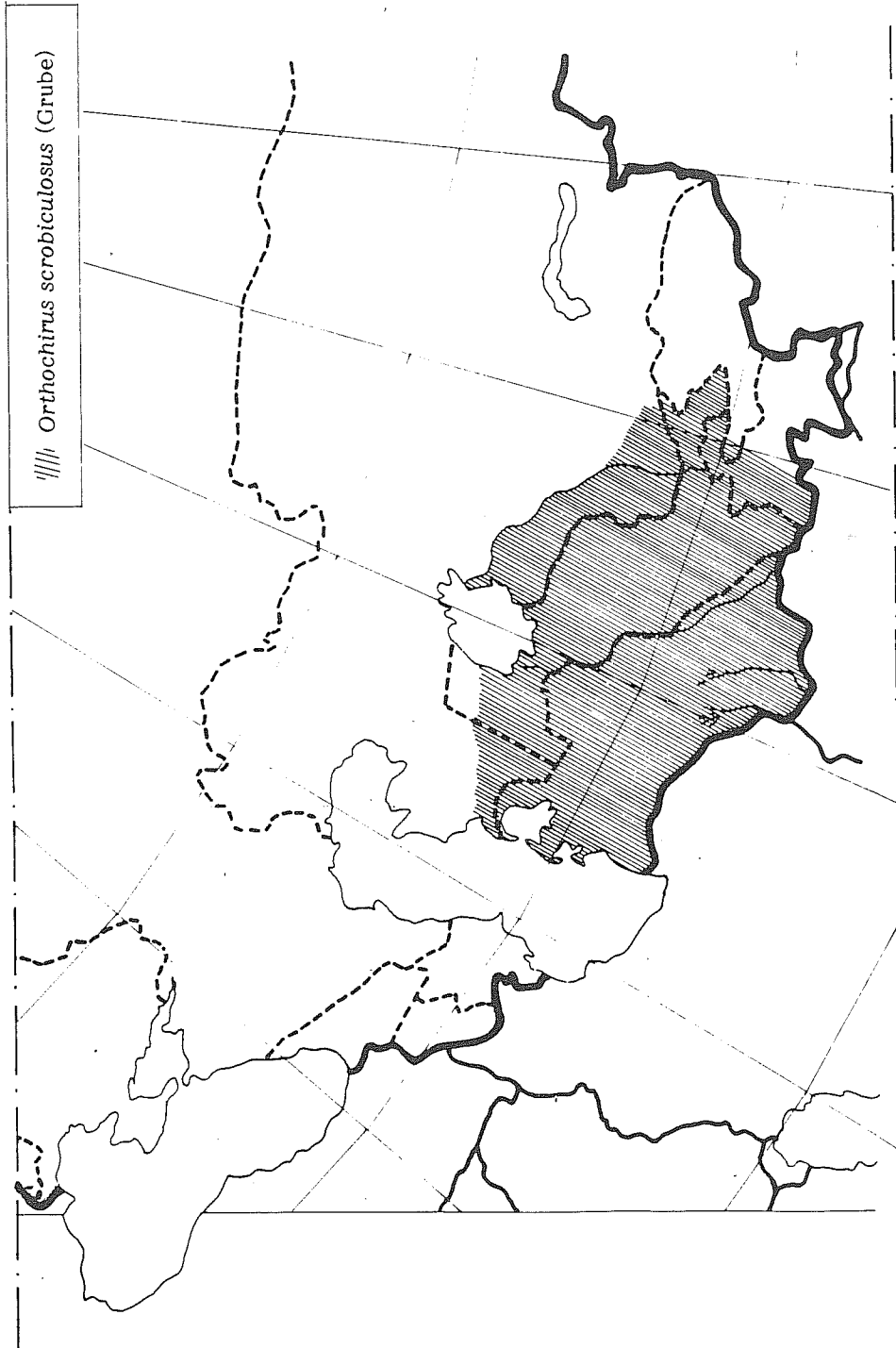
ITALY, SWITZERLAND, AUSTRIA, YUGOSLAVIA, GREECE, ROMANIA (?), BULGARIA (our unpublished data).

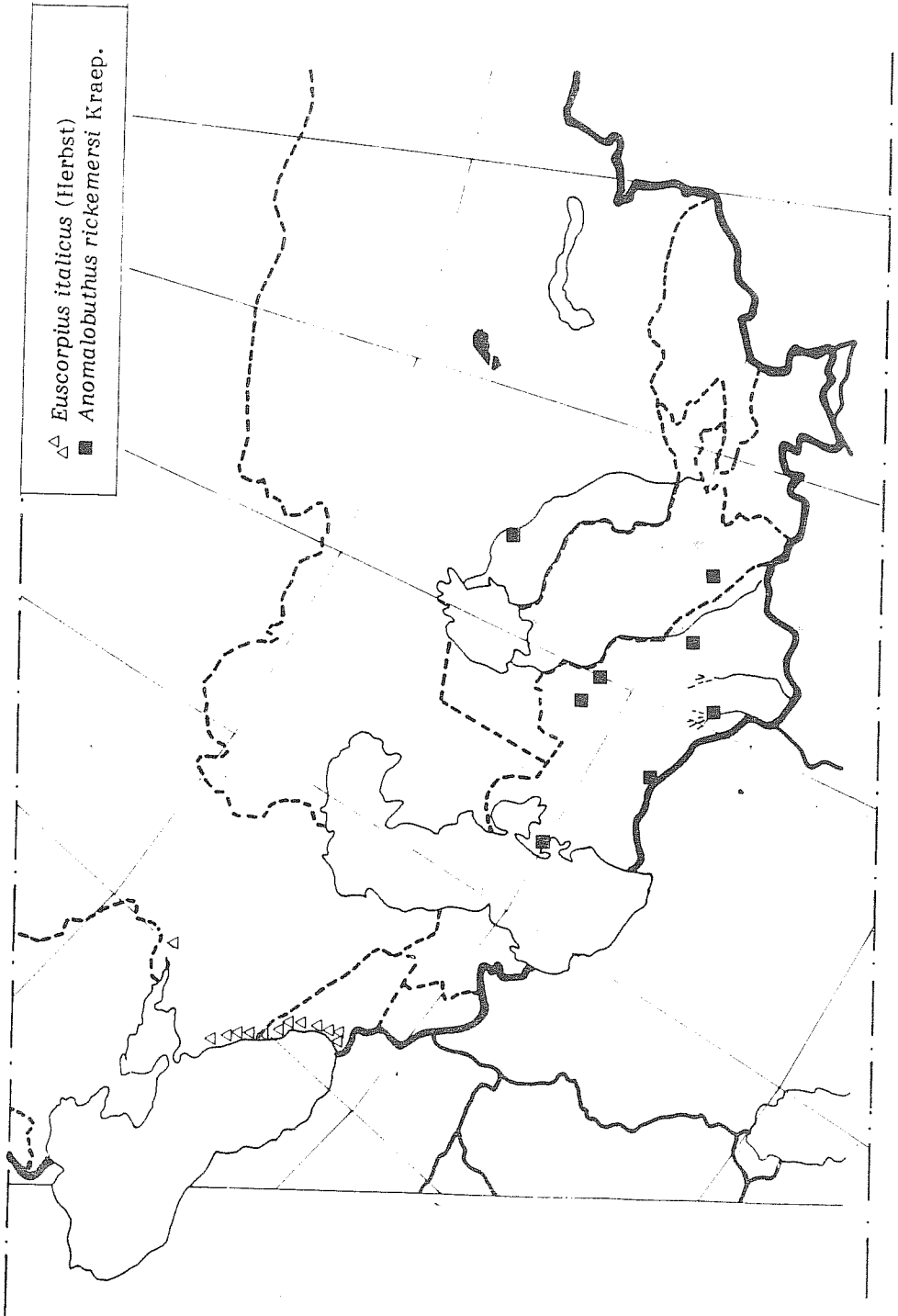
Note. Subspecific division was studied by Bonacina (1980) who revalidated old subspecies *E. g. alpha* (Capor.) (Lombardia), *E. g. croaticus* Capor. (Yugoslavia, Velebit Mts), *E. g. marcuzzii* Valle (north Italy), states *E. g. germanus* from Piemont, north Italy and Slovenia, and placed old subspecies *E. g. beta* Capor. into *E. g. germanus*. Old subspecies *E. g. gamma* Capor., *E. g. dinaricus* Capor. and *E. g. histrorum* Capor. were placed by Bonacina to *E. mingrelicus*

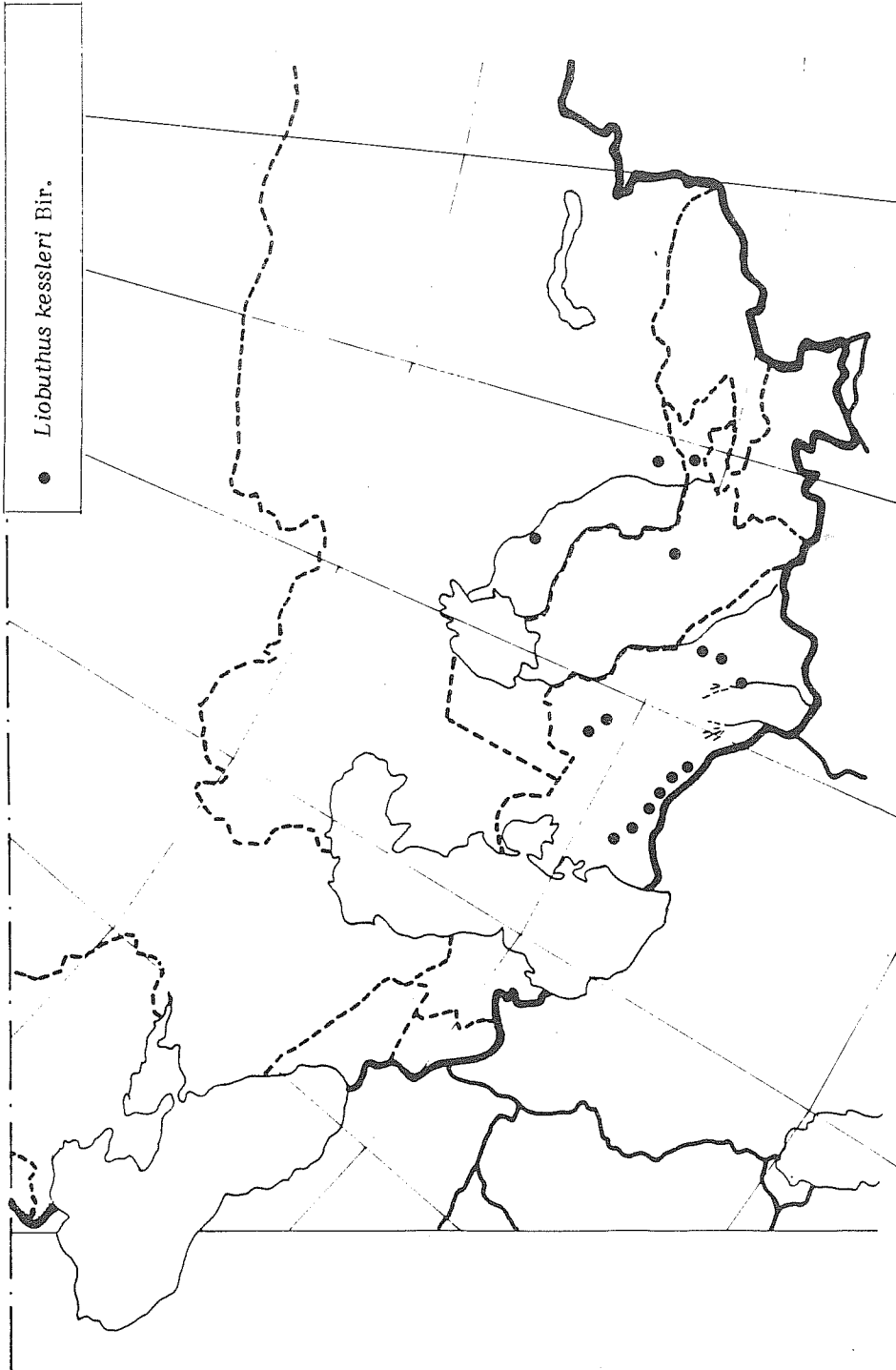


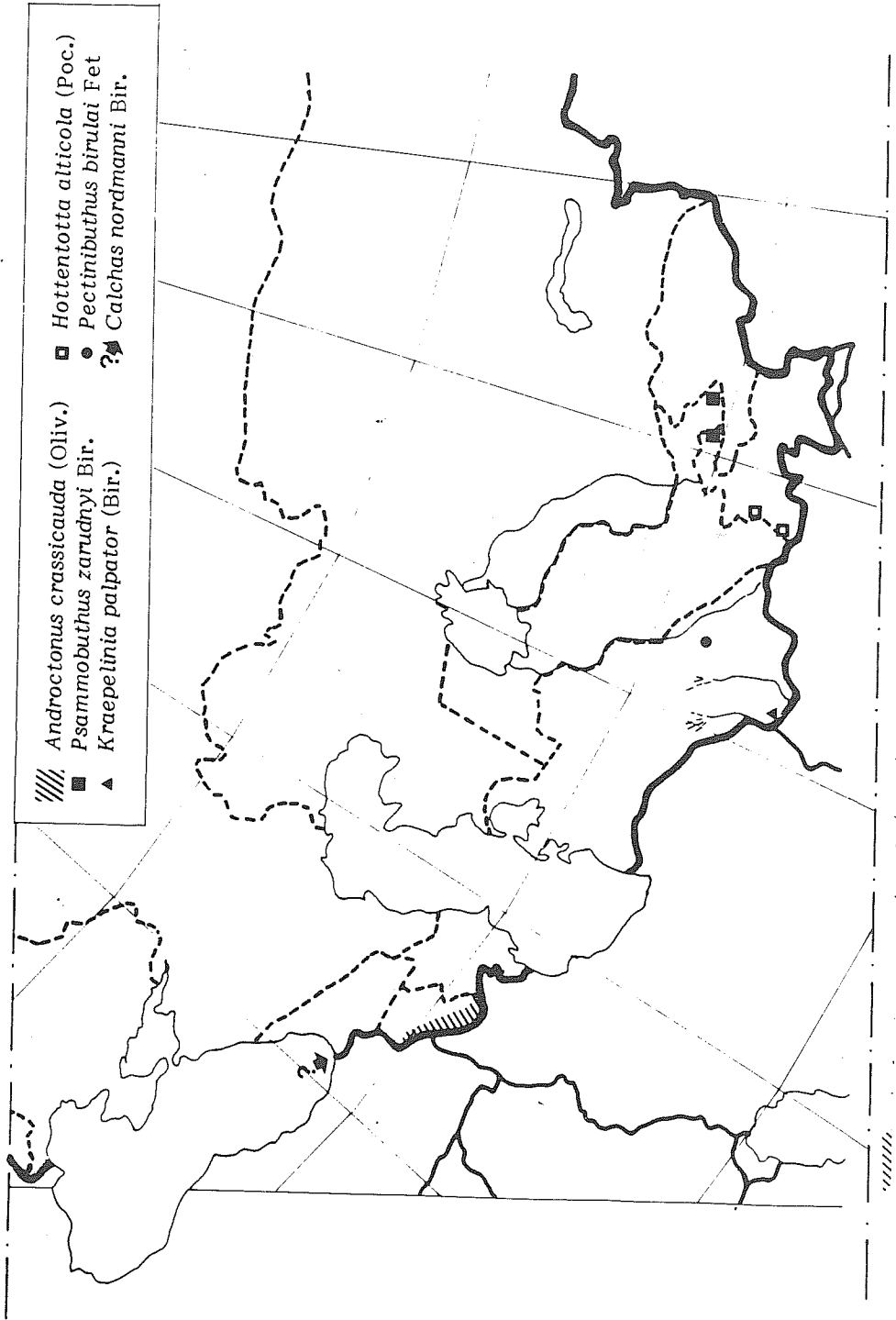












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