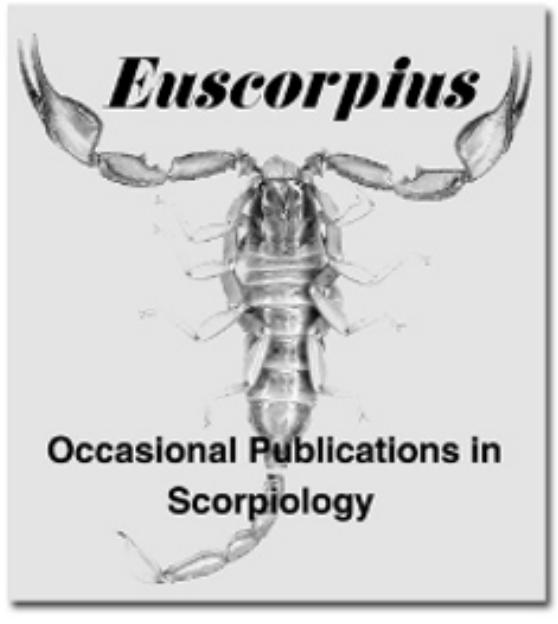


Euscorpius journal is the first and only research publication completely devoted to scorpions (Arachnida: Scorpiones).

Euscorpius takes advantage of the rapidly evolving medium of quick online publication, at the same time maintaining high research standards for the burgeoning field of scorpion science (scorpiology).

The name *Euscorpius* Thorell, 1876 refers to the most common genus of scorpions in the Mediterranean region and southern Europe (family Euscorpiidae).

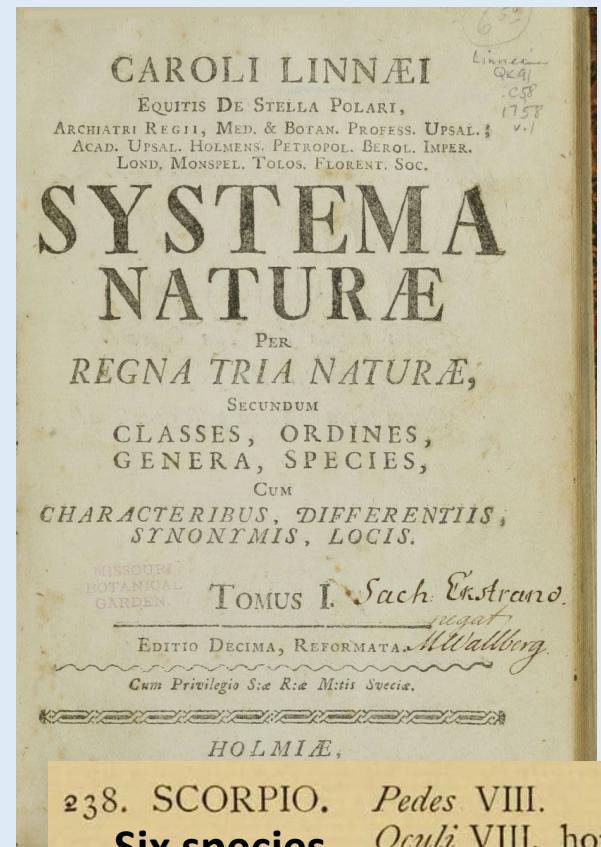


Scorpions of the Caucasus: advances and perspectives



Victor Fet
Department of Biological Sciences,
Marshall University,
Huntington, West Virginia, USA
17 March 2021

Arachnida: Order Scorpiones

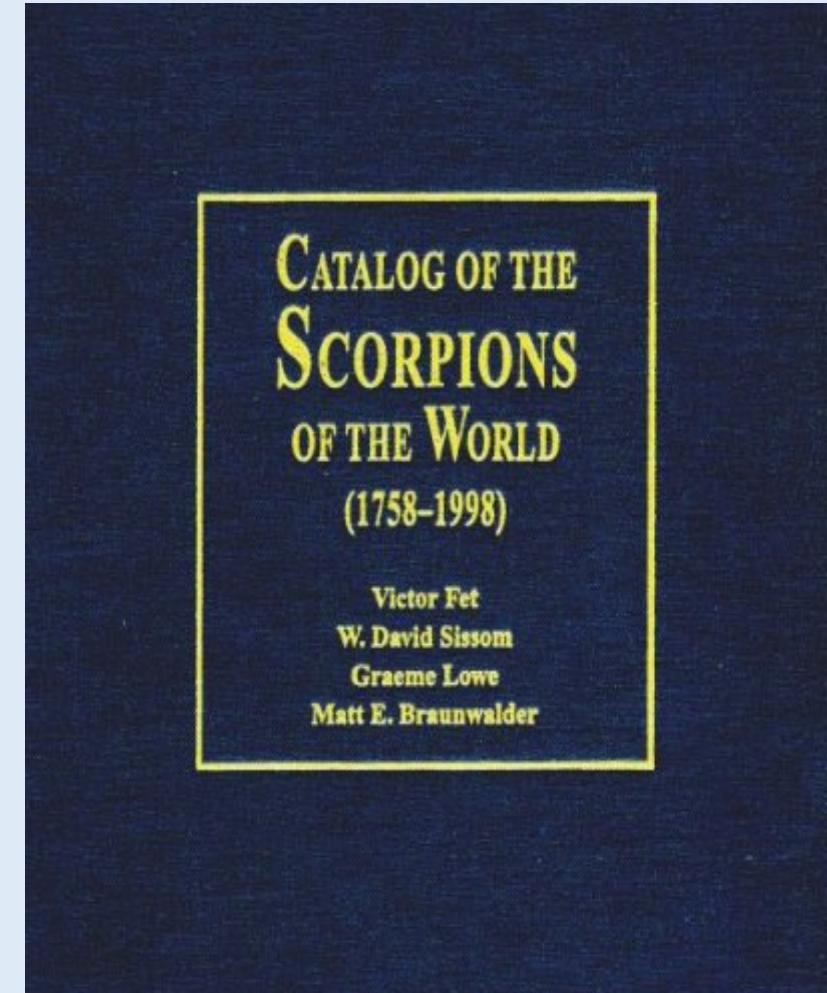


238. SCORPIO. *Pedes VIII.*
Six species described by Linnaeus (1758)

Oculi VIII, horum 3 ad latus utrumque thoracis; 2 in tergo.
Frons chelifera.
Palpi II, cheliformes.
Cauda elongata, articulata, terminata Mucrone arcuato.
Pectines duo subtus inter pectus & abdomen.

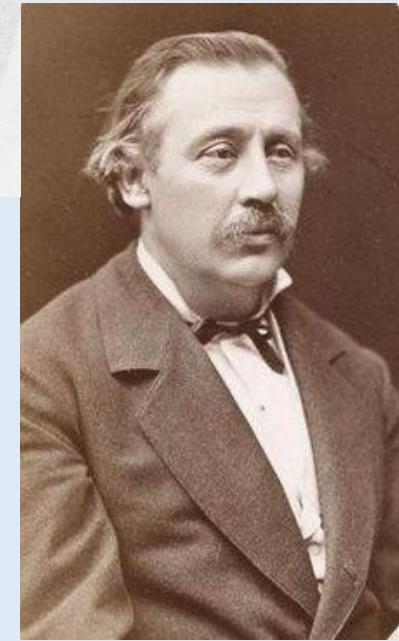
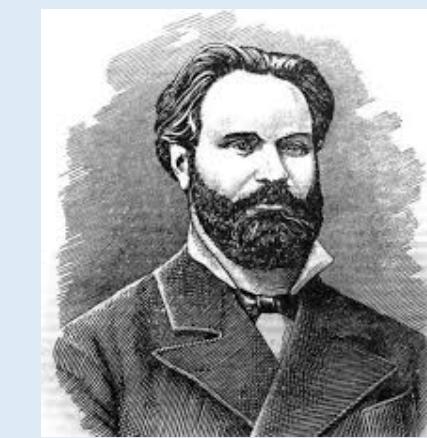
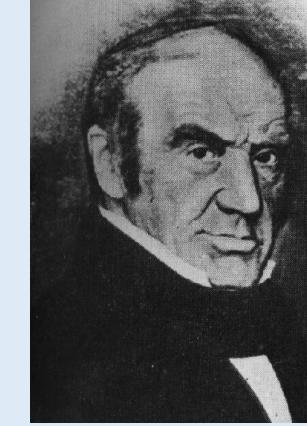
maurus. 1. S. pectinibus 8-dentatis, manibus subcordatis punctatis.
Habitat in Africa.

**Worldwide:
23 families, ~200 genera,
~2600 species
A LOT OF CRYPTIC SPECIES!!
Without DNA markers (also known as 'barcoding'), any estimate of scorpion diversity is IMPOSSIBLE!**





Carl Koch, Alexander von Nordmann, Karl Kessler, Gustav Radde



Naturwissenschaftliche Beiträge

zur Kenntniss

der Kaukasusländer,

auf Grund seiner Sammelbeute

herausgegeben

von

Dr. Oscar Schneider.

3027

Mit 5 Tafeln Abbildungen.

(Veröffentlicht von der naturw. Gesellschaft „Isis“ zu Dresden.)



Dresden.

Im Verlage der Burdach'schen Hofbuchhandlung.

1878.

104

Ludwig Koch (1878)

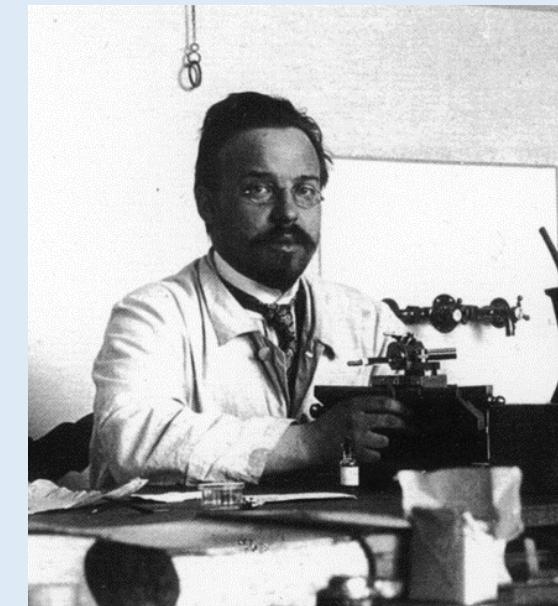


III.

Kaukasische Arachnoideen.

Von Dr. L. Koch.

Die von Herrn Dr. Schneider aus Transkaukasien mitgebrachten Arachniden bilden, obwohl sie nur 38 Arten repräsentieren, dennoch einen wichtigen Beitrag zur Kenntniss der geographischen Verbreitung verschiedener Species dieser Thiere. Es finden sich darunter theils solche, welche der gesammten Mittelmeerfauna angehören, wie auch einzelne, welche fast über ganz Europa verbreitet oder im Osten dieses Erdtheiles heimisch sind. Zur Mittelmeerfauna zählen aus der Unterordnung der Orbitarien zwei Arten (*Argiope lobata* Pall. und *Epeira Armida* Sav.), von den Saltigraden *Philaeus haemorrhoicus* C. Kch., von den Scorpionen *Euscorpius Italicus* C. Kch. — Von den ziemlich über ganz Europa verbreiteten Arten begnügen wir in Transkaukasien aus den Orbitarien *Argiope Bruennichii* Scop., *Epeira angulata* Cl., *Epeira adianta* Walck., *Epeira cornuta* Cl., *Singa albovittata* Westr., von den Tubitelarien *Phrurolithus festivus* C. Kch., von Laterigraden *Monaeses cuneolus* C. Kch., *Thomisus onustus* Walck., *Xysticus cristatus* Cl., von Citigraden *Hasarius arcuatus* Cl., *Philaeus chrysops* Poda, von Chernetiden *Obisium musorum* Leach; im Ganzen sonach 12 Arten. Dem Osten Europas gehören *Lycosa Singoriensis* Laxm., dem Südosten *Galeodes araneoides* C. Kch. und *Obisium manicatum* L. Kch. an. Von den übrigen 19 Arten sind nur 4 bereits bekannt (*Lycosa Bergsoei* Thor., *Lycosa Piocchardi* E. Sim., *Galeodes Arabs* C. Kch., *Buthus Eupaeus* C. Kch.); die übrigen verdanken wir der Entdeckung des Herrn Dr. Schneider. — Nach dessen Mittheilungen würde ein sorgfältiges Sammeln von Arachniden in Transkaukasien eine herrliche Beute ergeben, indem namentlich von Spinnen ein erstaunlicher Reichthum an Individuen wie an Arten sich bemerklich mache.



**Evgenii Elachich,
Petr Nesterov,
Alexandr Kaznakov,
Konstantin Deryugin,
and many others**



Alexey A. Byalynitskii-Birula
(1864-1938) (St. Petersburg, Russia), one of
the best scorpion researchers of his generation

- BYALYNITSKII-BIRULYA, A. A. 1917a. Arachnoidea Arthrogaster Caucasia. Pars I. Scorpiones. *Zapiski Kavkazskogo Muzeya* (Mémoires du Musée du Caucase), Tiflis: Imprimerie de la Chancellerie du Comité pour la Transcaucasie, A(5), 253 pp. (in Russian).
- English translation:
- Byalynitskii-Birulya, A. A. 1964. *Arthrogastriac Arachnids of Caucasia. 1. Scorpions.* Jerusalem: Israel Program for Scientific Translations, 170 pp. (in Russian).



**Birula,
1917a
(May),
Tiflis**

ЗАПИСКИ КАВКАЗСКОГО МУЗЕЯ.

Серія А. № 5.

Подъ редакціей Ю. Н. Воронова и Ф. А. Зайцева

ЧЛЕНІСТОБРЮХІЯ ПАУКООБРАЗНІЯ

КАВКАЗСКОГО КРАЯ.

Часть I.

СКОРПІОНЫ.

Составилъ А. А. Бялыницкій-Бируля.

(Съ 3 табл. и 16 рис. въ текстѣ).

Тифлісъ.

Гіпографія Канцелярії Особаго Закавказскаго Комитета.

1917.

MÉMOIRES DU MUSÉE DU CAUCASE.

Série A. № 5.

Publiés sous la rédaction de G. N. Woronow et Ph. Zaitzev.

ARACHNOIDEA ARTHROGASTRA

CAUCASICA.

Pars I.

SCORPIONES.

Scripsit A. A. Bialynicki-Birula.

(Cum tabulis 3 et 16 fig. in textu).

Tiflis.

Imprimerie de la Chancellerie du Comité pour la Transcaucاسie.

1917.

ФАУНА РОССИИ

и сопредельных странъ,

примущественно по коллекциямъ

зоологического музея Российской Академии Наукъ.

ПАУКООБРАЗНЫЯ

(*Arachnoidea*).

Томъ I.

Выпускъ 1.

А. А. Бялыницкій-Бируля.

FAUNE DE LA RUSSIE

ET DES PAYS LIMITROPHES

FOUDÉE PRINCIPALEMENT SUR LES COLLECTIONS

DU MUSÉE ZOOLOGIQUE DE L'ACADEMIE DES SCIENCES DE RUSSIE.

ARACHNIDES

(*Arachnoidea*).

Volume I.

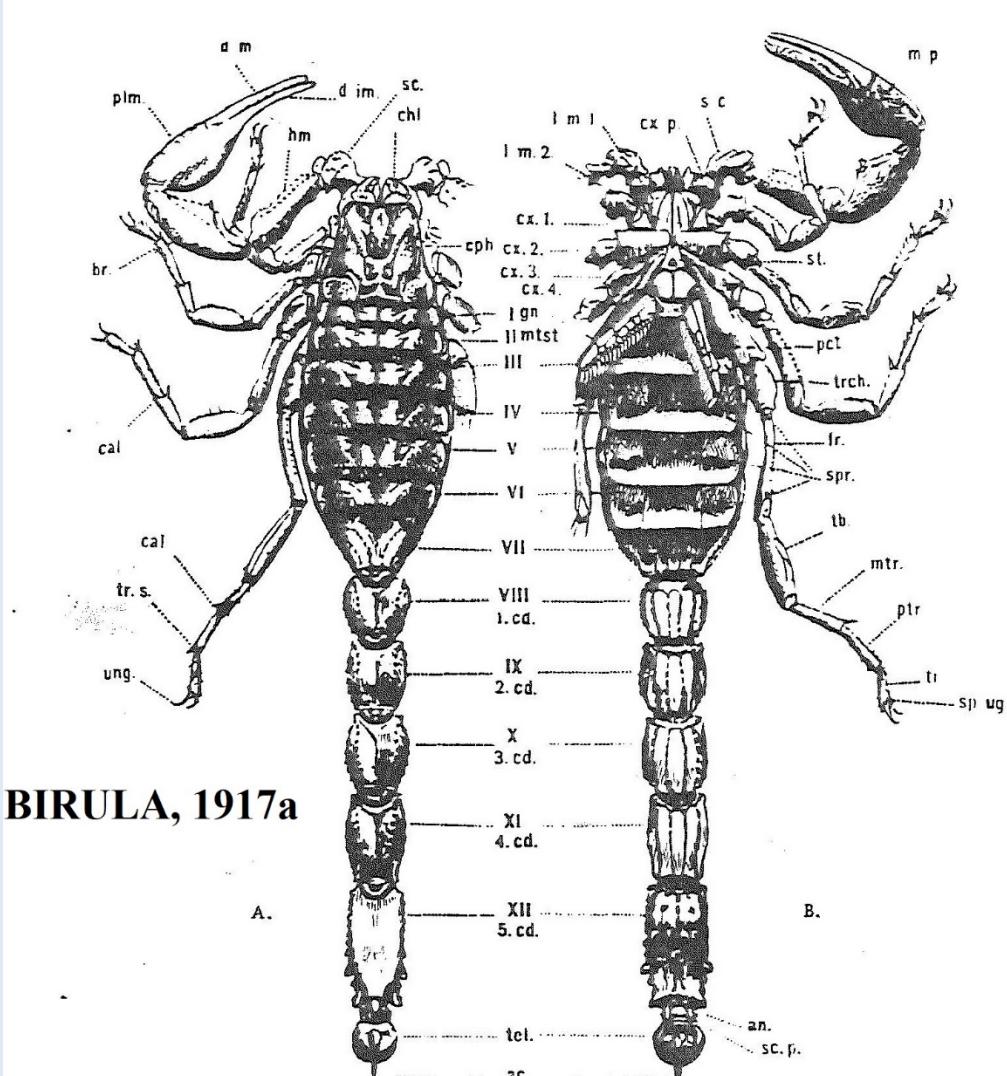
Livraison 1.

Par А. А. Бялыницикі-Бируля.

ПЕТРОГРАДЪ. 1917. PETROGRAD.

Цена 3 руб.; Prix 3 rbl.

Бибуля, 1917b
(October!)



Butus eupeus eupeus (C. Koch). A - dorsal view; B - ventral view

Fet, 1989

Riv. Mus. civ. Sc. Nat. "E. Caffi" BERGAMO, 13 (1988), pp. 73-171 ISSN 0393-8700

Victor FET *

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

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; Tertyshnikov 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; Shikakhokhsky Reserve (in Kafansky District), 900-950 m, 26.04.1983 (S. I. Golovach), 1♀, 2 juv., ZIN - 1780; Surmaliinsky District (= Uezd) 04-05.1911 (N. A. Bobrinskoi), 1♂, 1 juv., ZM - Tb - 198; Vedi, 11.04.1956 (L. Zhiltsova), 2 juv., ZIN - 1851;

Fet (1989): a full list of all scorpion specimens from the Caucasus in the collection of ZIN, St. Petersburg

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 Maralyar (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); Milskaya 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 Oblivno (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) Shamkhersky 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

A LIST OF SCORPIONS of the CAUCASUS

(including the provinces
of Iran and Turkey that border Georgia,
Armenia, and Azerbaijan) as of 2021:
5 families, 11 genera, 16 species

Family BUTHIDAE:

1. *Androctonus crassicauda*
2. *Compsobuthus armenicus*
3. *Compsobuthus matthiesseni*
4. *Hottentotta saulcyi**
5. *Hottentotta zagrosensis**
6. *Mesobuthus eupeus* [complex!]
8. *Mesobuthus vesiculatus**
9. *Odontobuthus doriae**
10. *Olivierus caucasicus* [complex?]

*IRAN only

Family EUSCORPIIIDAE:

11. *Alpiscorpius mingrelicus*
12. *Euscorpius (Polytrichobothrius) italicus*
13. *Euscorpius (Polytrichobothrius) naupliensis* (introduced!)

Family HEMISCORPIIIDAE*:

14. *Hemiscorpius lepturus**

Family IURIDAE:

15. *Calchas nordmanni*

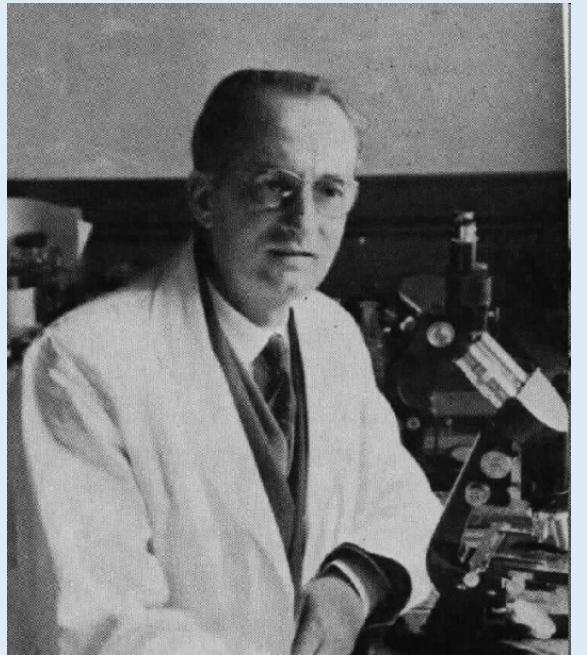
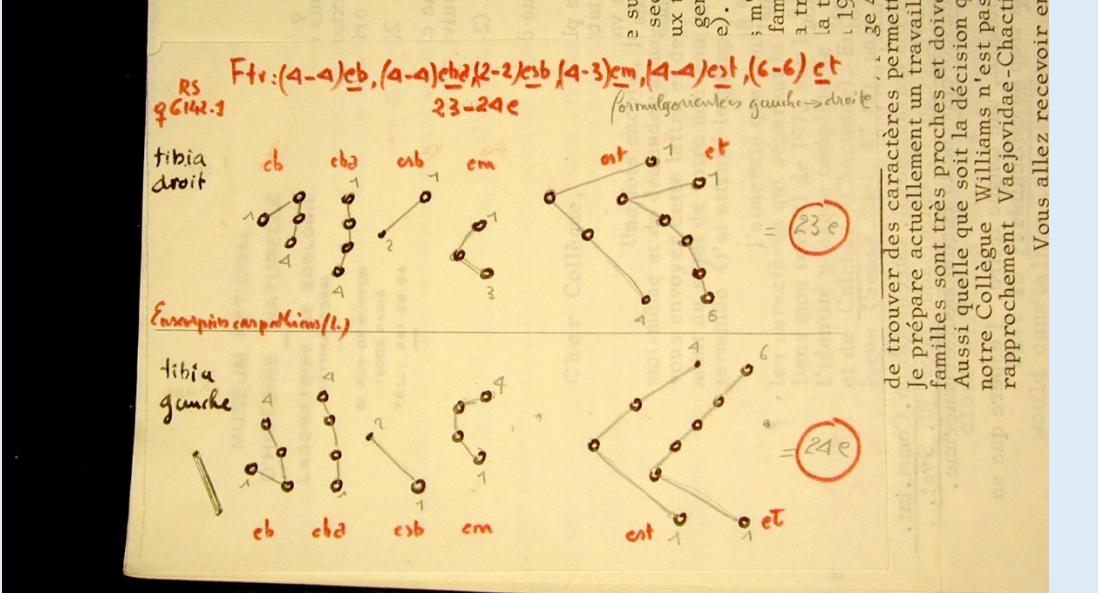
Family SCORPIONIDAE*:

16. *Scorpio maurus townsendi**

Family EUSCORPIIDAE

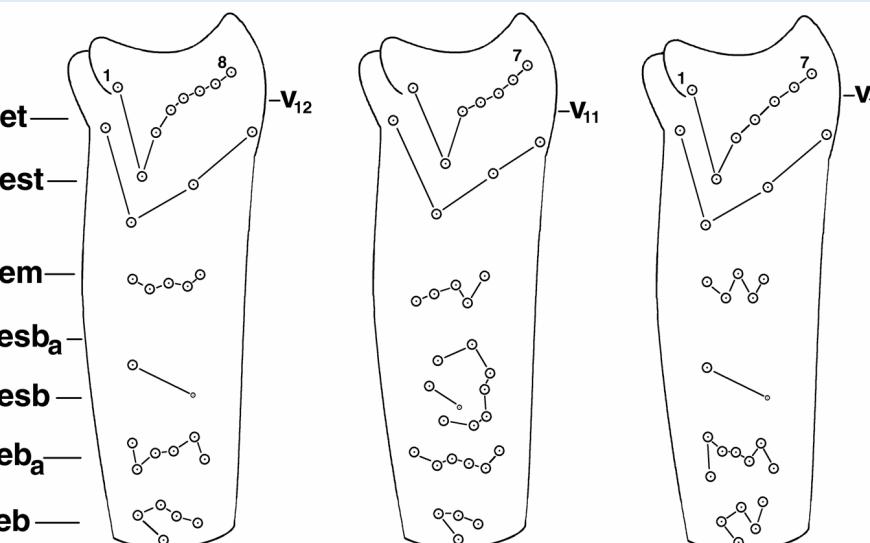
(not very toxic)

**(in the Caucasus: 2 genera, 3 species,
Azerbaijan, Georgia, Russia, Turkey)**



Max Vachon
(1908-1991)

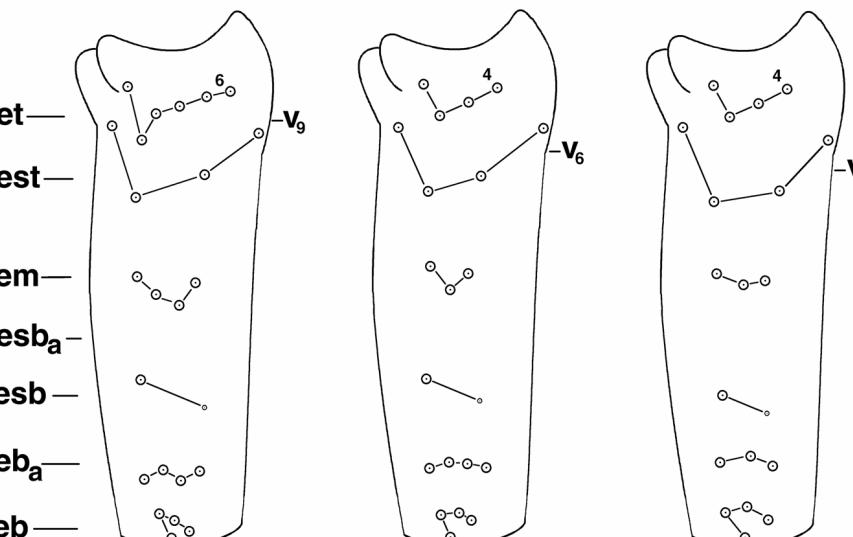
Trichobothria of *Euscorpius*



E. flavicaudis

E. italicus

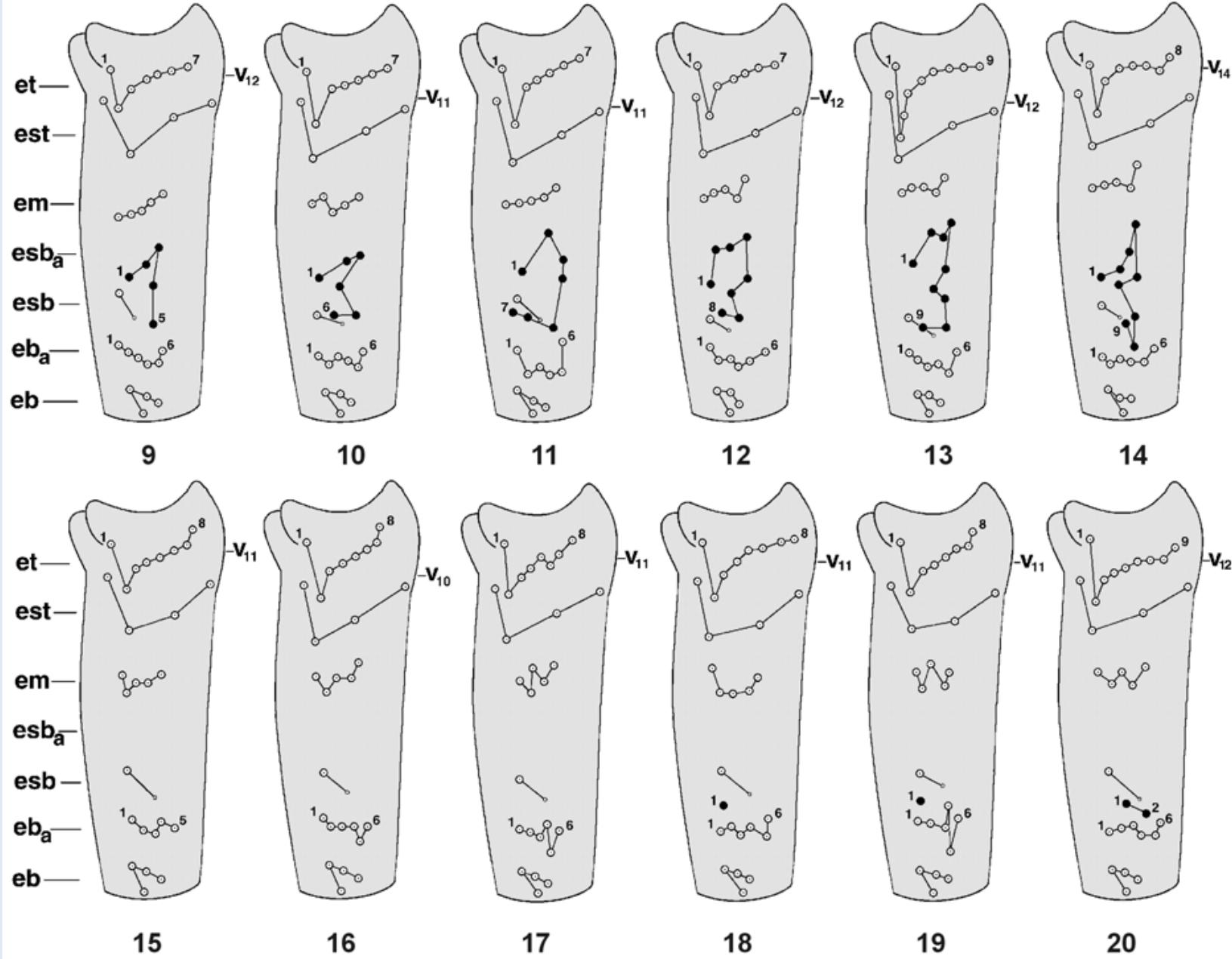
E. hadzii



E. tergestinus

E. g. germanus

E. g. marcuzzii



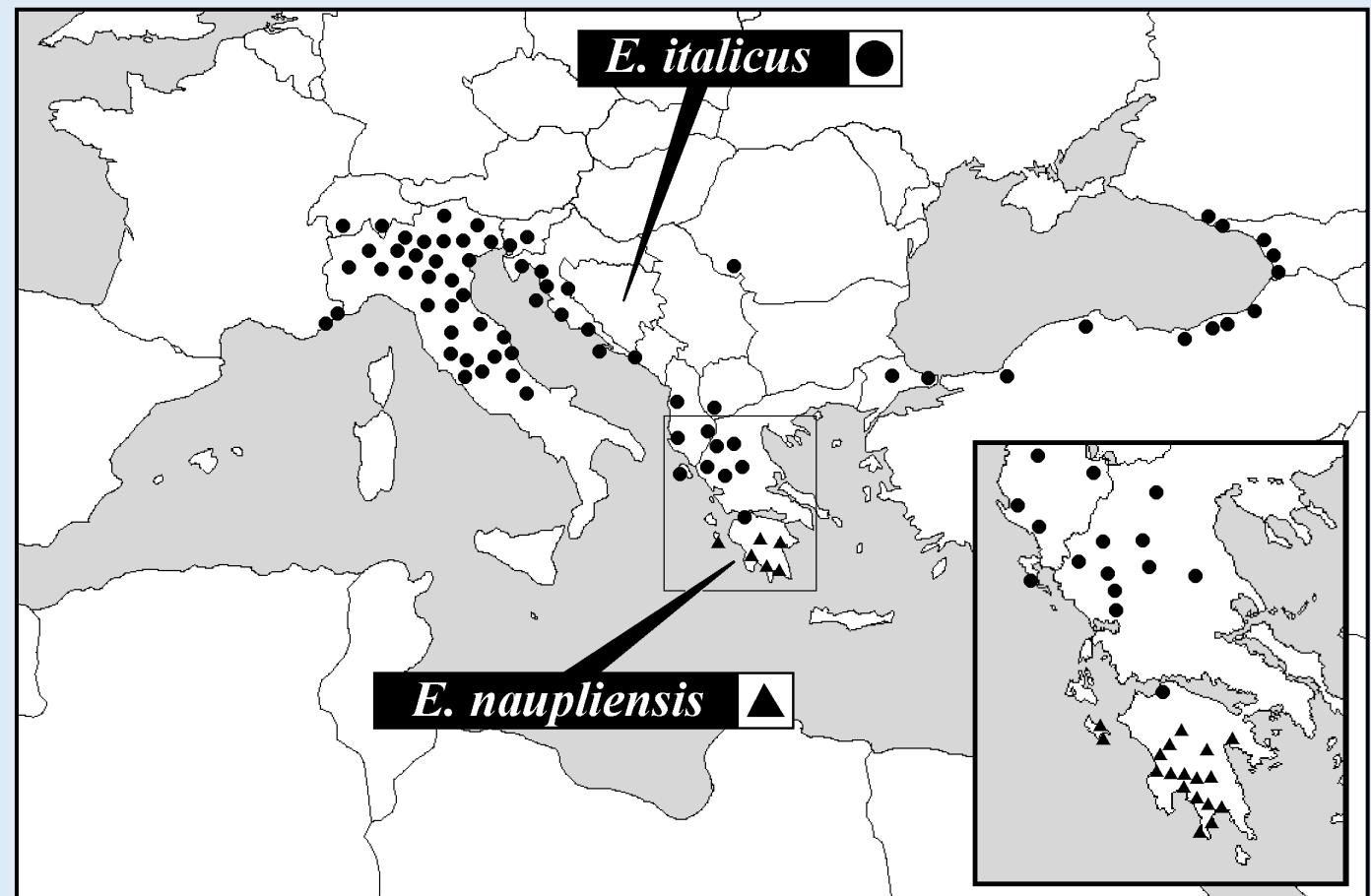
- ***Euscorpius italicus***: from Italy to north Caucasus:
 - Very high morphological variation
 - Very low genetic variation
- (Gantenbein et al., 2006, 16S rDNA)

- One related species
- ***Euscorpius naupliensis***
(C. L. Koch, 1837) (Greece)

CRYPTIC SPECIES vs RECENT DISPERSAL

***Euscorpius italicus* (Herbst, 1800)**

(Fet et al., 2002; Gantenbein et al., 2006)



First record of *Euscorpius naupliensis*

**(C. L. Koch, 1837) outside of its natural
range (Scorpiones: Euscorpiidae)**

Gioele Tropea & Wilson R. Lourenço, 2018

***Euscorpius naupliensis* (natural range: Greece, Peloponnesos)**

found in: **Azerbaijan, NW of Baku ! Two specimens (a population!)**

A possible ancient human introduction from Greece.

Fet, 1993

Victor FET*

NOTES ON *EUSCORPIUS MINGRELCUS* (KESSLER, 1874)
(SCORPIONES:CHACTIDAE) FROM THE CAUCASUS

RIASSUNTO: Si descrivono i caratteri tassonomici e la variabilità intraspecifica di *Euscorpius mingrelicus mingrelicus* (Kessler, 1874) del Caucaso. Si designa una Terra typica per la specie (Batumi, Georgia, West Transcaucasia).

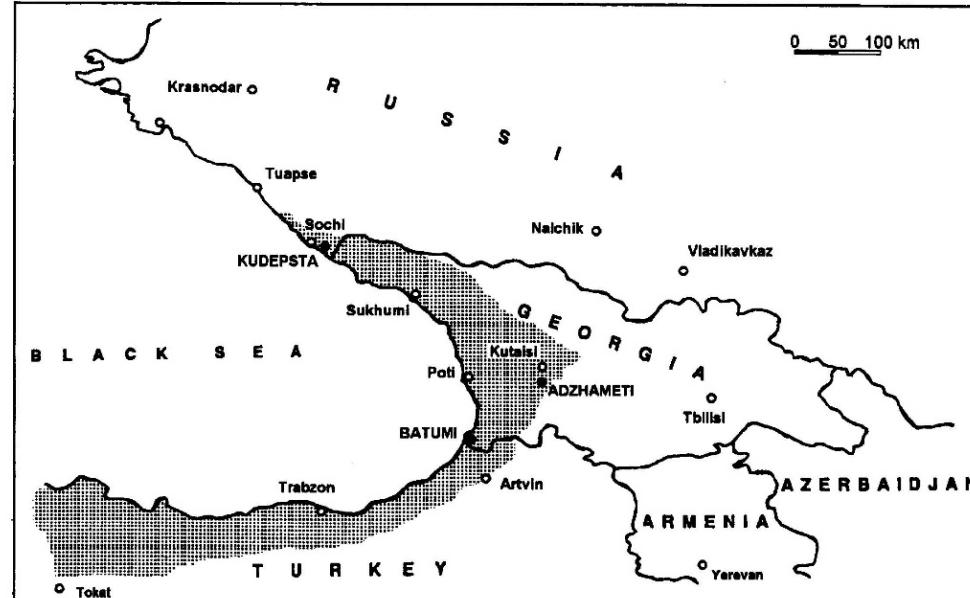
ABSTRACT: Taxonomic characters and patterns of intraspecific variation are described and discussed for *Euscorpius mingrelicus* (Kessler, 1874) from the Caucasus (Russia and Georgia). Problems in the taxonomy and biogeography are discussed. Terra typica for *E. mingrelicus* is designated (Batumi, Georgia, West Transcaucasia).

РЕЗЮМЕ: Рассмотрены таксономические признаки и внутривидовая изменчивость скорпиона *Euscorpius mingrelicus mingrelicus* (Kessler, 1874) (кавказ). Обозначена Terra typica для *E. mingrelicus* (Батуми, Грузия, западное Закавказье).

KEY WORDS: scorpions, *Euscorpius*, trichobothria, Caucasus.

INTRODUCTION: Scorpions of the genus *Euscorpius* Thorell, 1876 (Scorpiones, Chactidae) are very common and abundant in Mediterranean region. Controversial hypotheses of speciation are discussed in the literature (Hadzi, 1931; Caporiacco, 1950; Curcic, 1972; Kinzelbach, 1975; Bonacina, 1980).

Numerous primary data are published on *Euscorpius* species and forms from Italy, France, Austria and Yugoslavia; much less, from Greece and Turkey. The most extensive recent study was that of so-called *E. germanus* complex of two related species, *Euscorpius mingrelicus* (Kessler) and *E. germanus* (Schaeffer) (Bonacina, 1980). However, the easternmost populations of this complex (from southwest Russia and Georgia) were never completely described in quantitative terms for the meristic characters (trichobothrial patterns) most commonly employed in the systematic revisions for this genus. Preliminary report with the data on the Caucasian population of *E. minorelicus* was published in Russian as an abstract for IX All-Union Conference



Map 1. Distribution of *E. mingrelicus mingrelicus* (Kessler, 1874). Shaded area represents known geographical range of the subspecies (Bonacina, 1980; Fet, 1988).

et (Fig. 6). 5-5 (592), 4-5 (35), 5-4 (30), 4-4 (18), 5-6 (3), 6-5 (2), 3-5 (2), 5-3 (1), 3-4 (1), 4-3 (1).

et-est/est-dsb

This ratio measured in 233 specimens was 1.81, $\sigma^2=0.091$.

In order to detect possible variations *within* the Caucasian range, large samples of three populations of *E. m. mingrelicus* were analyzed independently and compared to each other and to the pooled sample. In total, these samples represented 64% of the pooled sample.

Large samples:

A. Batumi (Adzharia, Georgia) 241 specimen, 151 ♂♂ and 90 ♀♀.

Dp ♀ 7-7 (41), 7-6 (10), 6-6 (23) 6-7 (7), 5-6 (3), 6-5 (3), 5-7 (2), 5-5 (1).

Dp ♂ 9-9 (85), 8-9 (18), 9-8 (11), 8-8 (33), 7-7 (2), 8-7 (1), 7-8 (1).

Tv (Fig. 2) 6-6 (197, or 81.7%), 5-6 (19), 6-5 (14), 5-5 (7), 6-7 (1), 4-6 (1), 4-5 (1).

et (Fig. 7) 5-5 (192, or 79.7%), 4-5 (19), 4-4 (13), 3-5 (2), 4-3 (1), 3-4 (1), 3-5 (1).

em all 3-3

aberrations: et=3-5 and est=3-4 (one case)

et-est/est-dsb ratio (measured in 63 specimens) was 1.81 $\sigma^2=0.094$



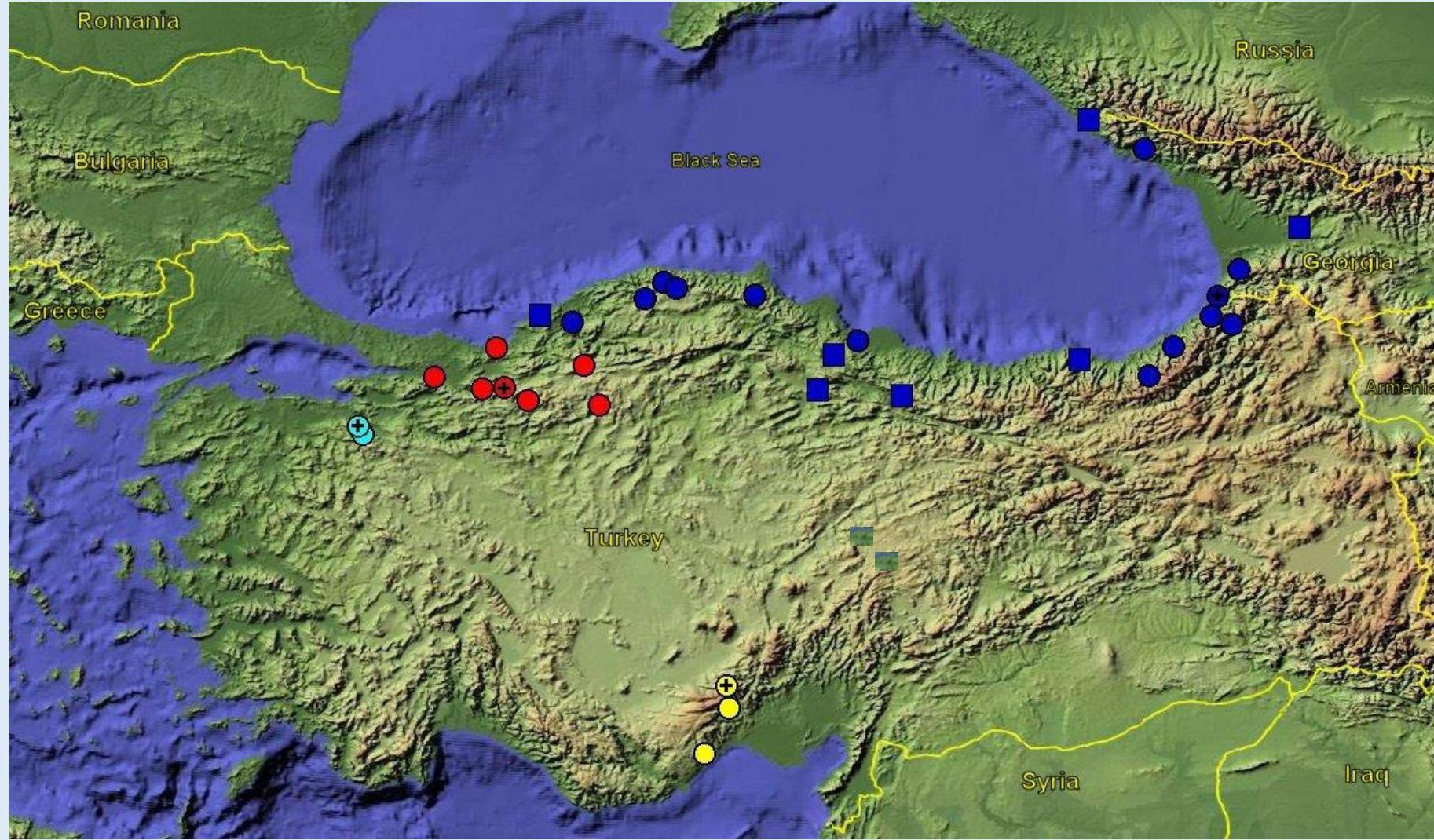
Karl Kessler
(1815-1881)

A revision of the Anatolian-Caucasian “*Euscorpius mingrelicus* complex” (Scorpiones: Euscorpiidae)

Gioele Tropea, Ersen Aydn
Yamur & Victor Fet (2015)



- *Alpiscorpius mingrelicus* (Kessler, 1874)
- Neotype: **GEORGIA. Adjaria:** Batumi, Botanical Garden, 28 August 1985, leg. V. Fet
- From Black Sea coast to ~ 1000 m asl

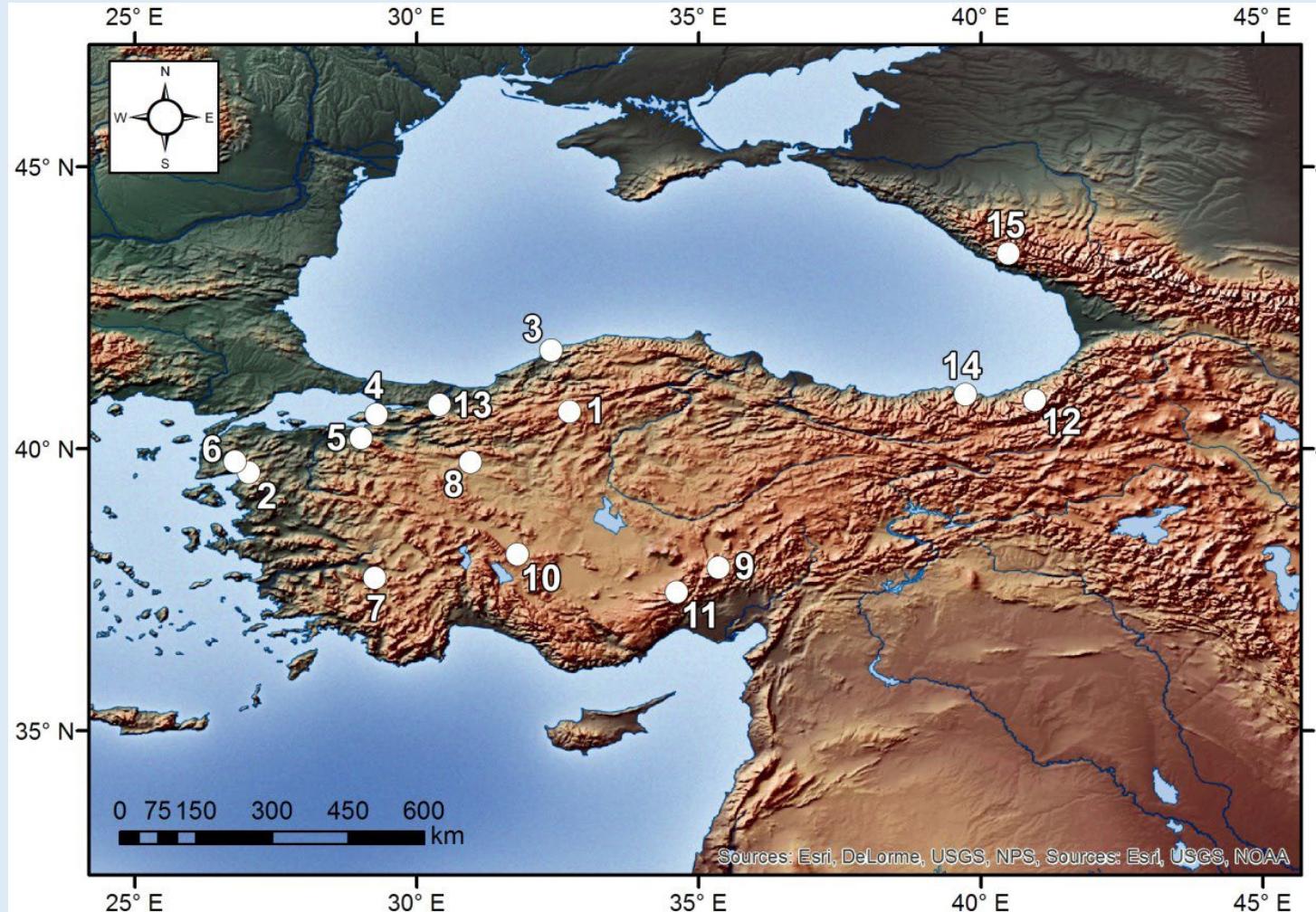


Distribution of genus *Aliscorpius* in Turkey and the Caucasus (after Tropea et al. 2015).
***A. mingrelicus* (blue); type locality: Batumi**

DNA barcoding indicates hidden diversity of *Euscorpius* (Scorpiones: Euscorpiidae) in Turkey

Victor Fet, Matthew R. Graham,
Gergin Blagoev,
Ayşegül Karataş & Ahmet Karataş
2016

- (15) *Aliscorpius mingrelicus*
- GEORGIA. Abkhazia: Ritsa Lake, 43.4731°N, 40.50°E, 14 October 2004, leg. Yu. Marusik



Family IURIDAE

(a *relict Anatolian-Aegean family!*)

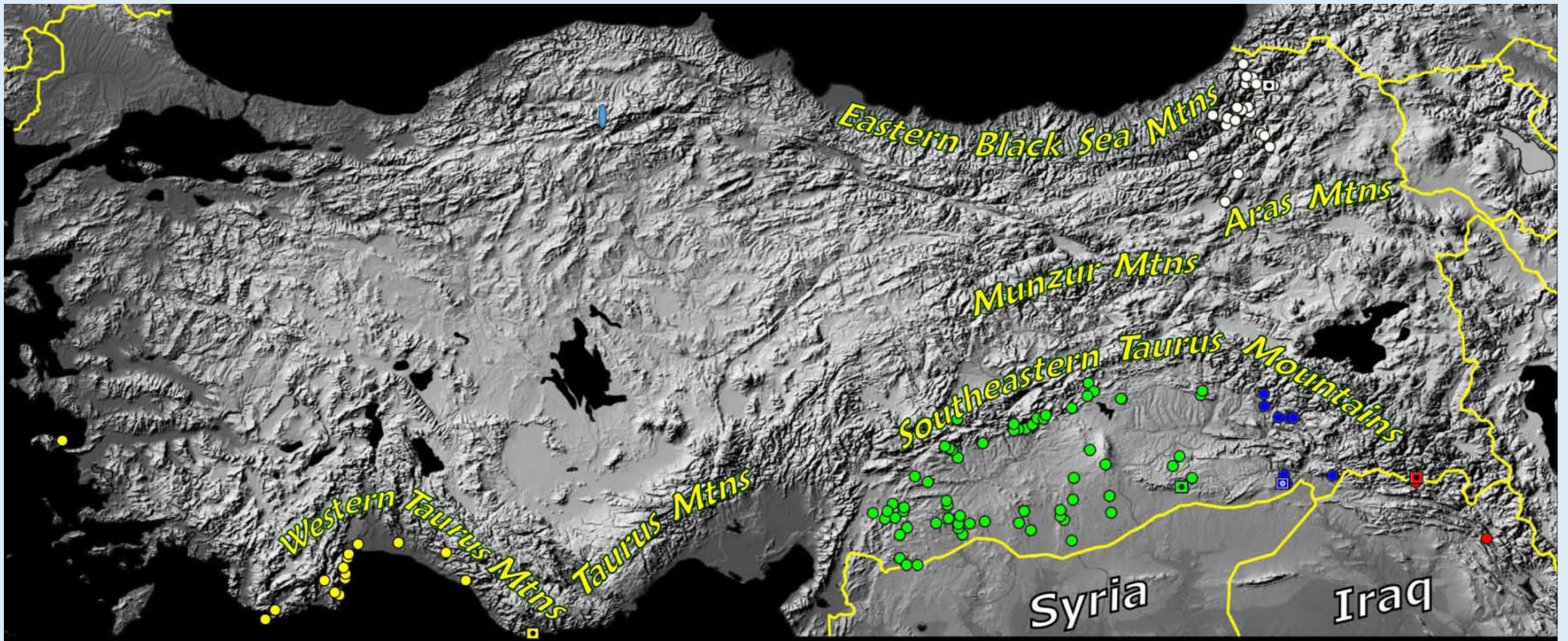
(northeastern range limit)

1 genus, 1 species in the Caucasus

(Artvin Province, NE Turkey):

maybe also Georgia: Adjaria?

PLEASE SEARCH)



Distribution of the Anatolian genera *Neocalchas* and *Calchas*

- Yellow dot: *Neocalchas gruberi*
- Red dot: *Calchas anlasi*
- Green dot: *Calchas birulai*
- Blue dot: *Calchas kosswigi*
- White square: *Calchas nordmanni*



TURKEY: Artvin Province, Hatila Valley

(Photo courtesy: Ersen Yağmur)

Locality of 3 scorpion species:
Alpiscorpius mingrelicus (Euscorpiidae)
Calchas nordmanni (Iuridae)
Mesobuthus eupeus (Buthidae)

Research Article

Scorpion Fauna of Hatila Valley National Park
(Artvin, Turkey)
Ersen Aydın Yağmur, Halil Koç, Gioele Tropea, Fatih
Yeşilyurt (2012)

**Etudes on Iurids, II. Revision of genus *Calchas* Birula, 1899, with
the description of two new species (Scorpiones: Iuridae)**

Victor Fet, Michael E. Soleglad & František Kovařík (2009)



***Calchas* Birula, 1899**

Calchas nordmanni

Birula, 1899:

NE Turkey (Çoruh River valley), up to 2100 m asl
(E. A. Yağmur, pers. comm)

??Georgia: Adjaria

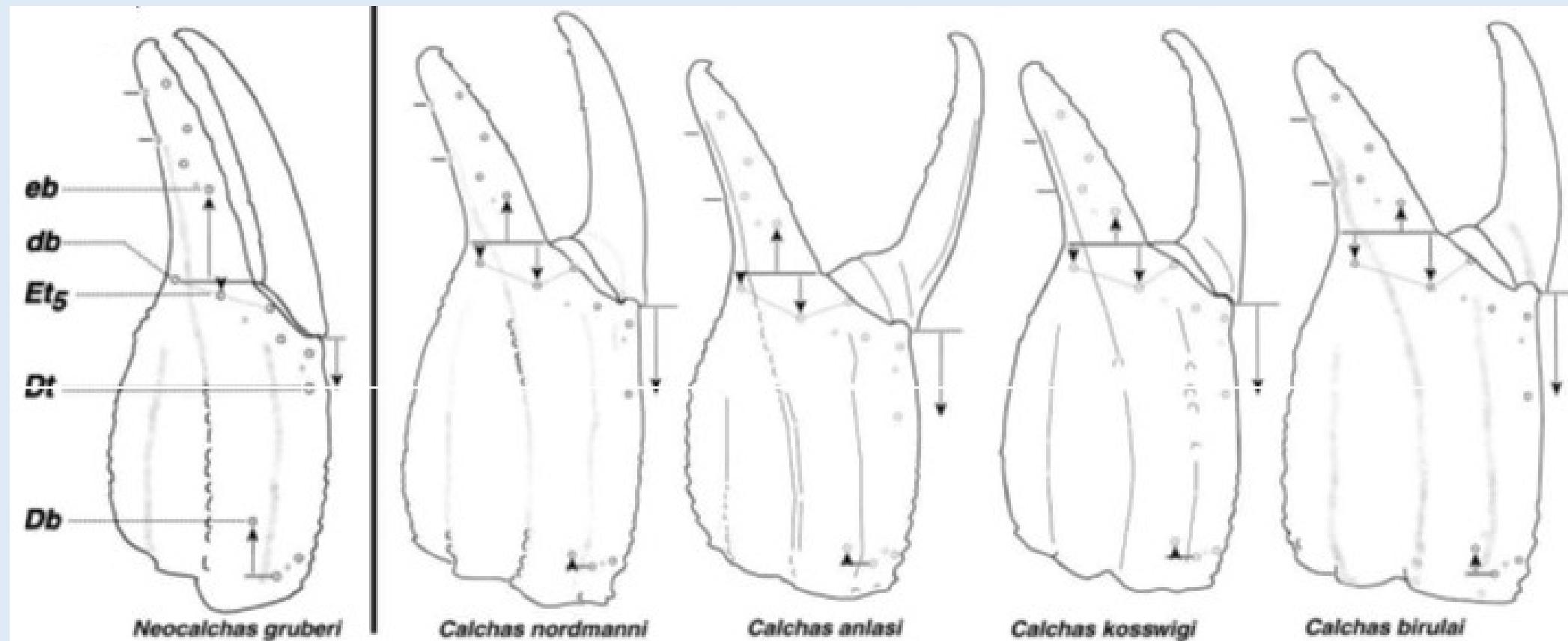
TYPES: 2 ♀ subad. (ZISP 942), TURKEY, Artvin Province, Ardanuç District, Ardanuç, in houses, 5(17) July 1898,
K. M. Deryugin leg. (former Russian Empire, Kutais Province)

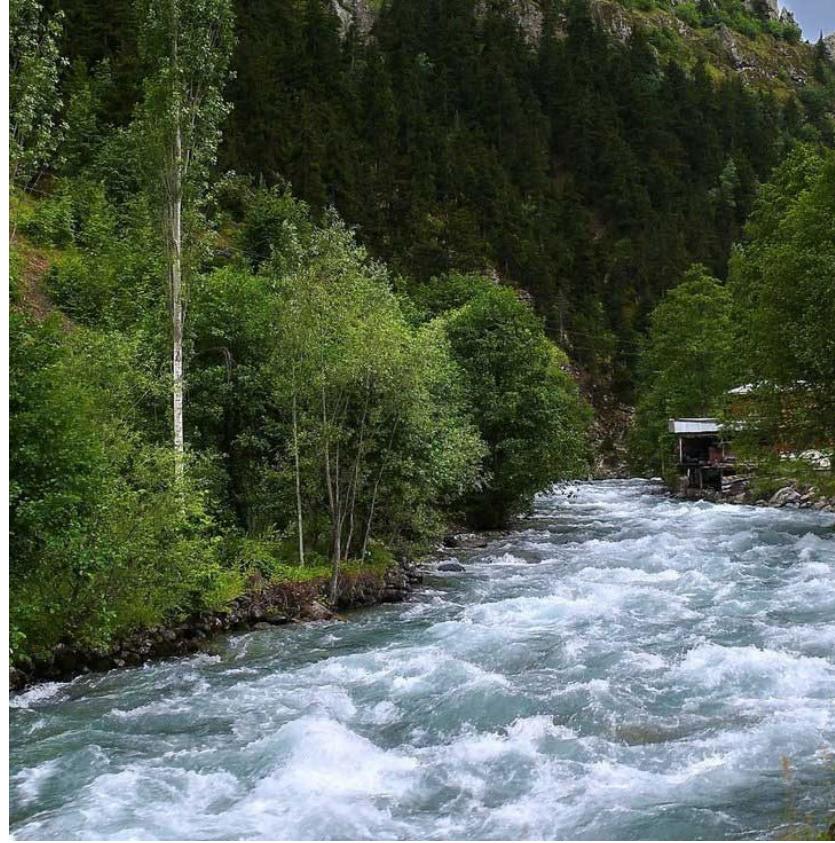
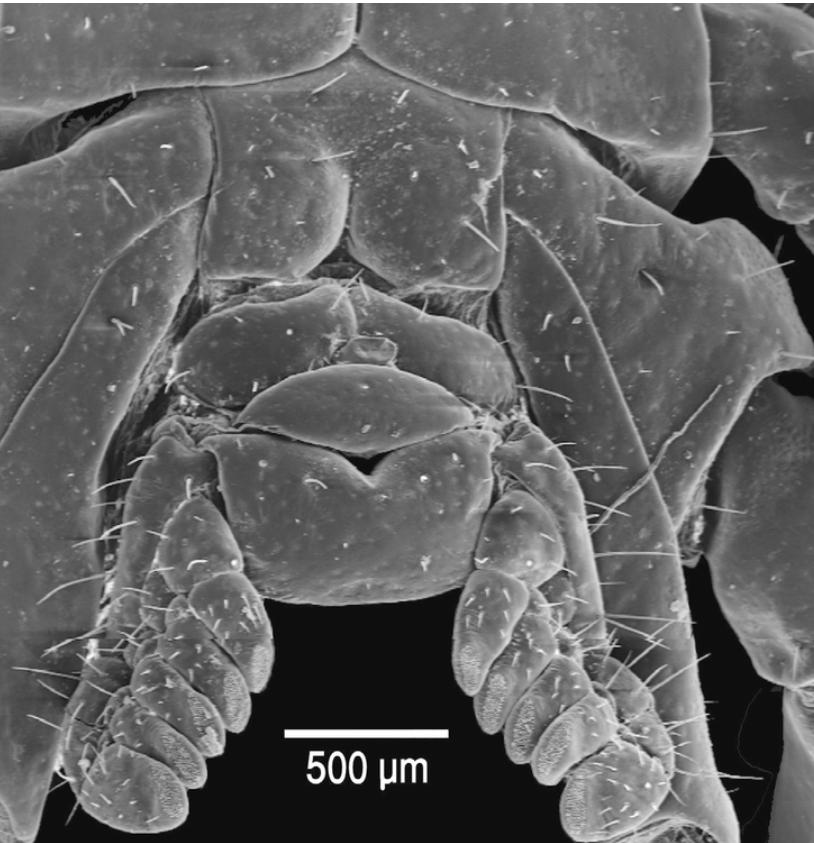


**Konstantin Deryugin
(1878-1938)**

Etudes on iurids, VI. Further revision of *Calchas* Birula, 1899 (Scorpiones: Iuridae), with a description of a new genus and two new species

**Ersen Aydin Yağmur, Michael E. Soleglad,
Victor Fet & František Kovařík (2013)**

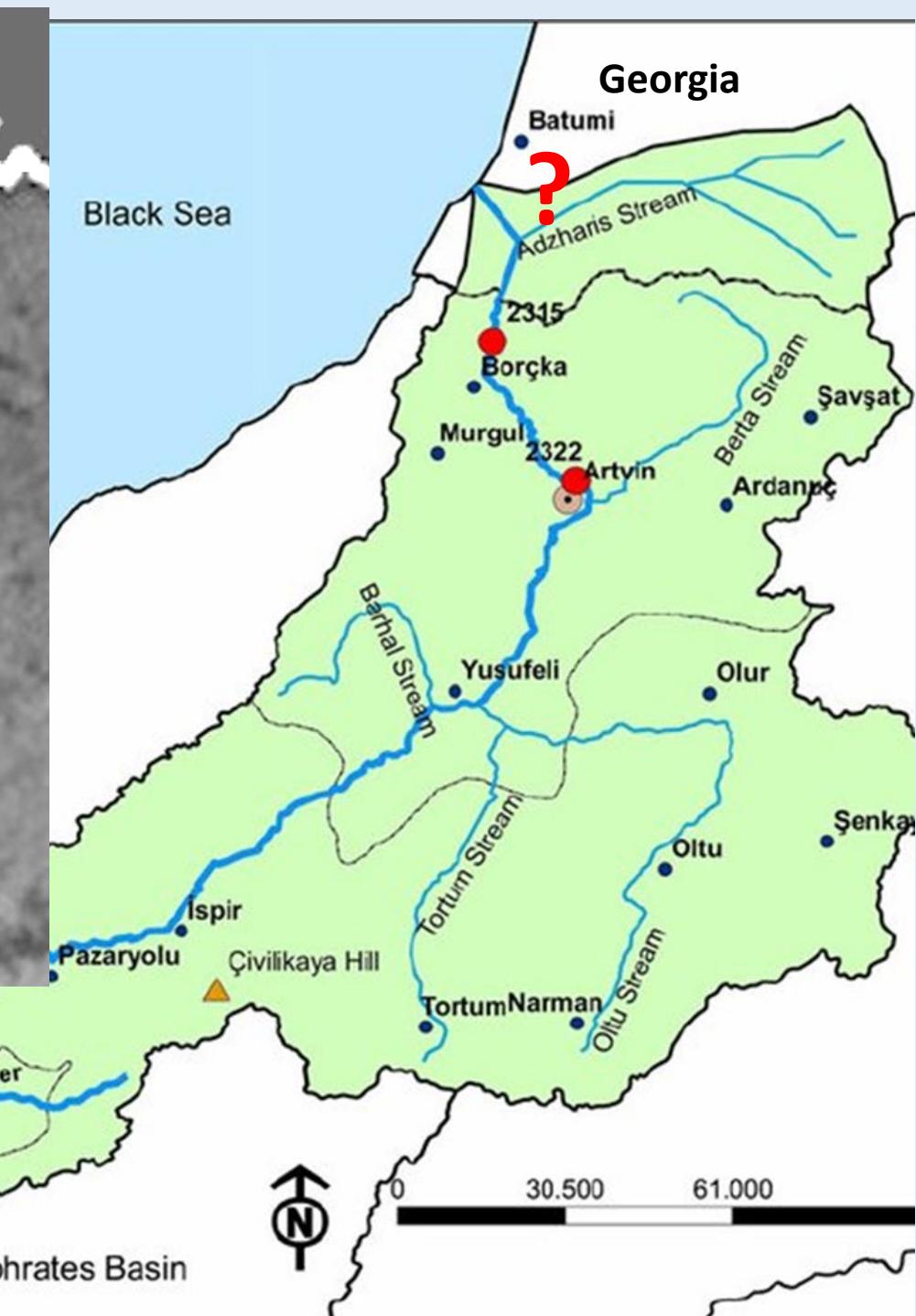




Calchas Birula, 1899 (Iuridae) (Turkey):
one of the most primitive (basal) scorpion genera



**NEEDS TO BE SEARCHED
FOR IN GEORGIA!!!
(Adjaritskali Valley)**



Family BUTHIDAE (toxic!)

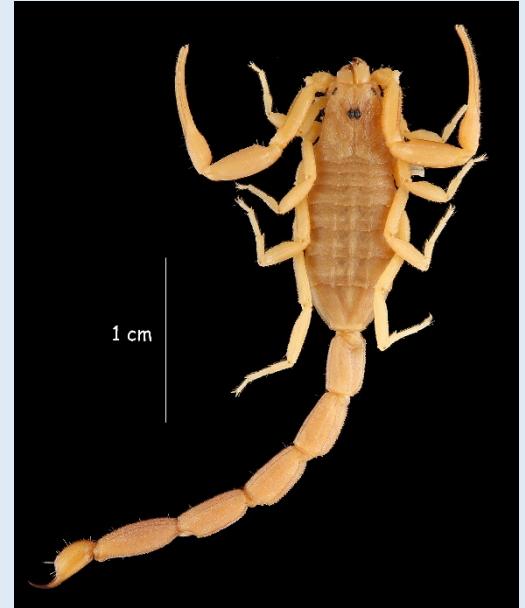
**in the Caucasus: 6 genera, 8 species
[possibly more!],**

**(Armenia, Azerbaijan, Iran, Georgia,
Russia, Turkey)**

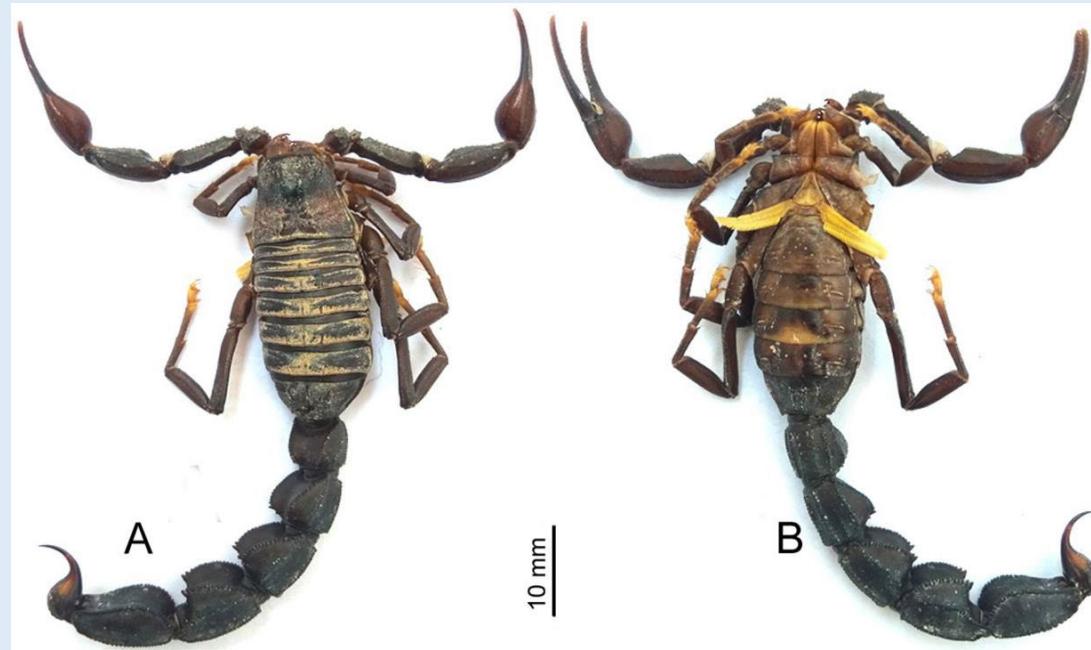
Compsobuthus armenicus Lourenço & Leguin, 2015

Lourenço W.R. & Leguin E.-A., 2015. A new species of *Compsobuthus* Vachon, 1949 (Scorpiones, Buthidae) from Armenia. *Zoology in the Middle East*, 61, No 3, 273-277

- Coll. in 1961 by K. Lindberg (Lund): ARMENIA, southeast: Kapan, 700-1000 m
- A Middle Eastern genus (from Turkey to Pakistan)



Androctonus crassicauda
(Olivier, 1807)
(Armenia, Azerbaijan,
Iran, Turkey): widely
distributed in the Middle
East

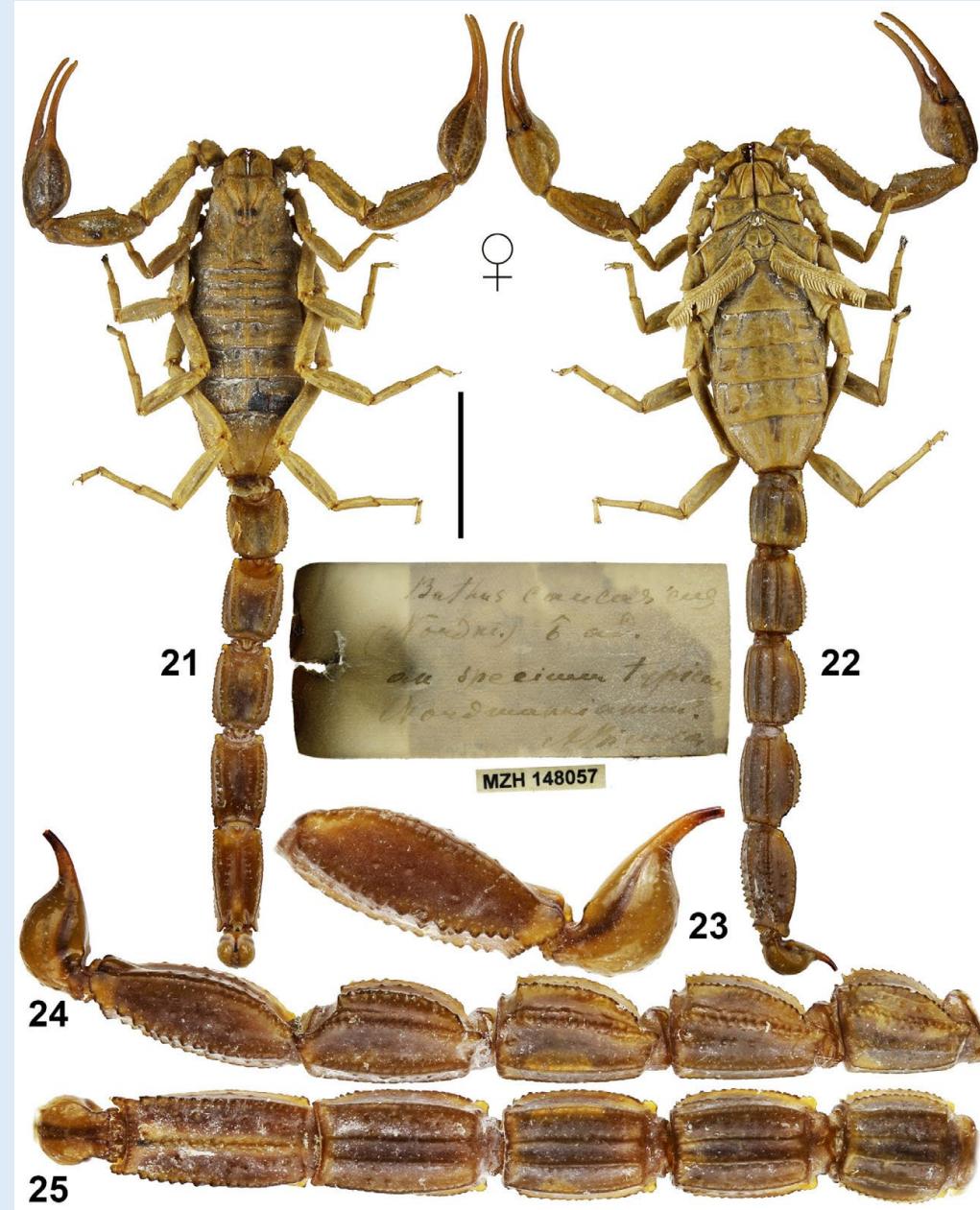


- The largest scorpion in the Caucasus
- Studied in Azerbaijan by Eivaz Yusubov (PhD 1984, Baku)
- Not in very high mountains; northern limit of distribution -- in southern Armenia and Azerbaijan

(after Barahoei
et al., 2020)

Guillaume-Antoine Olivier (1756-1814), the author of:
Le Voyage dans l'Empire Othoman, l'Égypte et la Perse (1807).





Olivierus caucasicus (Nordmann, 1840)

Type loc.: Tiflis

← left: type specimen from Helsinki University,
Finland

(the ONLY specimen from Tiflis that was
available to Birula, 1917 !)

**Was uncommon in collections from
Transcaucasia but common from Daghestan!**

**Not in the high mountains (only up to 300 m in
Daghestan). Synanthropic.**

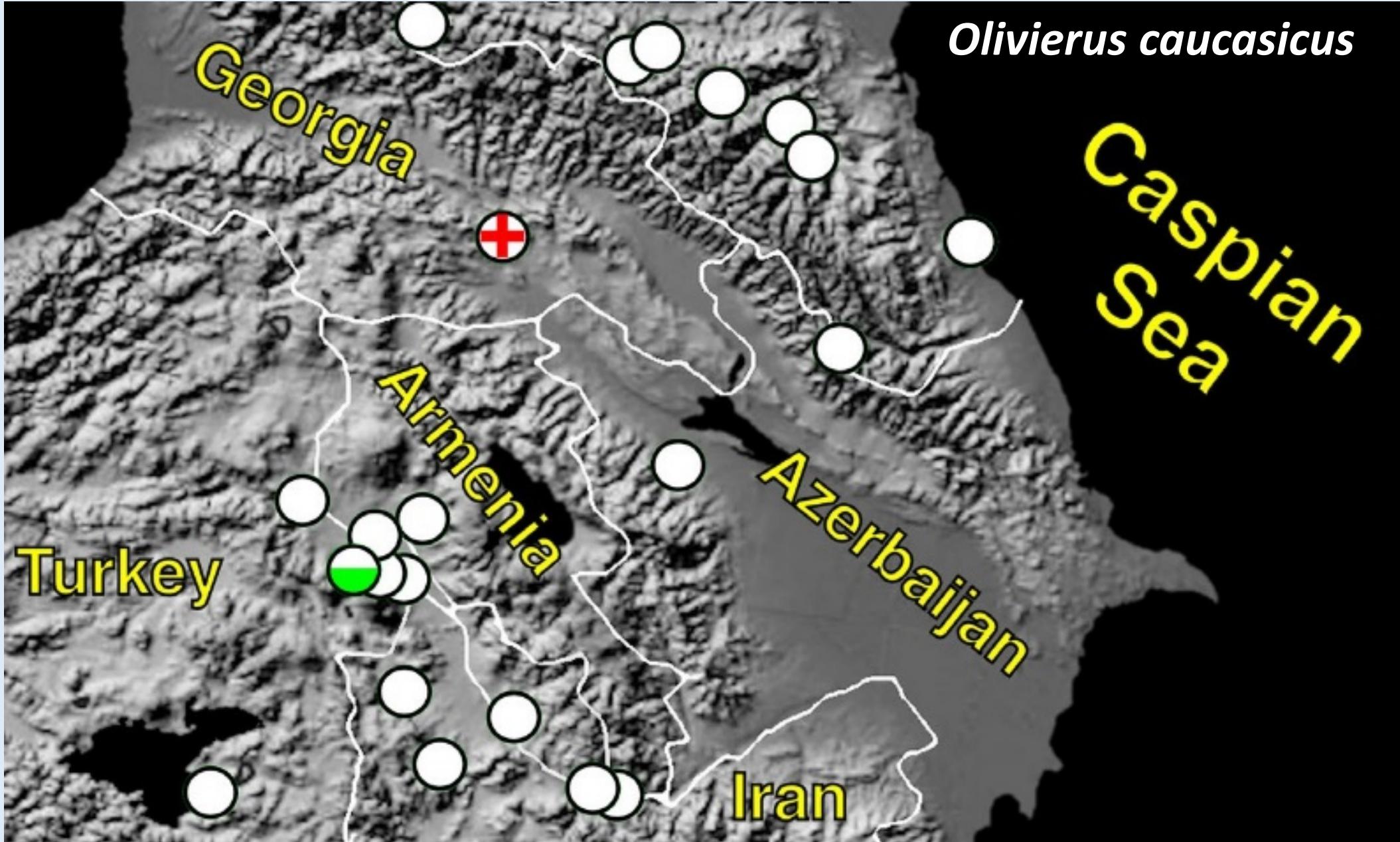
**Needs barcoding / detailed
phylogeographic assessment**

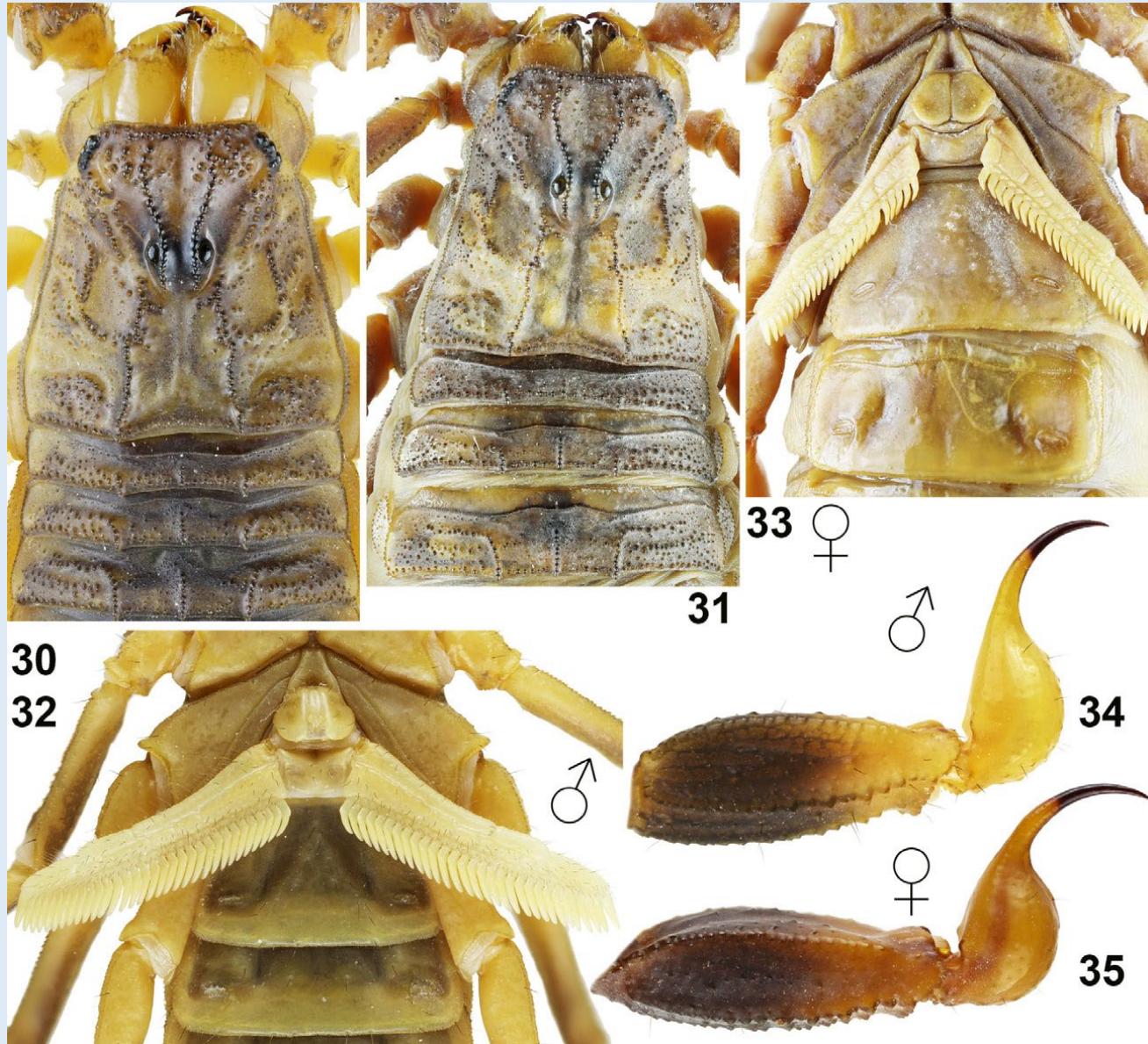
**Revision of the *Mesobuthus* [now
Olivierus] *caucasicus* complex
from Central Asia, with
descriptions of six new species
(Scorpiones: Buthidae)**

**Victor Fet, František Kovařík,
Benjamin Gantenbein, Ronald C.
Kaiser, Alexander K. Stewart, &
Matthew R. Graham**

2018

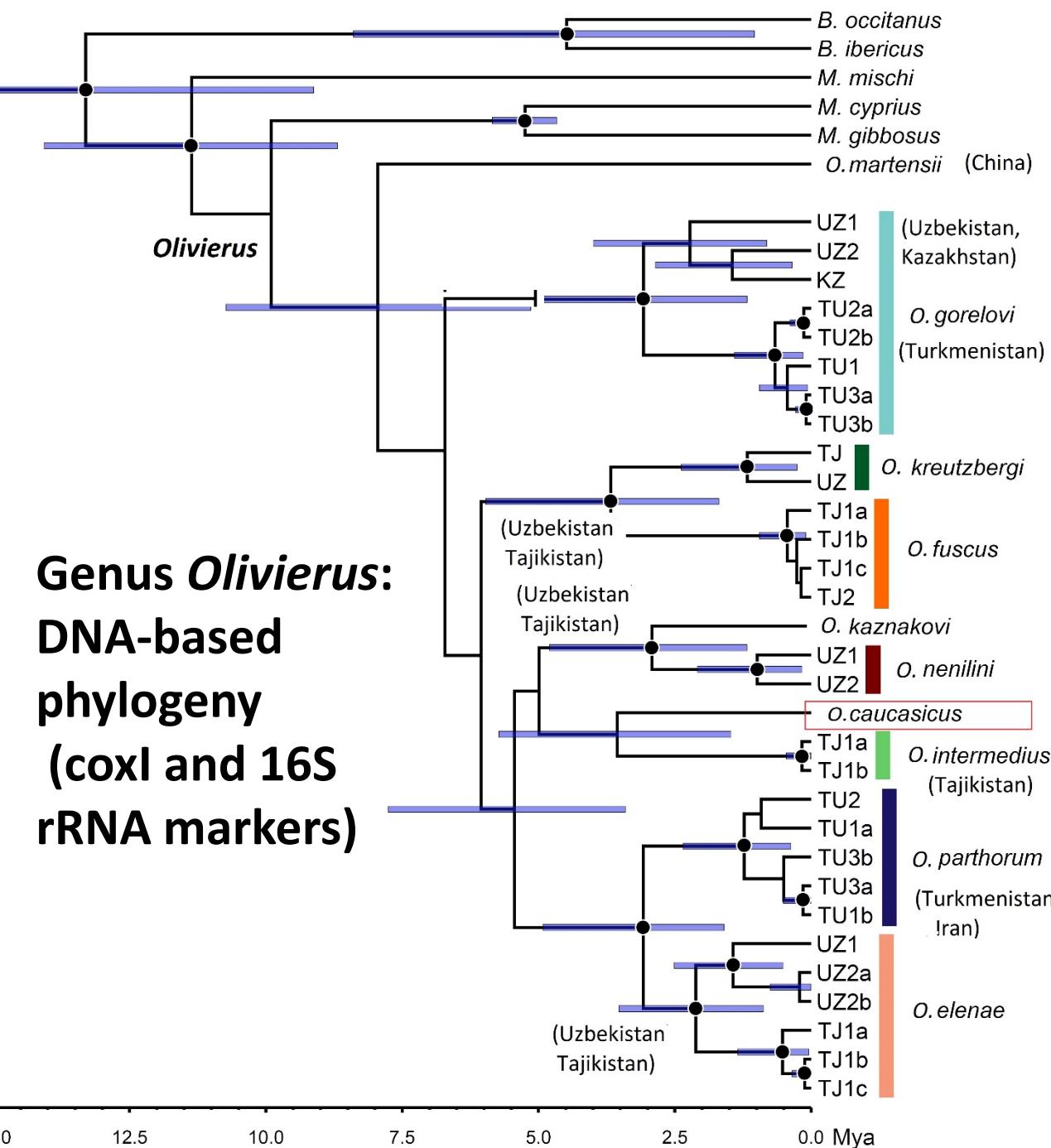






- *Olivierus caucasicus* is now (since 2018) **LIMITED to Caucasus**
- Status of the North Caucasian populations of *O. caucasicus* currently under revision; material is needed!

Genus *Olivierus*:
DNA-based
phylogeny
(*coxl* and *16S rRNA* markers)



***O. caucasicus* s.str. probably migrated to the West during an aridization cycle.**

This must have happened via northern Iran, and north to the Russian Caucasus and northeastern Turkey.

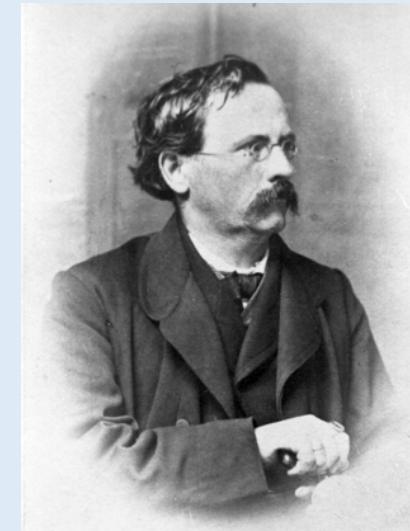
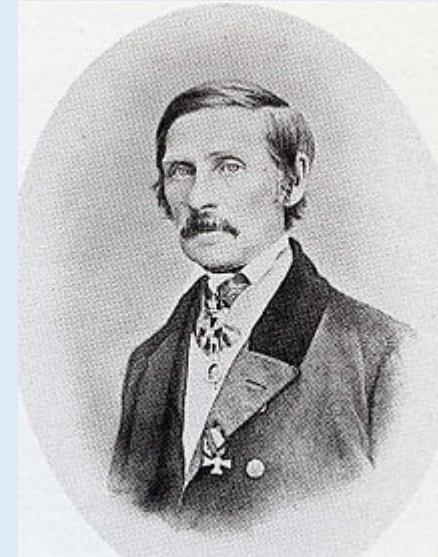
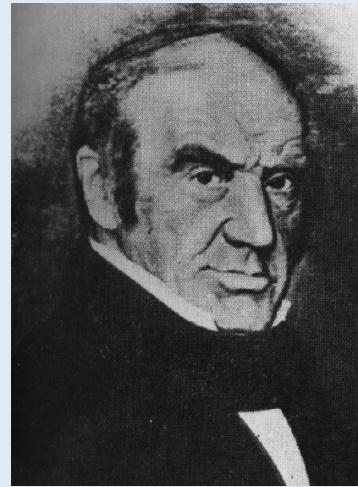
The divergence from the sister *O. intermedius* is dated to the late Miocene to early Pleistocene (5.7 – 1.5 Ma; mean = 3.6 Ma) (Fet et al. 2018)

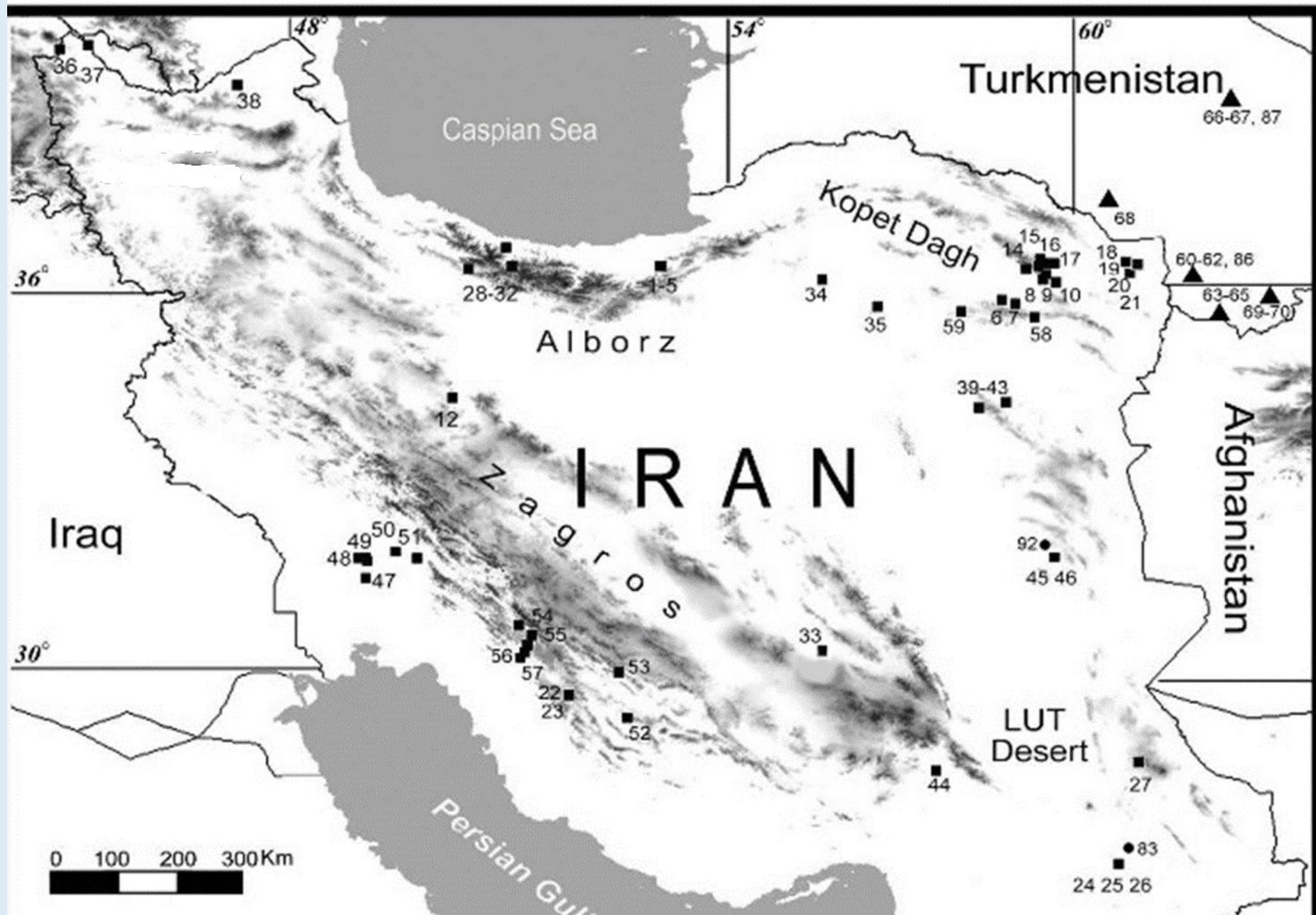
Mesobuthus eupeus

(C. L. Koch, 1839)

[complex] - **UNDER REVISION!**

- Described from “Caucasus”
- = *ornatus* Nordmann, 1840 (Imereti)
- = *cognatus* L. Koch, 1878 (Atskuri)
- Up to 2400 m asl
- Populations from Turkey and Iran now under revision
- Population from Lake Urmia (Iran, West Azerbaijan) was described as a species *persicus* Pocock, 1899
- **Needs barcoding / detailed phylogeographic assessment**





***Mesobuthus*
eupeus
[complex] from
Iran (after
Mirshamsi et al.
2010)**



Mesobuthus eupeus
[complex] from **Iran** (after
Mirshamsi et al. 2011):

(3) *M. e. philippovitschi*,
Mazandaran

(4) *M. e. eupeus*, West
Azerbaijan

(5) *M. e. thersites*, Khorasan

(6) *M. e. afghanus*, Khorasan

(7) *M. e. kirmanensis*,
Sistan va Baluchistan

(8) *M. phillipsi*, Khuzestan.

N. E. Novruzov (Baku):

**2018: Some data about the night activity
and trophic behaviour of *Mesobuthus
eupeus* (Arachnida, Scorpiones, Buthidae)
in the Eastern Azerbaijan**

**2019: Distribution and morphometric
variability of *Mesobuthus eupeus* (C.L.
Koch, 1839) (Arachnida, Scorpiones,
Buthidae) in Eastern Azerbaijan**



MORE SCORPIONS OF THE CAUCASUS REGION

from the neighboring regions of Iran

(Ardabil, East Azerbaijan, West Azerbaijan Provinces)

(after Barahoei et al. 2020)

Buthidae:

Compsobuthus matthiesseni (Birula, 1905): East Azerbaijan,
West Azerbaijan

Hottentotta saulcyi (Simon, 1880) – Ardabil, East Azerbaijan,
West Azerbaijan

Hottentotta zagrosensis Kovařík, 1997 – West Azerbaijan

Mesobuthus vesiculatus (Pocock, 1899) – East Azerbaijan,
West Azerbaijan

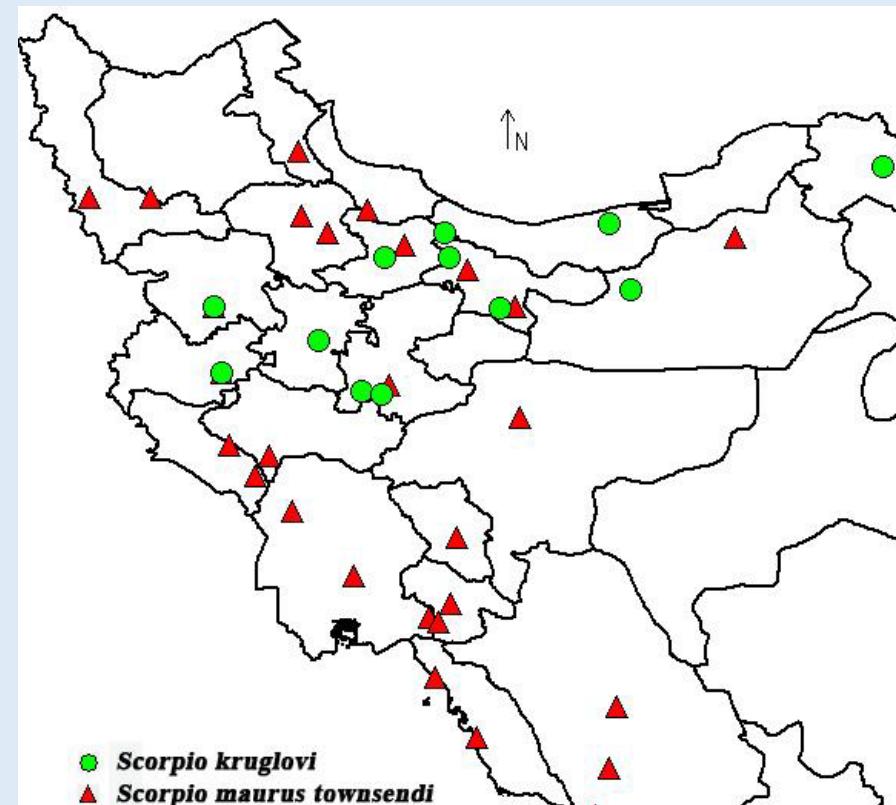
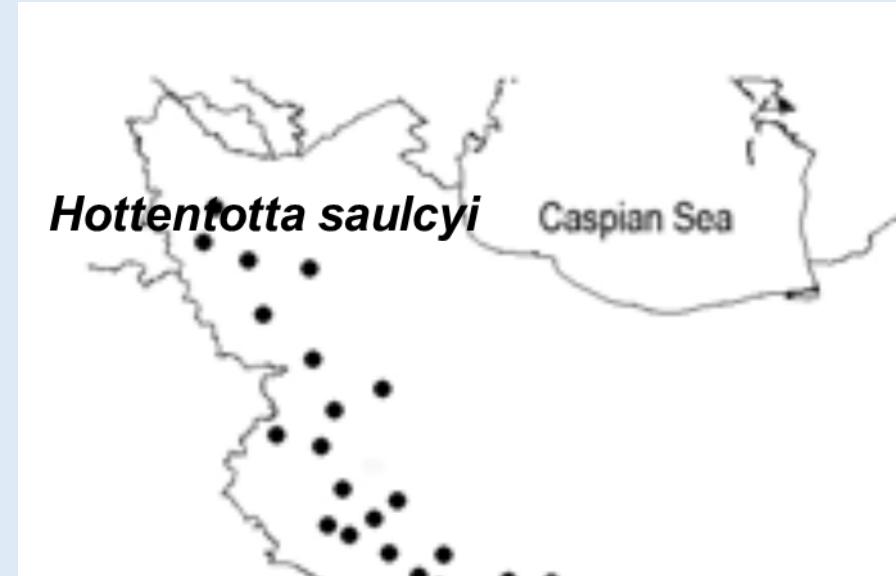
Odontobuthus doriae (Thorell, 1876)- East Azerbaijan,

Hemiscorpiidae:

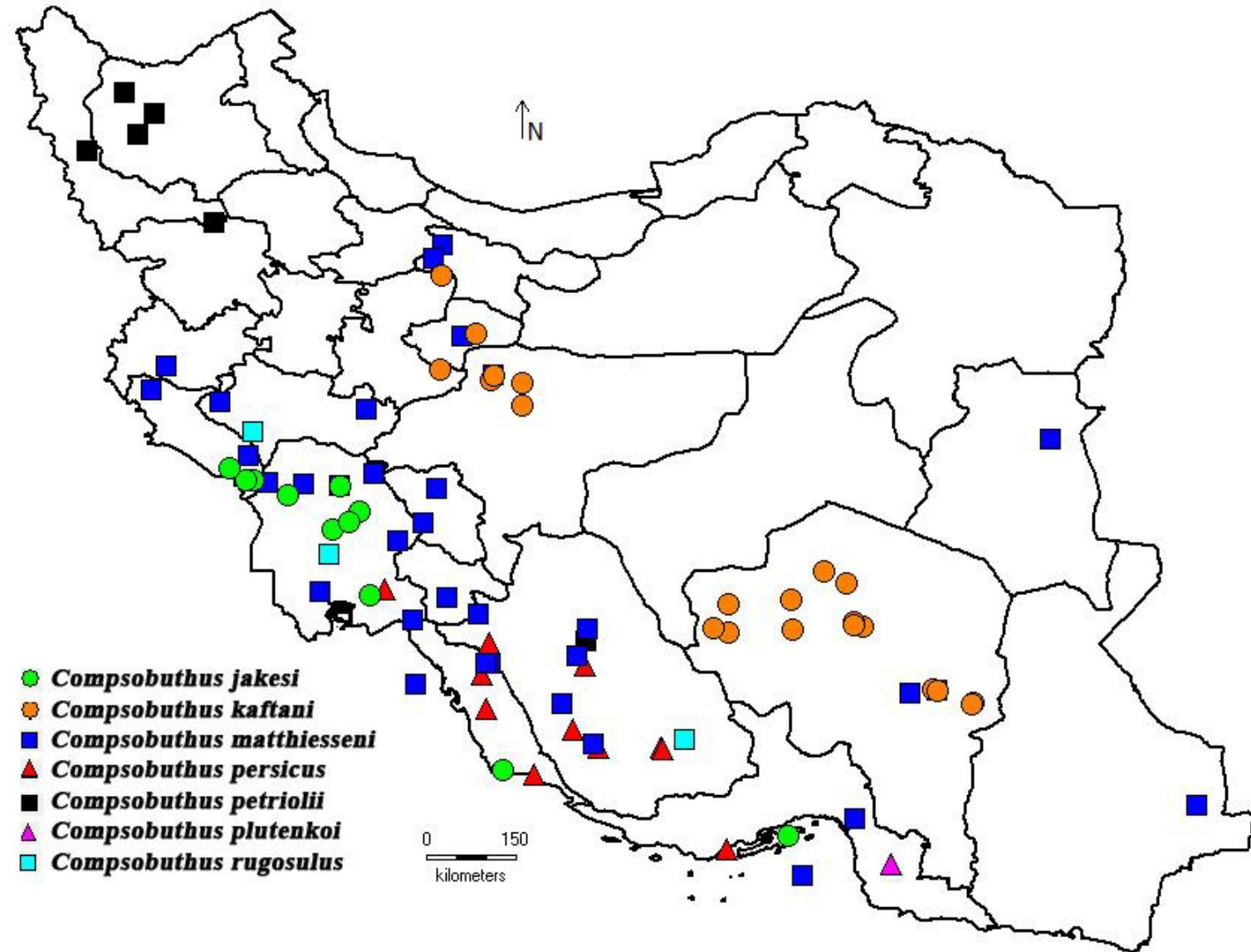
Hemiscorpius lepturus (Peters, 1861) – Ardabil, Hayran Mts.,
38°26' N, 48°33' E

Scorpionidae:

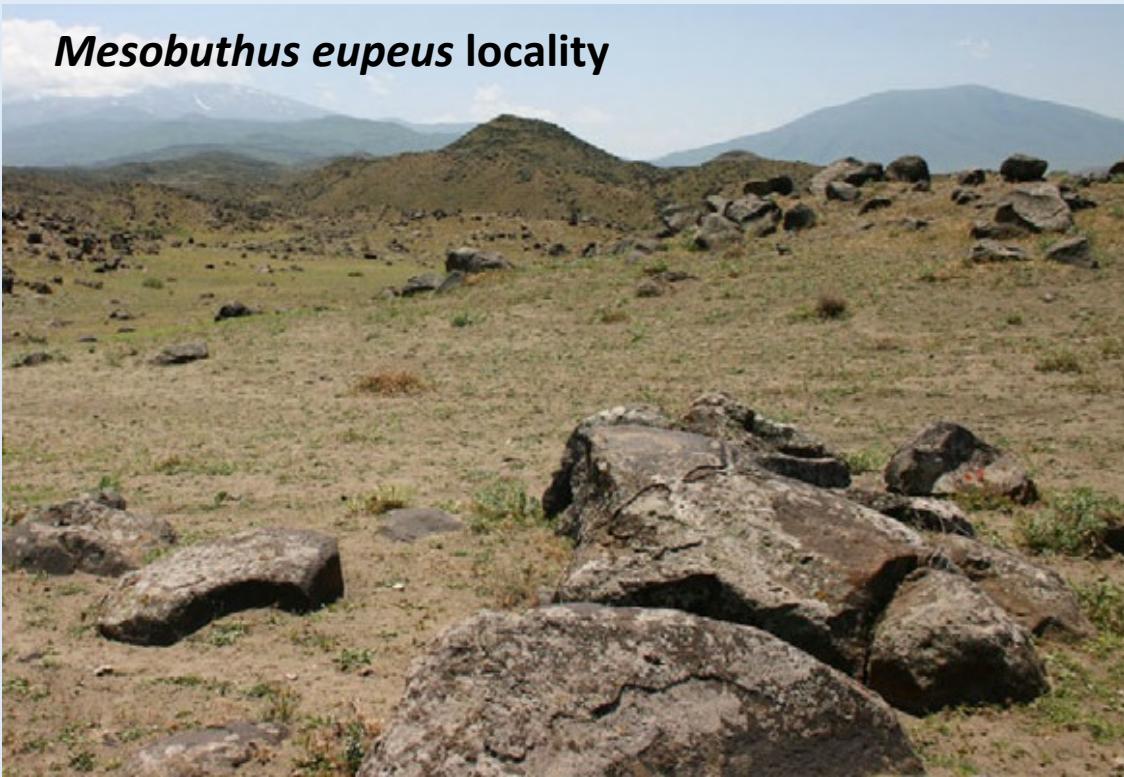
Scorpio townsendi (Pocock, 1900) – Ardabil, West Azerbaijan



Compsobuthus matthiesseni (Birula, 1905) – IRAN: East & West Azerbaijan (Barahoei et al. 2020)



Mesobuthus eupeus locality



- Turkey: İğdir Province, Melekli, 900 m asl
- Photo courtesy: Ersen Yağmur & Halil Koç

- Any scorpions *here*??
- Photo courtesy: NASA

Thank you! Gmadlobt ! გმადლობთ !

ANY QUESTIONS?