

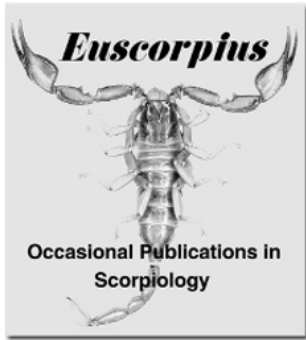


# On the trace of old Russian collectors: genus *Orthochirus* (Scorpiones: Buthidae) from Central Asia and Iran

*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).



**32th European Congress  
of Arachnology (virtual)  
Greifswald, Germany  
23 August 2021**

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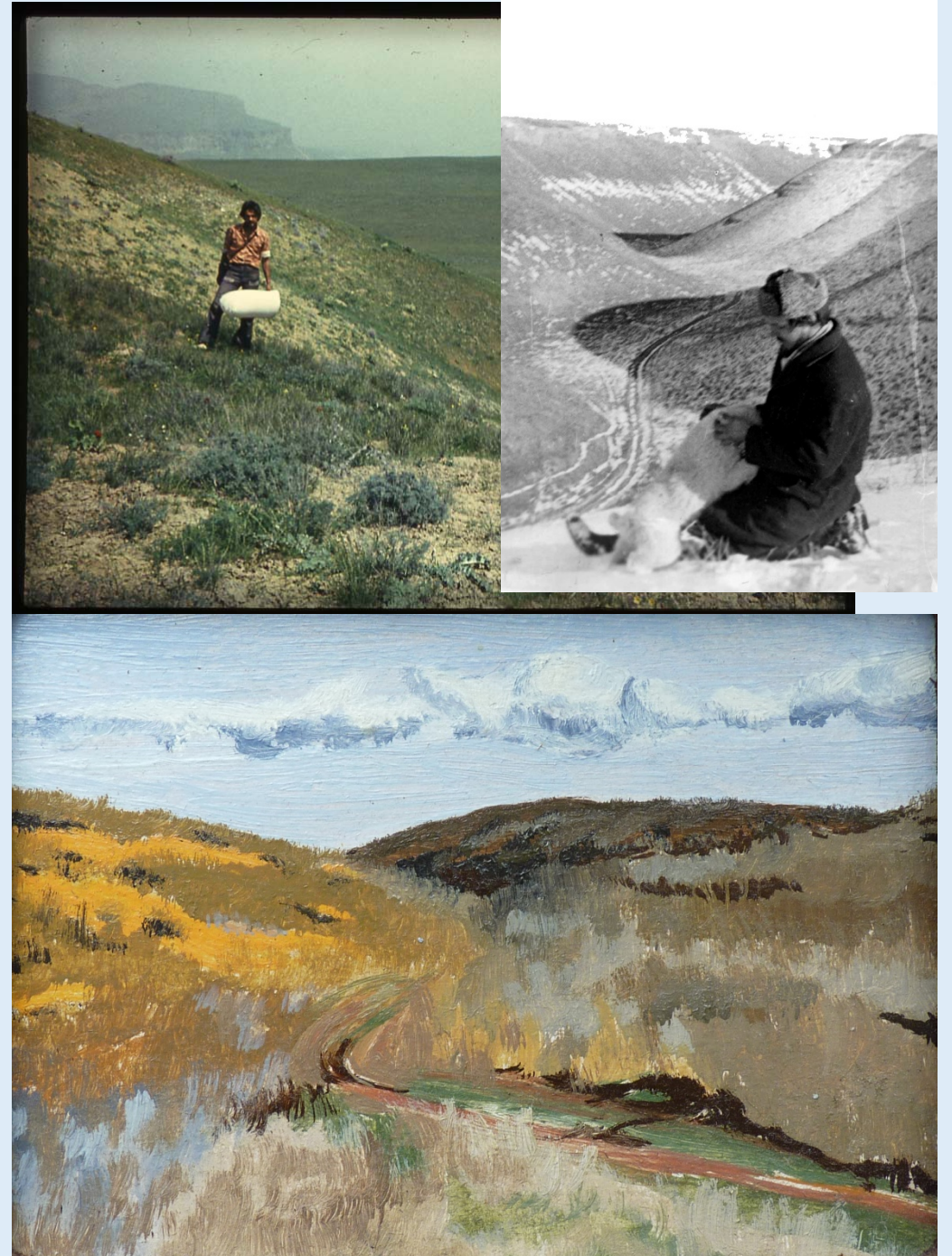
## Family BUTHIDAE

Genus *Orthochirus* Karsch, 1892 (deserts: North Africa, Middle East, Central Asia)

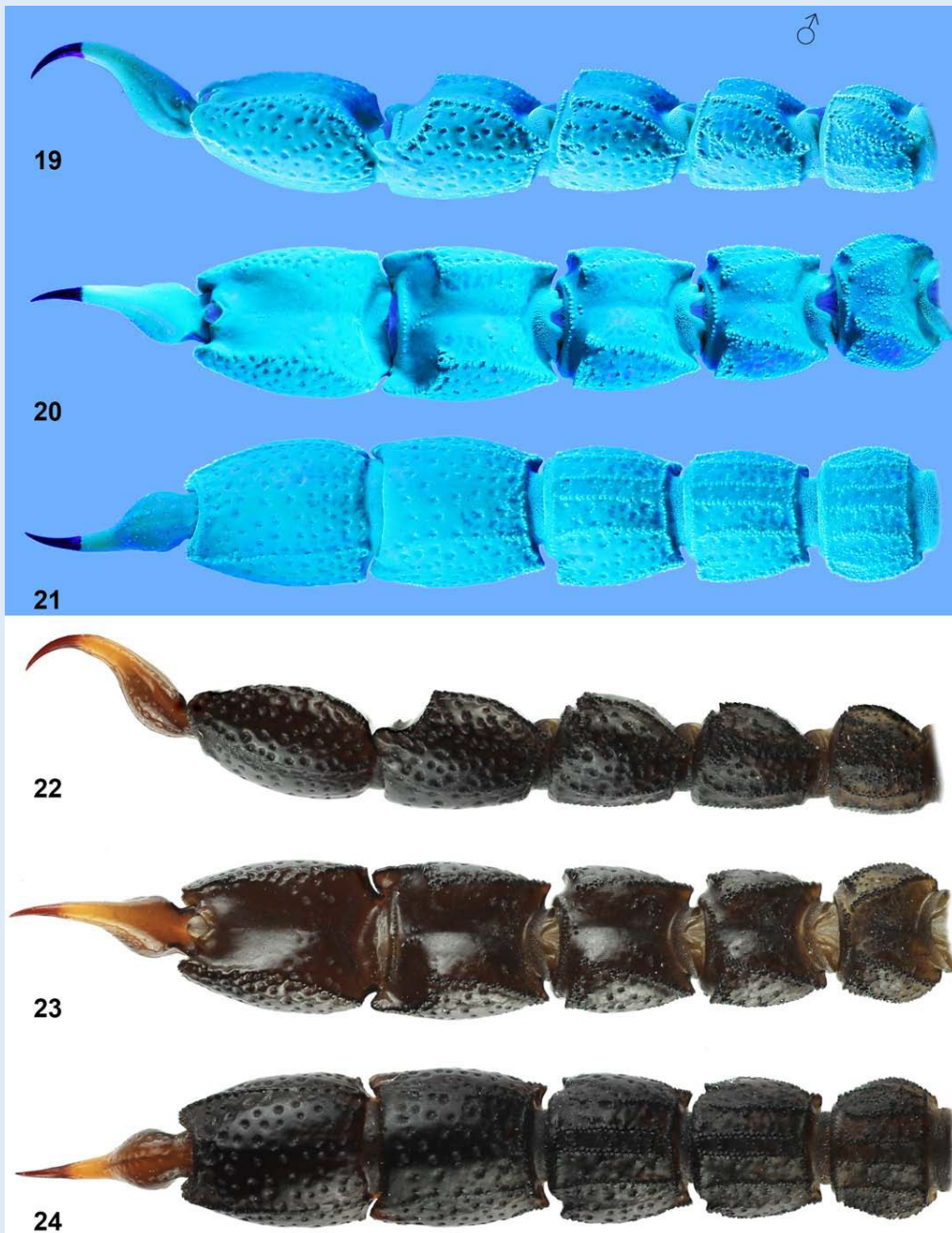
Numerous new *Orthochirus* species were described by our research group in recent years. The diversity of this genus in **Central Asia and Iran** has been a subject of controversy for over 100 years, and **identity of most species from this area was unclear.**



*To the memory of  
**Viktor Krivokhatsky** (1954-2021),  
arachnology curator  
in Zool. Institute, St. Petersburg,  
Russia, an expert on ant-lions*

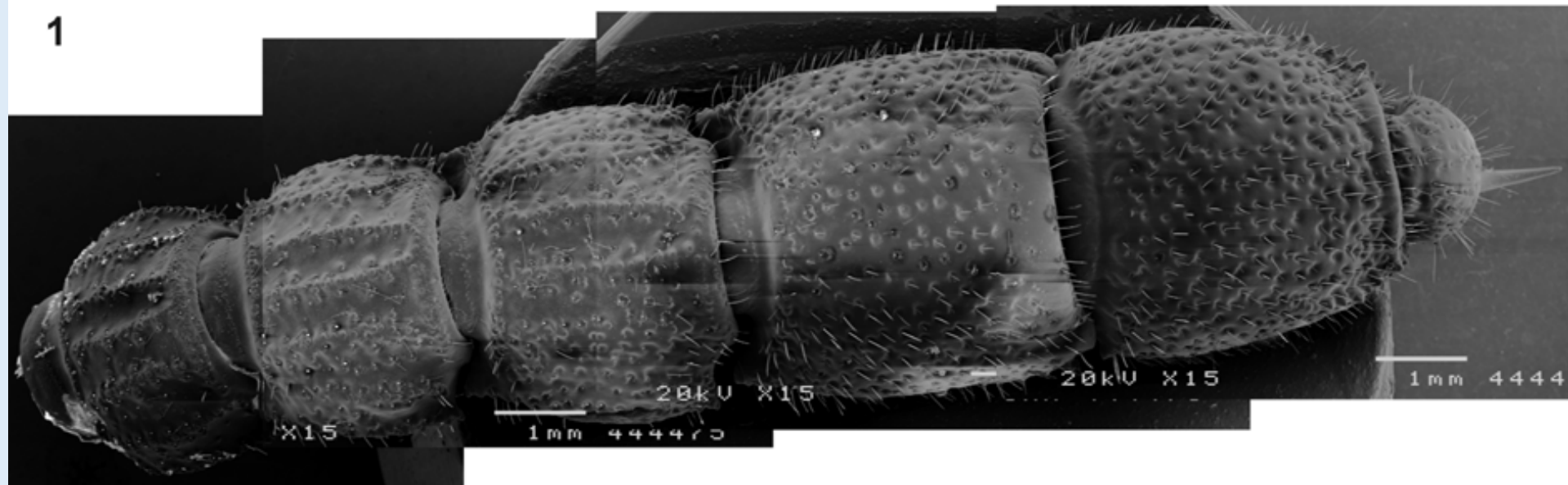


A highly modified metasoma (“tail”) with a foldable telson (“stinger”) and amazing, dense (up to 1,000) ventral punctations (“pits”) housing chemosensory sensillae.

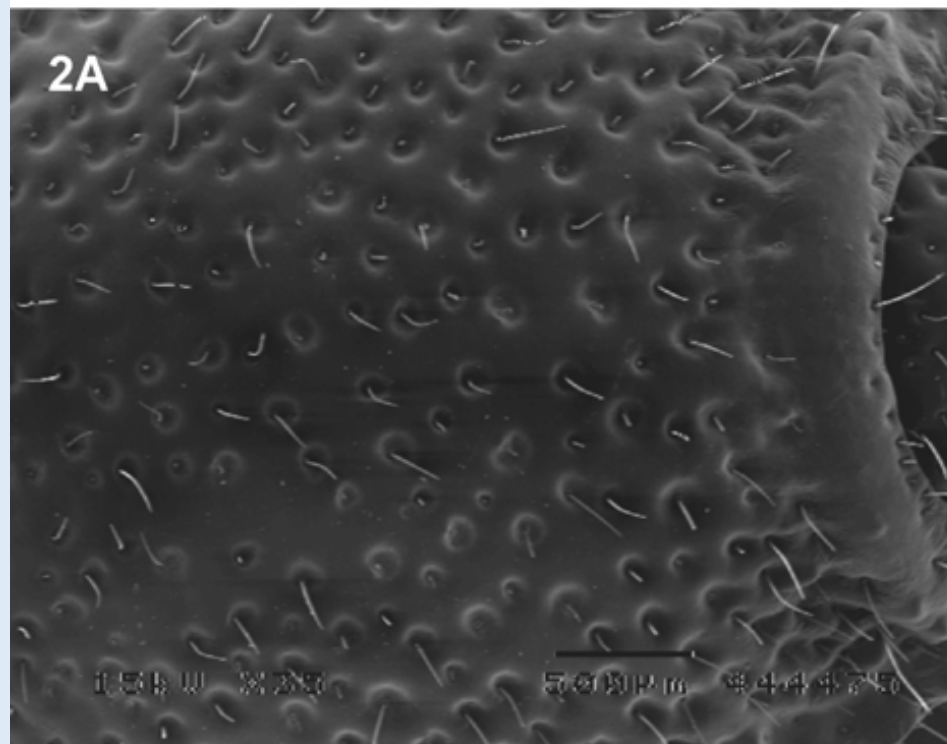




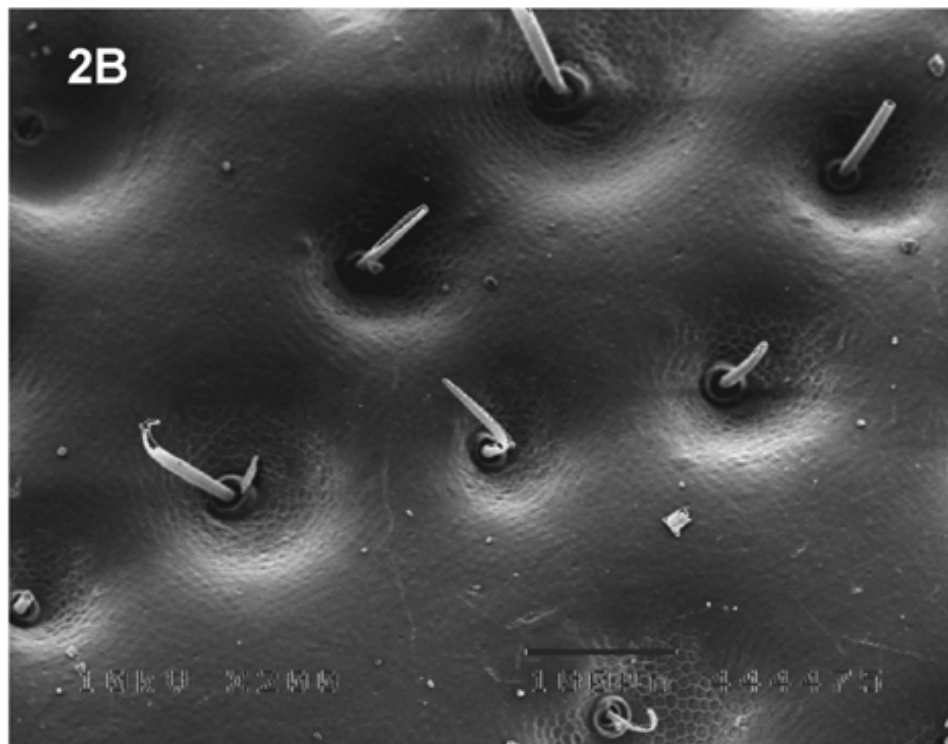
1

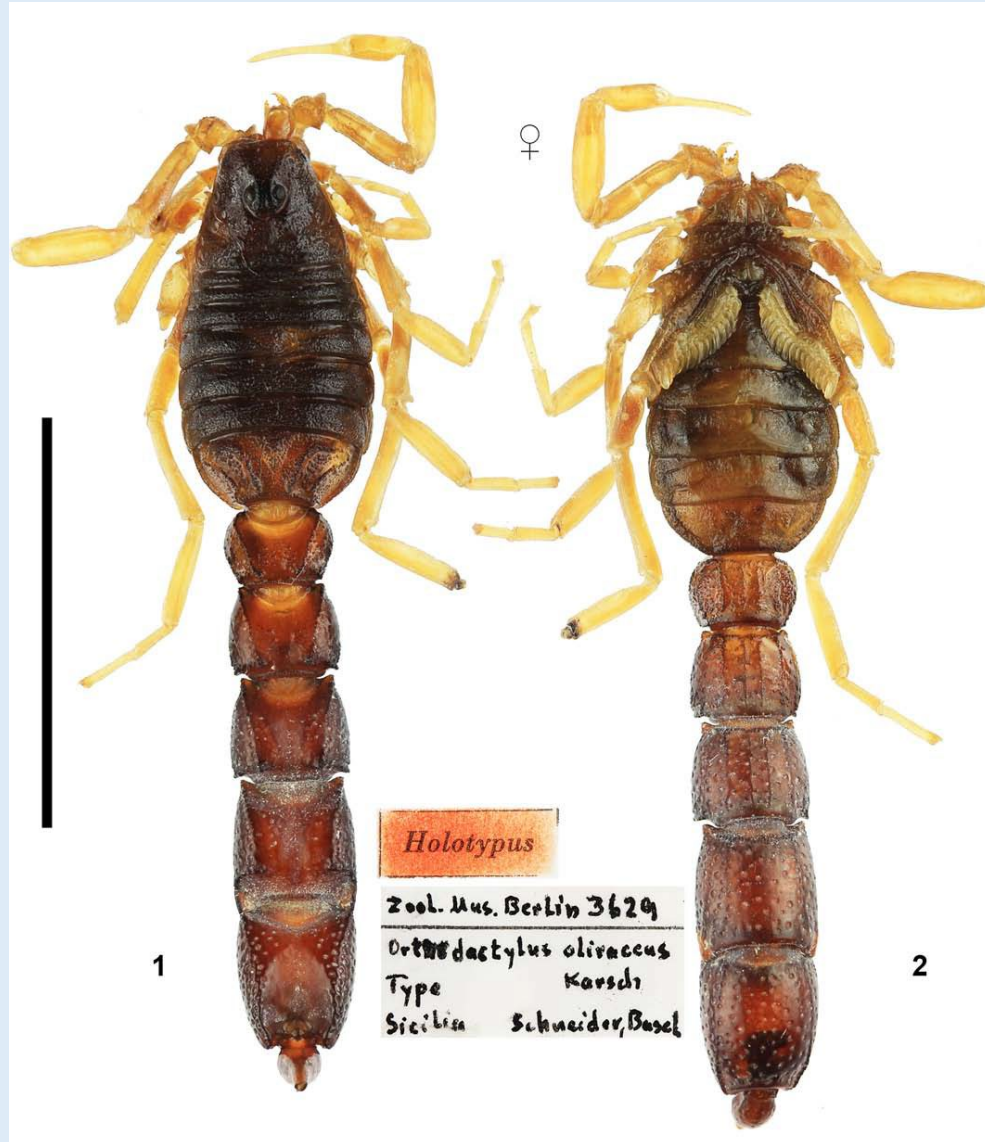


2A



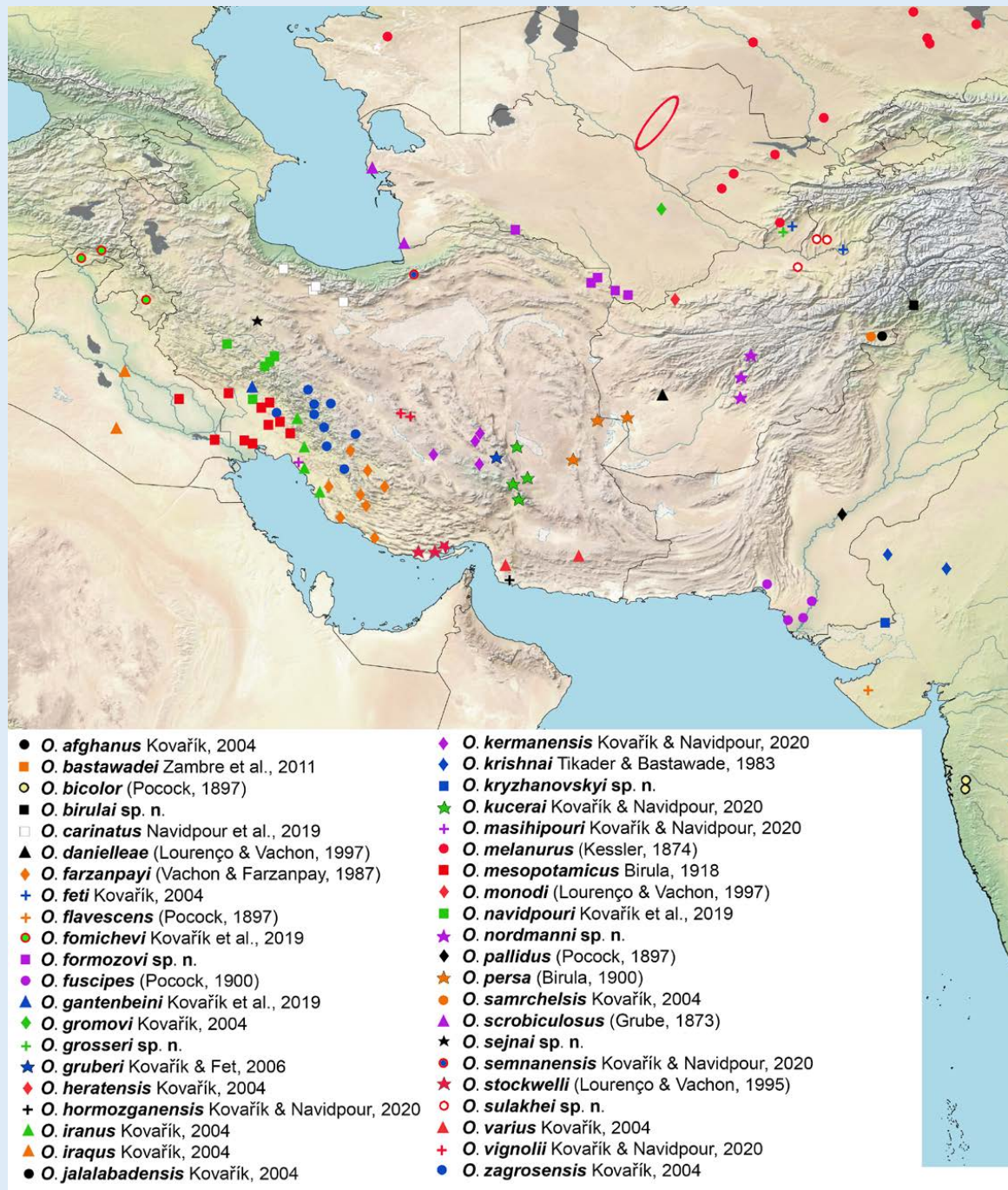
2B





The type species, an enigmatic *Orthochirus olivaceus* (Karsch, 1881) (ZMB), from “Sicily” (!) (more likely Egypt)





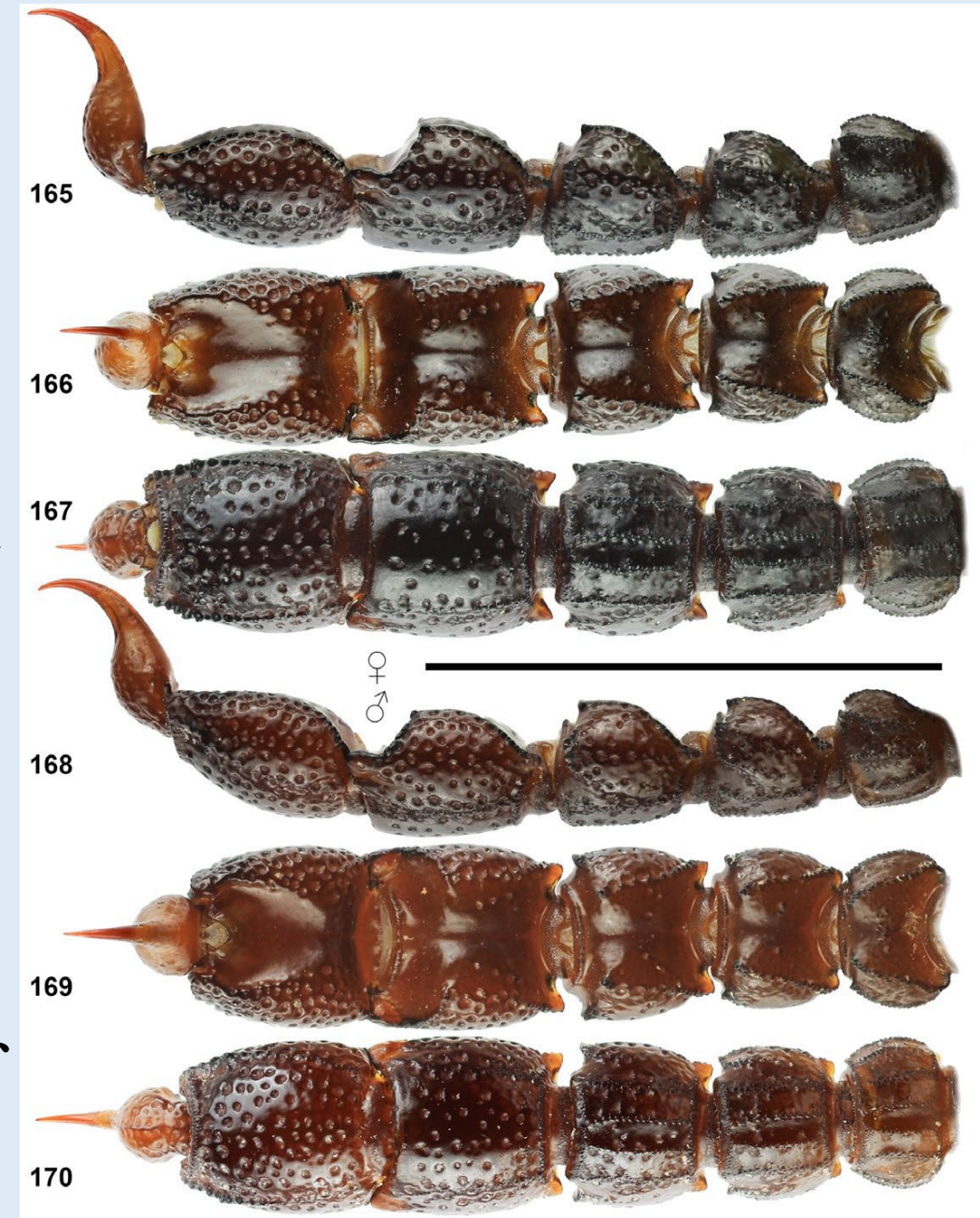
Currently, there are 42 species of *Orthochirus* in 10 Asian countries (Afghanistan, India, Iran, Iraq, Kazakhstan, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan).

Status of many Central Asian populations of *Orthochirus* is currently under revision.

Diversity of the genus in North Africa, Levant and the Arabian Peninsula requires further study.



In 2018-19, we had a chance to re-examine the collection of the great scorpialogist **Alexei A. BIRULA**, kept in Zoological Institute, St. Petersburg, Russia, including many type specimens. Historical sources and travelogues allow to identify localities and clarify confused toponyms for rare specimens collected in 1870s-1900s by many prominent zoologists, at the time when Russian Empire was actively involved in the “Great Game” and colonization of Central Asia.







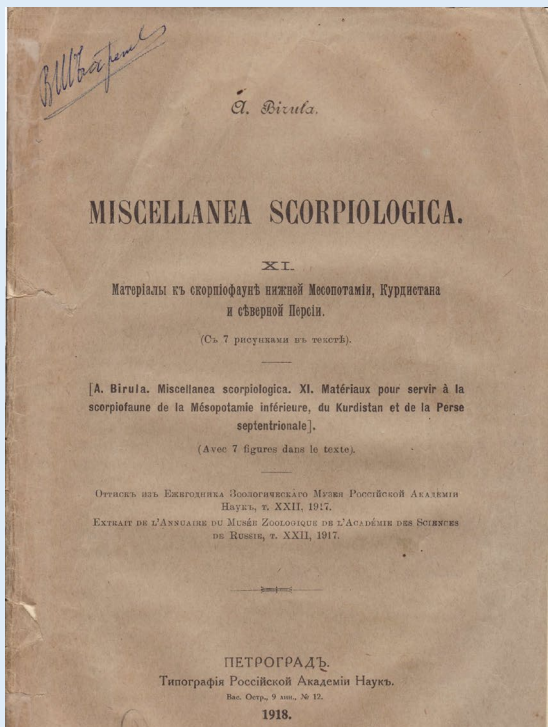
Alexei A. Byalynitskii-Birulya (or **A. A. Birula**) (1864–1937) was a famous Russian zoologist (specializing in scorpions and solpugids).

He survived a polar expedition of the Baron Eduard Toll (1902–1903), along with A. Kolchak, the future leader of the White Army.

Birula has worked for decades in the Imperial Zoological Museum at St. Petersburg, Russia (ZISP). He described 60 species and subspecies of scorpions (mostly Buthidae) in **1896–1928**, mainly from the Russian Empire and Iran.

Birula served as the Director of ZISP, to be dismissed and jailed by the Communist regime in 1931.

At age 70, after three years in a concentration camp, Birula was exiled to Kazakhstan. He died (or possibly was shot) on 18 July 1937 in Leningrad.



# ФАУНА РОССИИ

И СОПРЕДЕЛЬНЫХЪ СТРАНЪ,  
ПРЕИМУЩЕСТВЕННО ПО КОЛЛЕКЦИЯМЪ  
ЗООЛОГИЧЕСКАГО МУЗЕЯ РОССИЙСКОЙ АКАДЕМИИ НАУКЪ.

## ПАУКООБРАЗНЫЯ (*Arachnoidea*).

Томъ I.

Выпускъ I.

А. А. Бялыницкій-Бируля.

## FAUNE DE LA RUSSIE

ET DES PAYS LIMITOPHES  
FOUDÉE PRINCIPALEMENT SUR LES COLLECTIONS  
DU MUSÉE ZOOLOGIQUE DE L'ACADÉMIE DES SCIENCES DE RUSSIE.

## ARACHNIDÈS (*Arachnoidea*).

Volume I.

Livraison I.

Par A. A. Białyński-Birula.

ПЕТРОГРАДЪ. 1917. PETROGRAD.

Цена 3 руб.; Prix 3 rbl.

Birula, 1917



Birula was a Director of the  
Imperial Zoological Museum in St.  
Petersburg, Russia







*Orthokirus scrobiculosus*

(= *Buthoeus melanicus*) редка *Bizula*

Наземн. жив.

Перси

Листъ 1

№ входящего журн.	Число экз.			Полъ.	МѢСТО СБОРА.	Время сбора.	КОЛЛЕКТОРЪ.	Кто опредѣлялъ.	ОТМѢТКА.
	Сухр.	Сухихъ.	Мизр. преп.						
675. ✓	6 ад.			39-38	Сейстанъ; экск. по Нейзару	21-24 V 1896	Н. Зарудный	Ex. turica	в банке - 4 экз.
676. ✓	1			4 ад.	Сейстанъ: Тусейнъ - Абадъ	2 VI 1898	Н. Зарудный	A. Bizula	
677. ✓	2			6 ад.	Сейстанъ: развалины Коуздара	7 VI 1898	Н. Зарудный	"	
678. ✓	1			8, 10	Кирманъ: городъ Базмакъ.	5 VII 1898	Н. Зарудный	"	
	1				Кирманъ: Бирджанъ дер.				
679. ✓	5			12 ад. 48 ад.	Сейстанъ; ко даровъ мизр. Нейзаровъ и дер. Ами-абадъ	1-10 VI 1901	Н. Зарудный	"	
680. ✓	1			4 ад.	Бенедурейстанъ; пр. Сарбазъ дер. Сарбазъ	20 II 1901	Н. Зарудный	"	



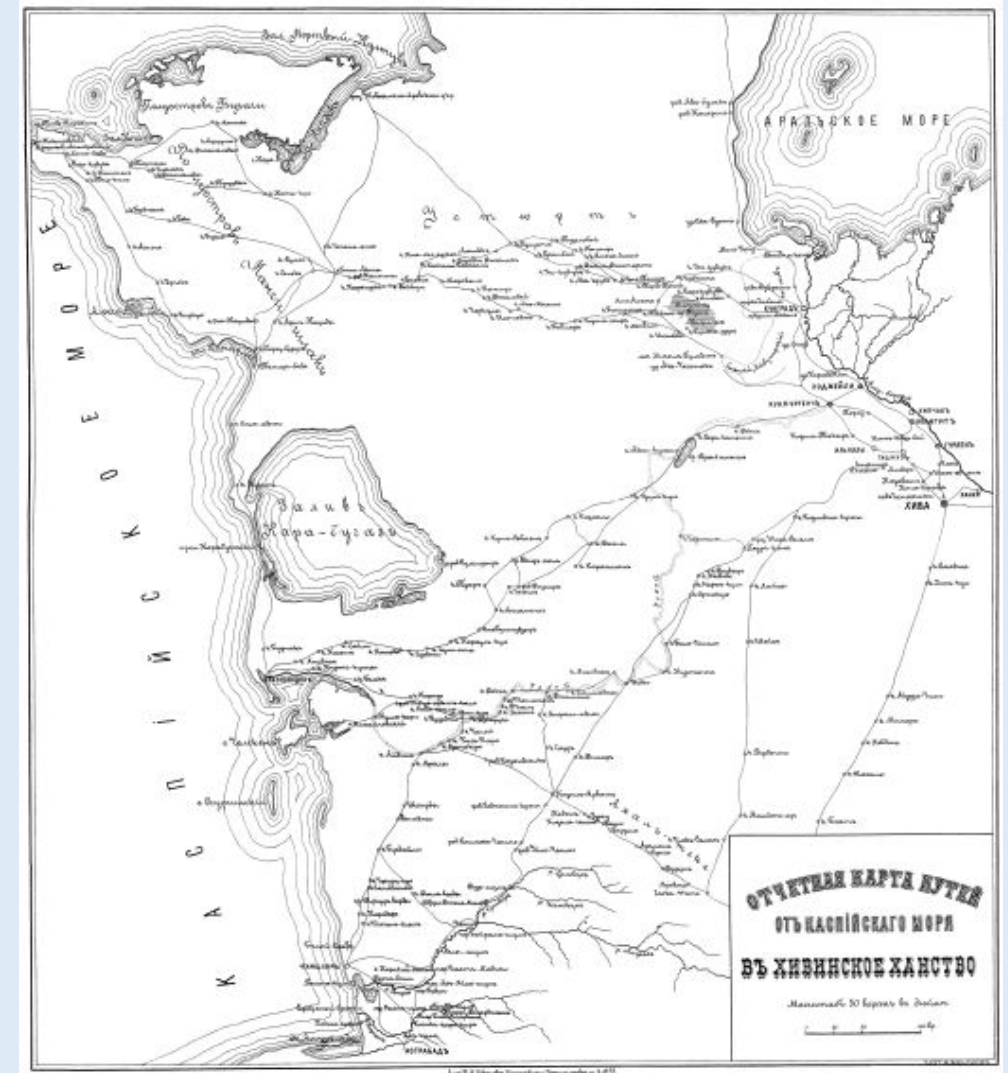
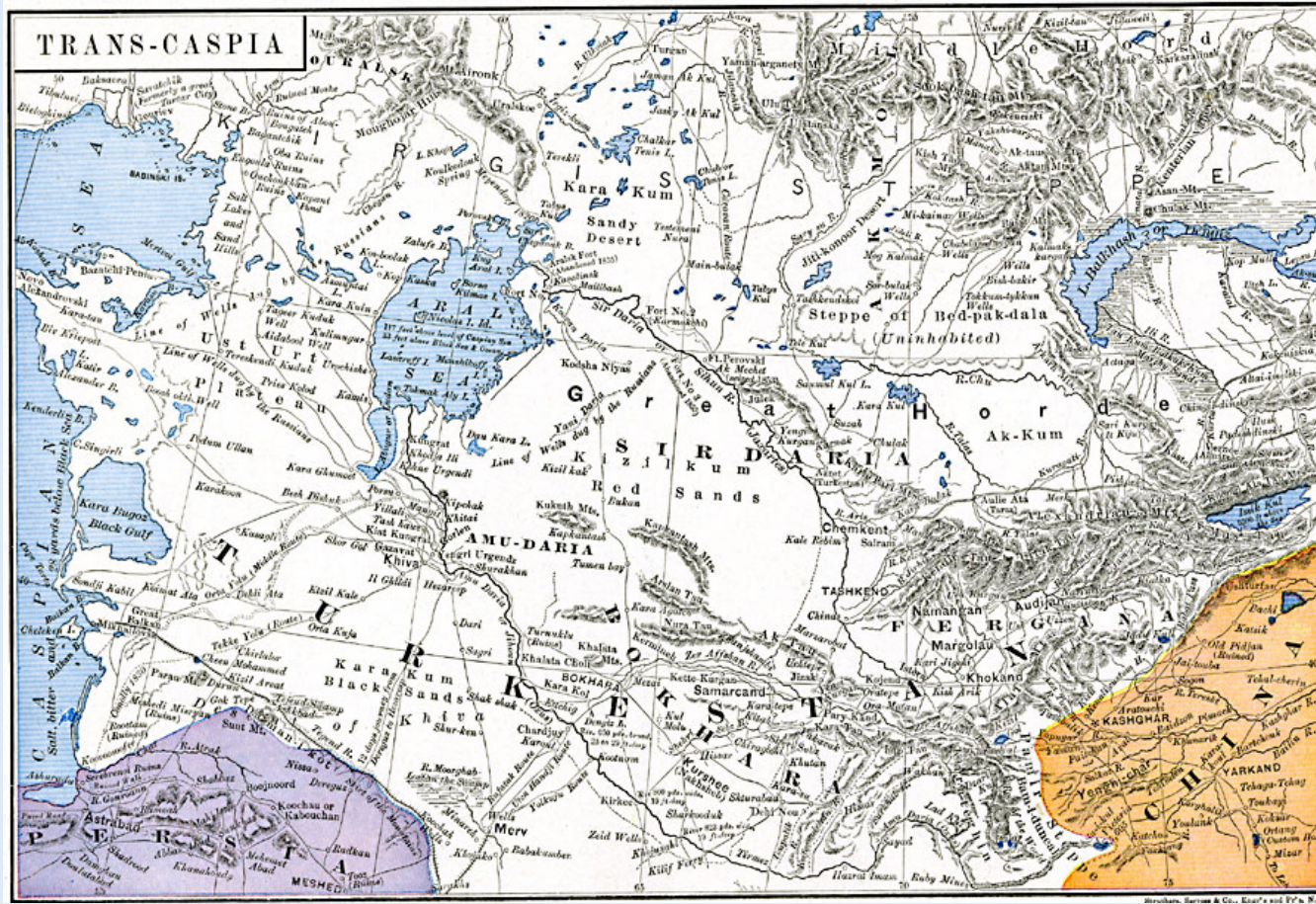
Distribution. USSR. Armenia: "all Armenia except of Leninakan Steppe and Pambak Valley" (Richter 1945); Adatapa (near Sevan Lake), 30.06.1902 (E. Elachich), 1 ♂, 1 ♀, 1 juv., ZIN - 212; Aigerlych (near Yerevan), 6.04.1936 (A. Richter), 1 ♂, 1 ♀, ZIN 1782; Akhty, 5.06.1936 (A. Richter and M. Ter-Minassian), 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; Terthyshnikov 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. Kock 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; 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;

## Fet (1989): a full list of all scorpion specimens from the former USSR in ZISP, St. Petersburg (Birula's collection)

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); 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



# 1870-1880s: the last colonial wars of the Russian Empire (‘the Great Game’)







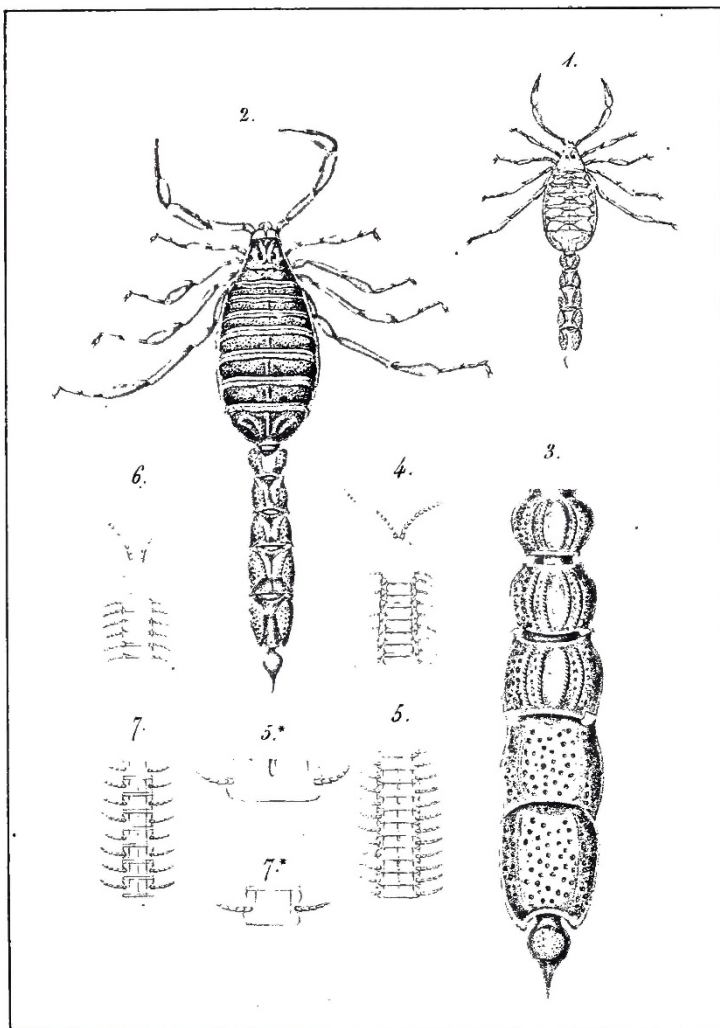
M.N. Bogdanov

## **Modest N. BOGDANOV**

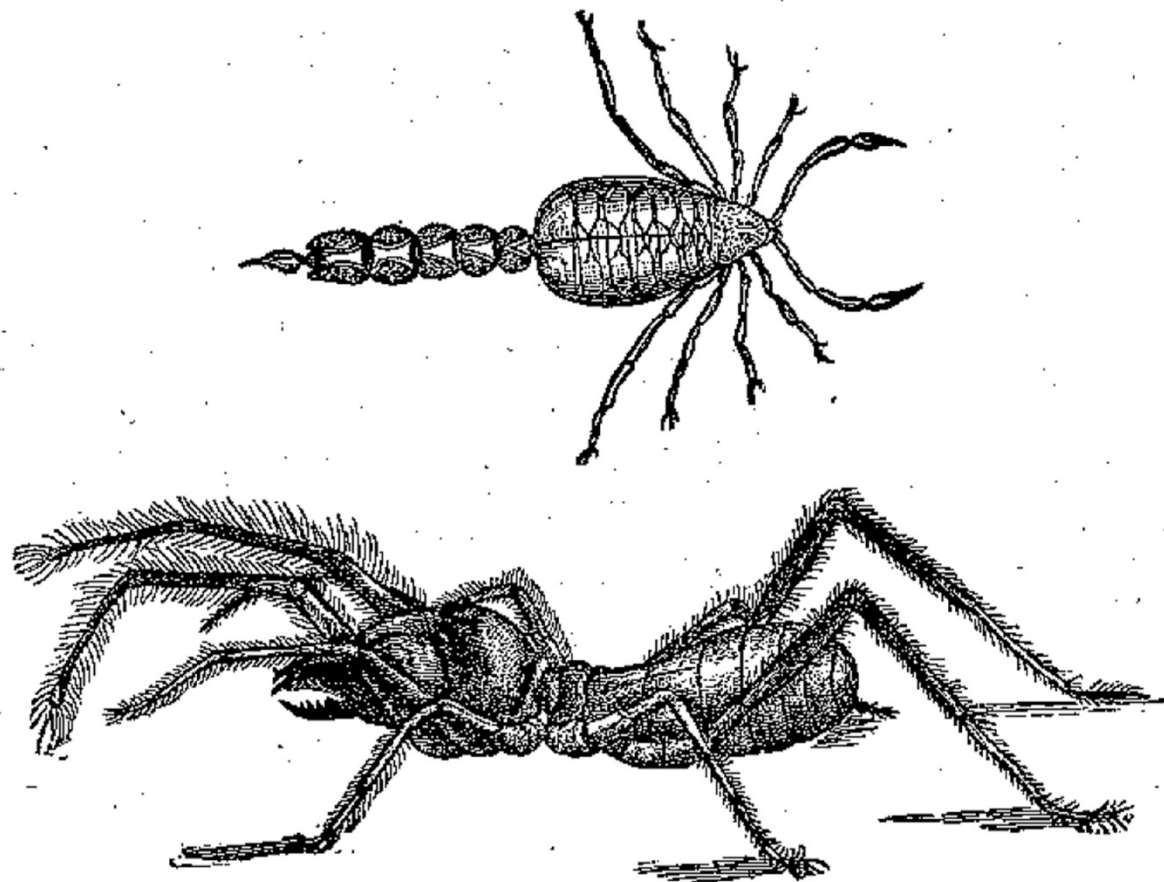
**(1841 – 1888)**

**Accompanied Russian imperial troops  
annexing the Khanate of Khiva  
(now in NW Uzbekistan)**





**Kessler, 1874**



Скорпионъ и фаланга.

**Bogdanov, 1882**



# *Orthochirus melanurus* (Kessler, 1874) (Kazakhstan, Uzbekistan)



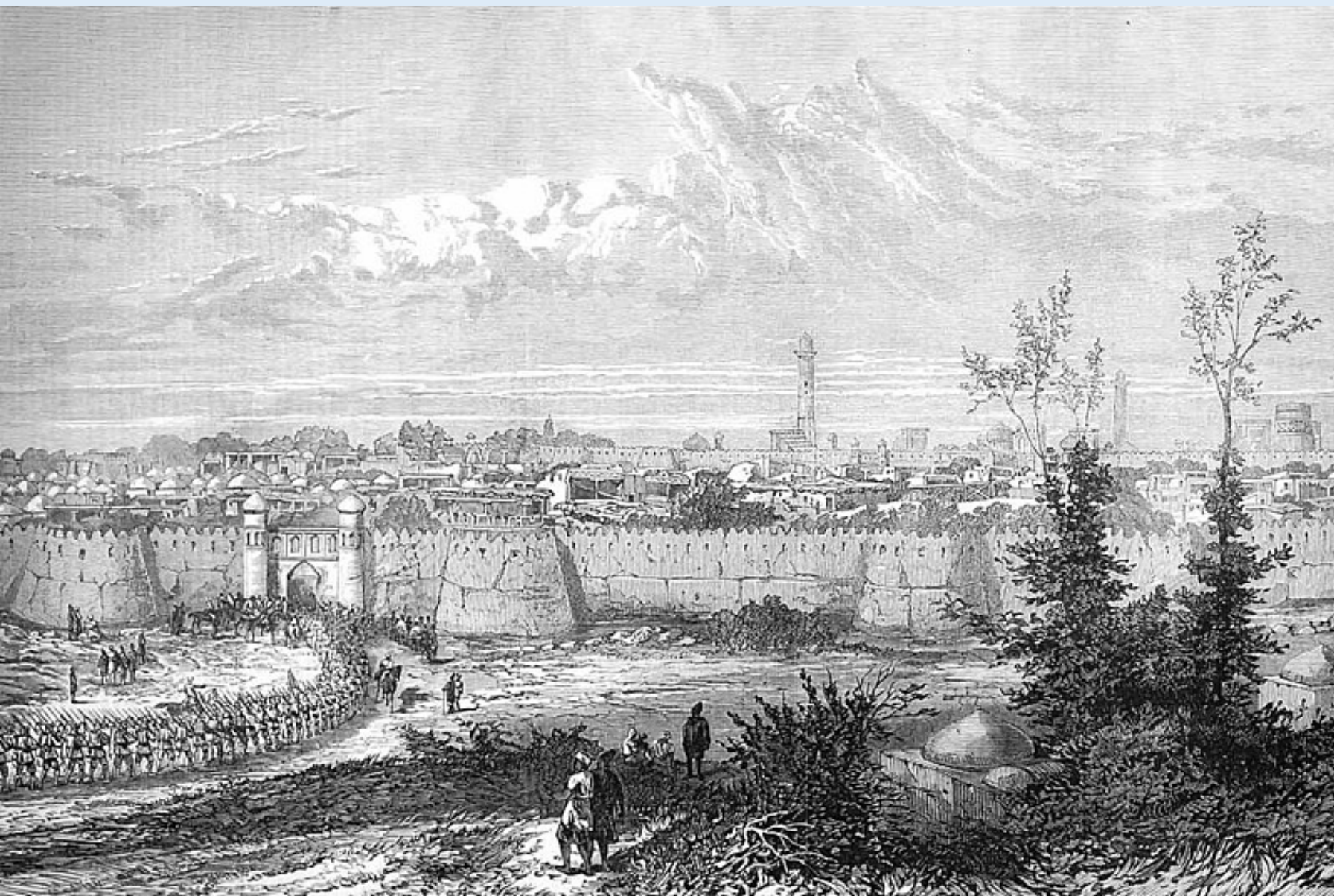
Зоол. Муз. АН  
№ 106-1905.

665. *Orthochirus serobiculosus melanurus* (Kessler).  
Опр. А. Барудин. 7 juv.  
Сбор Сыр-Дарьинск. обл.,  
Джукун. 4. V. 1905.  
Ю. Текман.

Зоол. Муз. АН  
№ 179-1907.

666. *Orthochirus serobiculosus melanurus* (Kessler).  
Опр. А. Барудин. juv.  
Сбор Сыр-Дарьинск. обл.,  
колодез Налбан - Кудук.  
(пески на 20 в. к ю-з).  
20. VII. 1907. Н. Барудин.





**Russian Imperial  
troops enter the  
Khiva oasis (1873)**

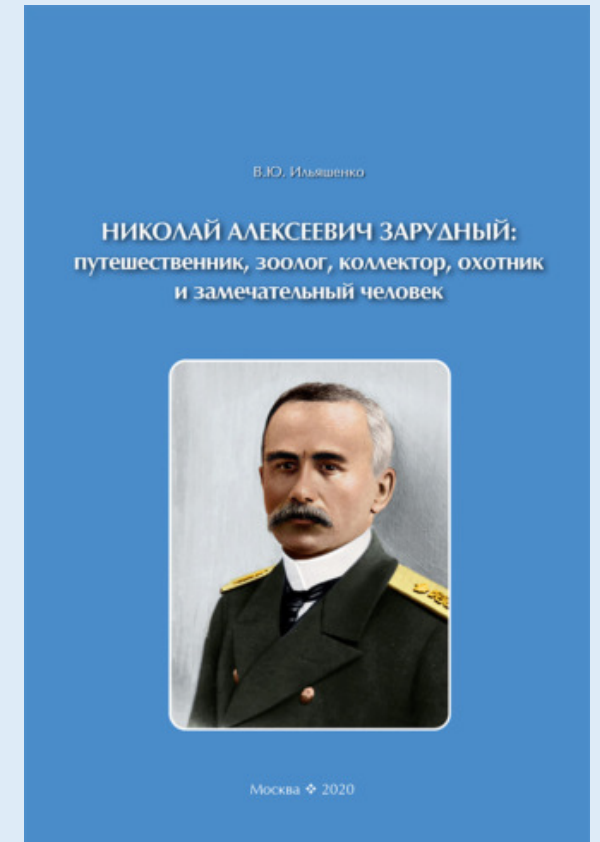
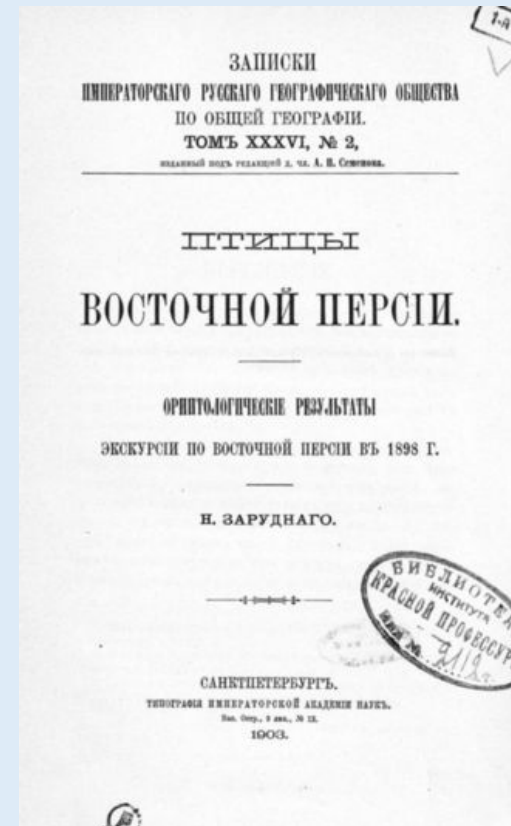




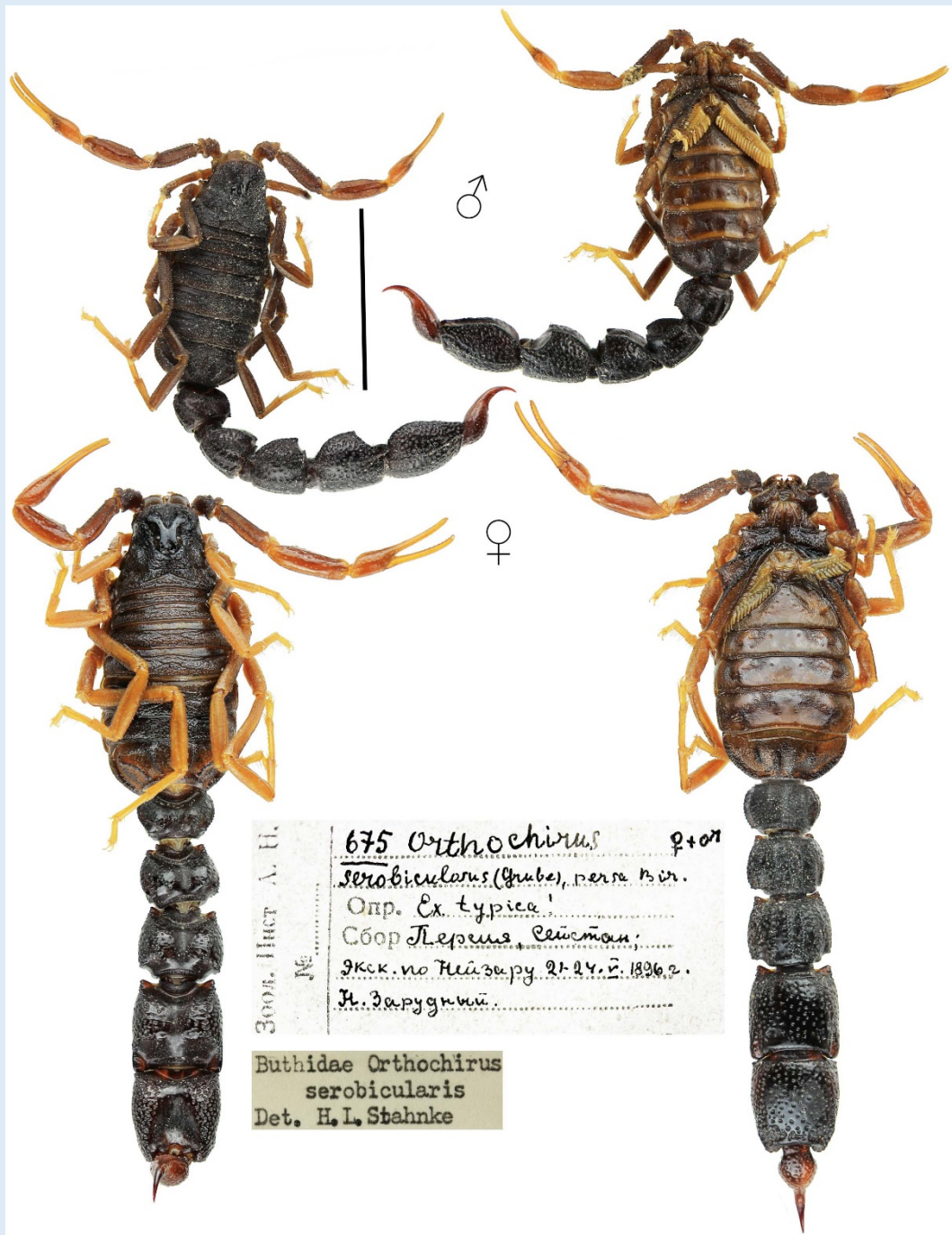


## Nikolai A. ZARUDNY

(1859 – 1919), a famous Russian zoologist who in 1894-1904 traveled in southern Persia (now Iran)



# *Orthochirus persa* (Birula, 1900) (SE Iran)



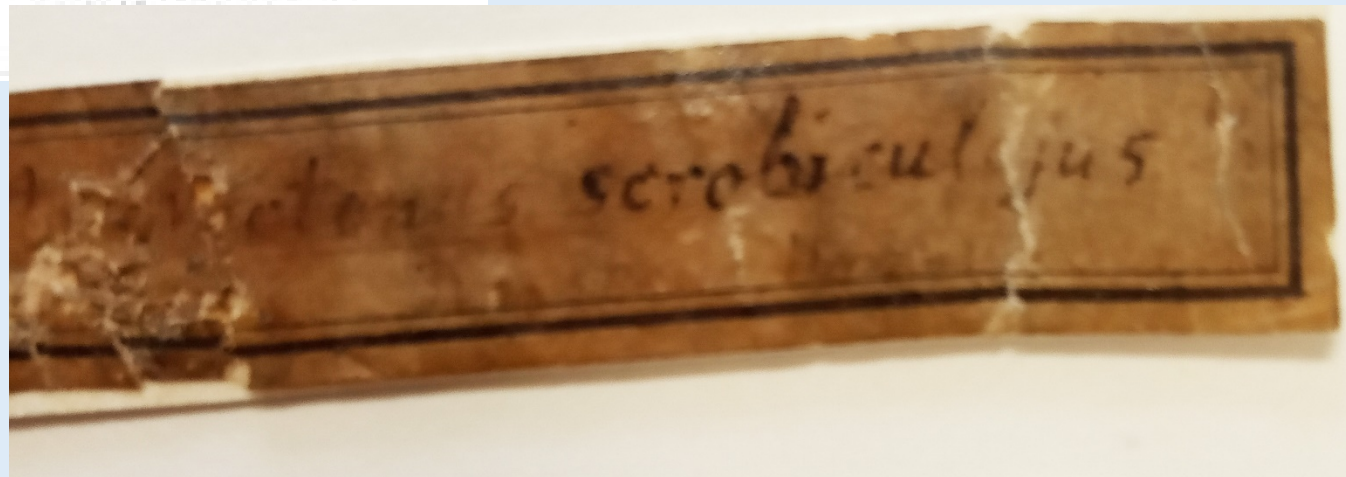




Adolph Grube

# *Orthochirus scrobiculosus* (Grube, 1873) (Turkmenistan)

**Adolph Eduard GRUBE** (1812-1880),  
Professor of Zoology at  
the Universität Breslau  
(now the University of  
Wrocław, Poland).

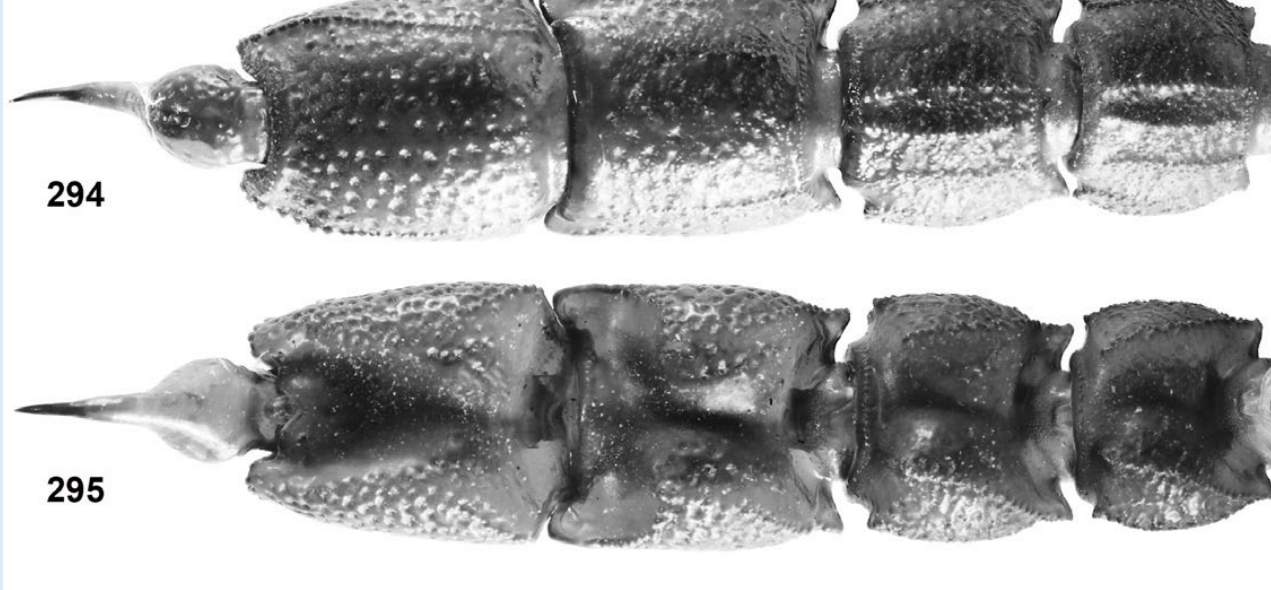


**Muzeum Przyrodnicze Uniwersytetu  
Wrocławskiego 6t**

**Scorpiones**  
**Androctonus scrobiculosus**  
Grube, 1873

**Sntyp?**  
Lenkoan, Transcaucasia  
(Azerbeydzhan). leg. Radde  
Nr. 531

In der Sitzung vom 17. Januar berichtete Herr Professor Grube über eine Zusendung transkaukasischer Arachniden und Myriopoden von Herrn Dr. Radde, von denen er die Scorpione und Geophilen hervorhob, da sich unter ihnen einige noch nicht beschriebene Arten befinden. Dies gilt zunächst von einem Scorpion, der seinem ganzen Habitus nach zu den Androctonen gehört, obschon sich mit Sicherheit nur 4 Augen jederseits unterscheiden liessen (*A. scrobiculosus*). Er muss in die Gruppe der Prionuren gestellt werden und ähnelt am meisten dem *A. bicolor* Ehrbg., der ebenfalls in jener Sendung vertreten ist. Letzterer ist ganz schwarz, wie ihn Lucas abbildet, oder hat blos gelbe Tarsen und Scherenfinger, wie Ehrenberg angiebt. Die neue Art ist an der Oberseite dunkellauchgrün, unten schmutziggelblich grün und hat blassgelbe Beine und Pulpen, auf diese Verschiedenheit der Färbung und auf die geringere Grösse — denn kein Exemplar misst über 1 1/4 Zoll — wäre vielleicht kein grösseres Gewicht zu legen, es könnte der jüngere *A. bicolor* auch lichter gefärbt sein, allein die Sculptur des Schwanzes ist eine ganz andere. Alle Segmente desselben sind an den Seiten der Unterfläche von gleichmässigen Grübchen erfüllt, bei *bicolor* glatt und nur mit einigen Körnchen überstreut, auch Ehrenberg gedenkt keiner Grübchen. Die Bauchseite der 3 ersten Segmente zeigt 4 schwache Längskiele von winzigen Körnchen, das 4. und 5. nur 2, nämlich die äusseren, die Kante selbst bildenden, bei *A. bicolor* hat das 5. Segment 3, alle übrigen 4 solche Kiele und der Stachel selbst ist an der Unterseite mit 3 Längskielen und 2 dazwischen befindlichen Rinnen versehen, bei *A. scrobiculosus* dagegen ganz glatt. Auf dem Rücken der Abdominalsegmente machen sich bei *A. bicolor* 3 Längskiele bemerkbar, bei *scrobiculosus* nur 1, auch sind hier die Seitenwände



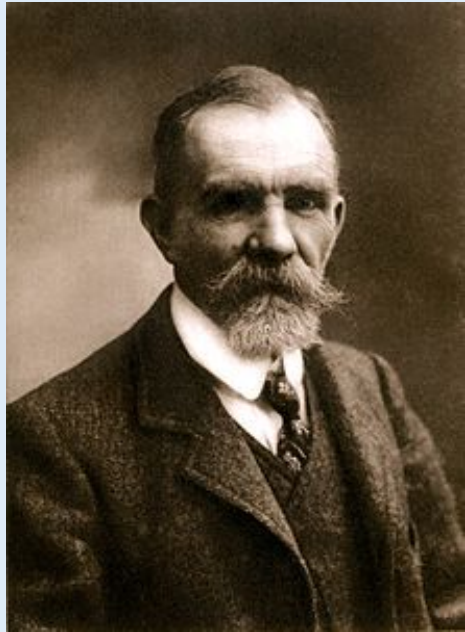
The convoluted story of **Grube's single specimen**, which survived two world wars, is nothing short of amazing. It personifies 150 years of zoological research in Central Asia done by many enthusiastic naturalists of diverse backgrounds. Adolph Grube was a German zoologist at the Universität Breslau (then in Silesia, Germany; now Museum of Natural History Wrocław). This is the only scorpion described by Grube who worked on various animal groups, mainly on Polychaeta, and was one of the early explorers of the Adriatic Sea.



Grube obtained a small collection of “**mostly Caucasian**” arthropods from **Gustav RADDE** (1831–1903), a famous Russian naturalist and geographer of German extraction who in 1865 founded the Caucasian Museum in Tiflis (now Tbilisi, Georgia). Grube mentioned that his new species was found in “**Lenkoran**, at the altitude of 4000 feet” This was an obvious error; Lenkoran is an area in the southeastern Russian **Transcaucasia (now Azerbaijan)**, and there are no *Orthochirus* species in Transcaucasia. ...The true locality was Krasnovodsk (now Türkmenbashi, Turkmenistan), the most important port on the **southeastern shore** of the Caspian Sea, founded in **1869** as the Russian Empire began its annexation of the Transcaspiian Region, now Turkmenistan.



**Gustav Radde**  
(1831–1903)



**Simon, 1889: The first paper specifically devoted to the arachnids of Transcaspia (now Turkmenistan)**

Simon studied collections of the 1886–1887 expedition led by the same Dr. **Gustav Radde** of the Caucasian Museum who supplied Grube's specimen from Krasnovodsk collected in 1870. A detailed report was published (Radde, 1886). Simon (1889) described *Butheolus conchini*, collected at “Bely-Bugor” (Russ. ‘White Hill’) on **27 April 1886** by the geologist **Afanasy M. Konshin** (1854–after 1919), one of the early oil prospectors in the Caucasus and Transcaspia.

‘White Hill’ refers to a sandy hill overlooking the Caspian Sea that served as a **landmark for ship pilots**, not far from the Iranian border.





## Acknowledgements

We thank **Viktor A. Krivokhatsky, Alexander Koval, Julia V. Samartseva, Sergey Yu. Sinev**, and other employees of the Zoological Institute, Russian Academy of Sciences, **St. Petersburg, Russia**, for their hospitality and help to F.K. and E.A.Y. in 2018–2019 while studying and imaging the wonderful Birula's scorpion collection.

We sincerely thank **Jolanta Jurkowska**, who located and loaned the lectotype of *Orthochirus scrobiculosus* from the Museum of Natural History **Wrocław, Poland**, in 2020. We also thank **Jason Dunlop** for the loan of Karsch's type of *O. olivaceus* from ZMB (**Berlin**).

V. F. especially thanks **Petra Sierwald** for providing a copy of Bogdanov (1882) found in the Field Museum (**Chicago, USA**) library.

We are grateful to all scientists, collectors and professionals from many countries who generously provided specimens for our studies.

**Thank you!**