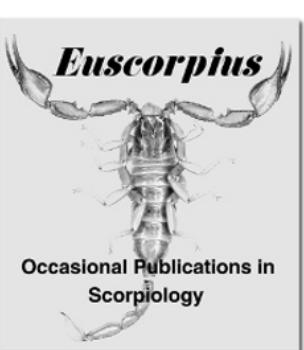




Euscorpius journal is the first and only research publication completely devoted to scorpions (Arachnida: Scorpiones).

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

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

František Kovařík¹,
Victor Fet² &
Ersen Aydin Yağmur³

¹ Praha, Czech Republic

² Marshall University, Huntington, West Virginia, USA

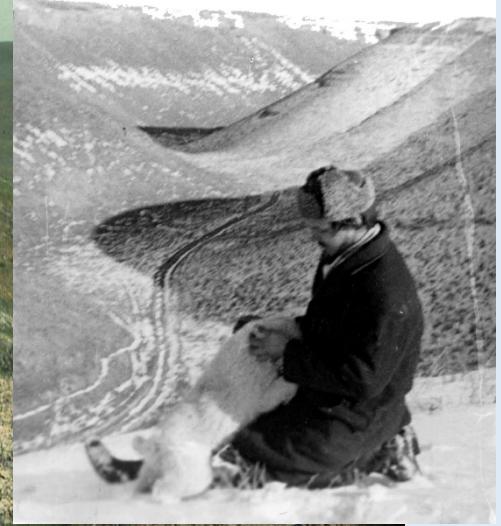
³ Celal Bayar University, Alaşehir, Manisa, Turkey

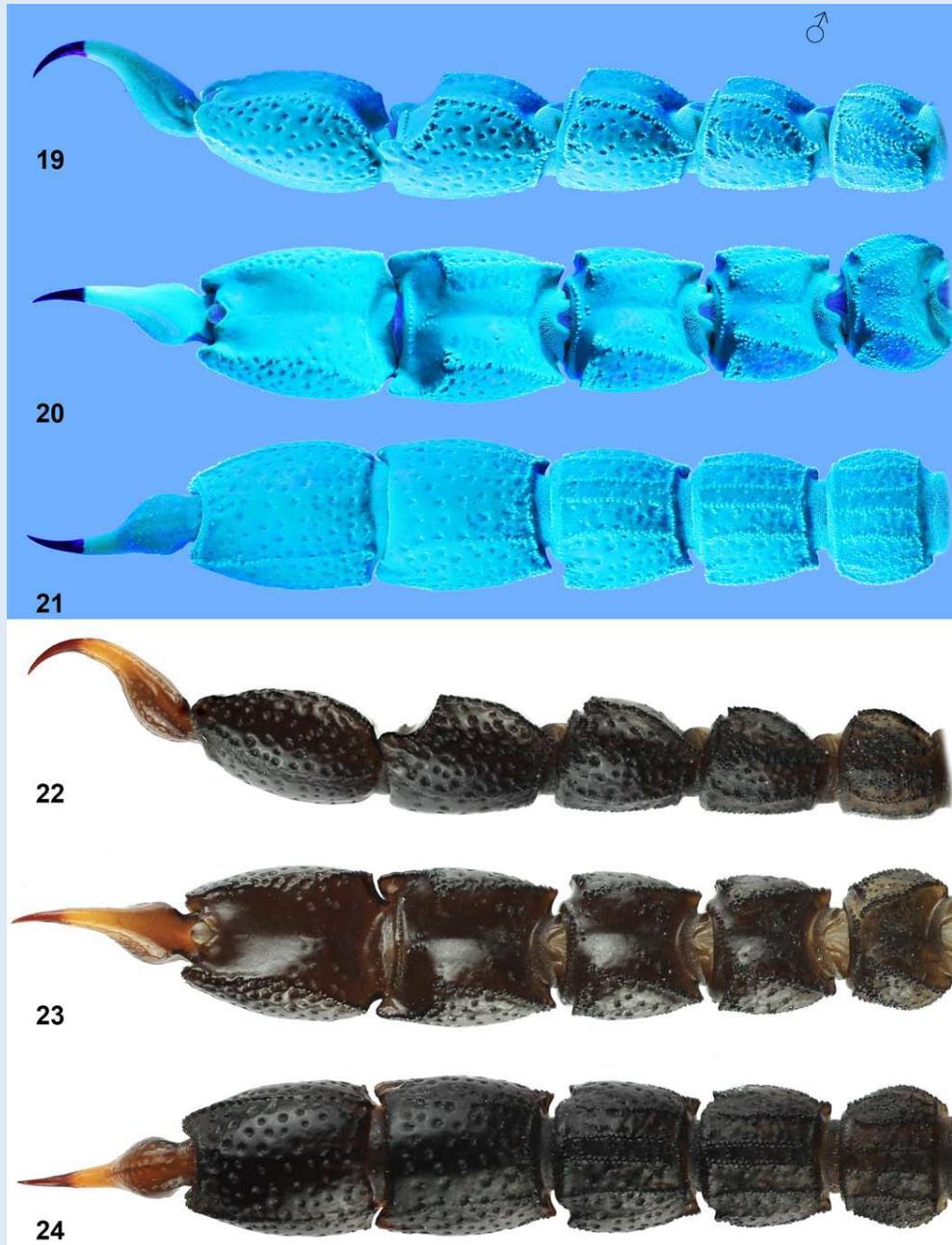


Family BUTHIDAE
**Genus *Orthochirus* Karsch, 1892 (deserts:
North Africa, Middle East, Central Asia)**

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**.

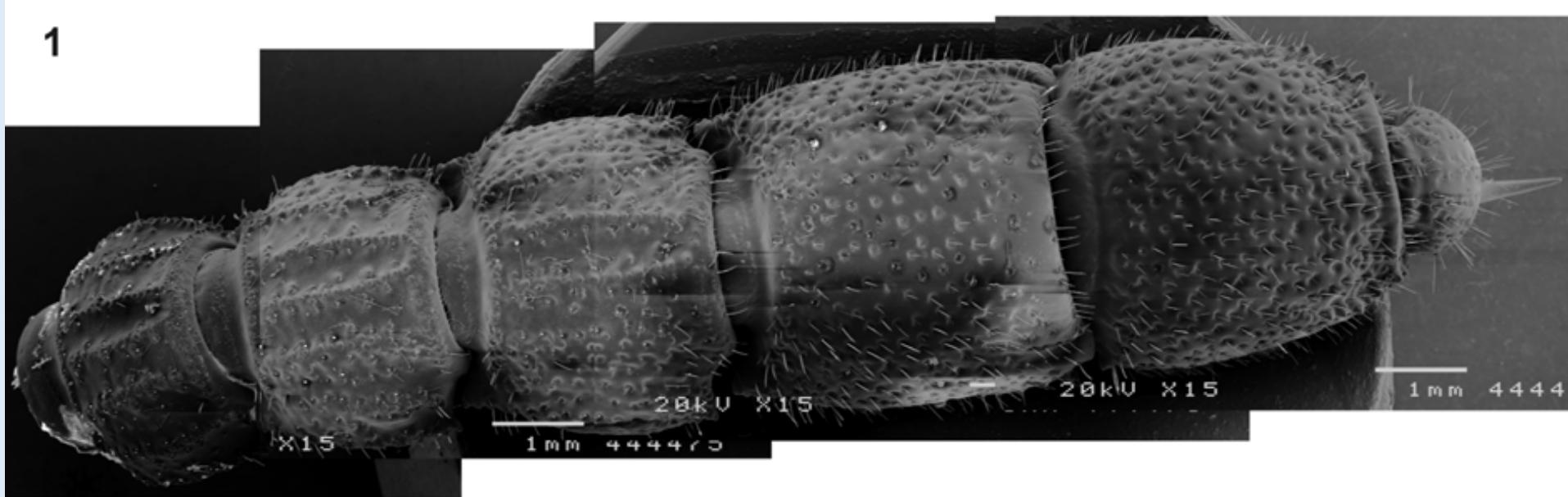
*To the memory of
Viktor Krivokhatsky (1954-2021),
arachnology curator
in Zool. Institute, St. Petersburg,
Russia, an expert on ant-lions*



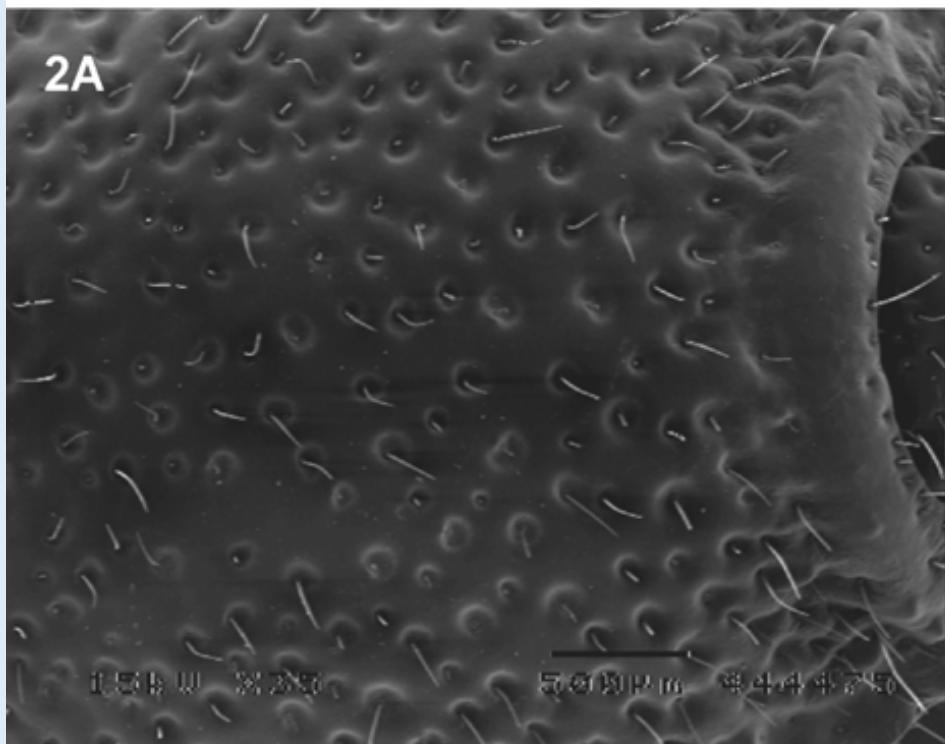


A highly modified metasoma (“tail”) with a foldable telson (“stinger”) and amazing, dense (up to 1,000) ventral punctations (“pits”) housing chemosensory sensillae.

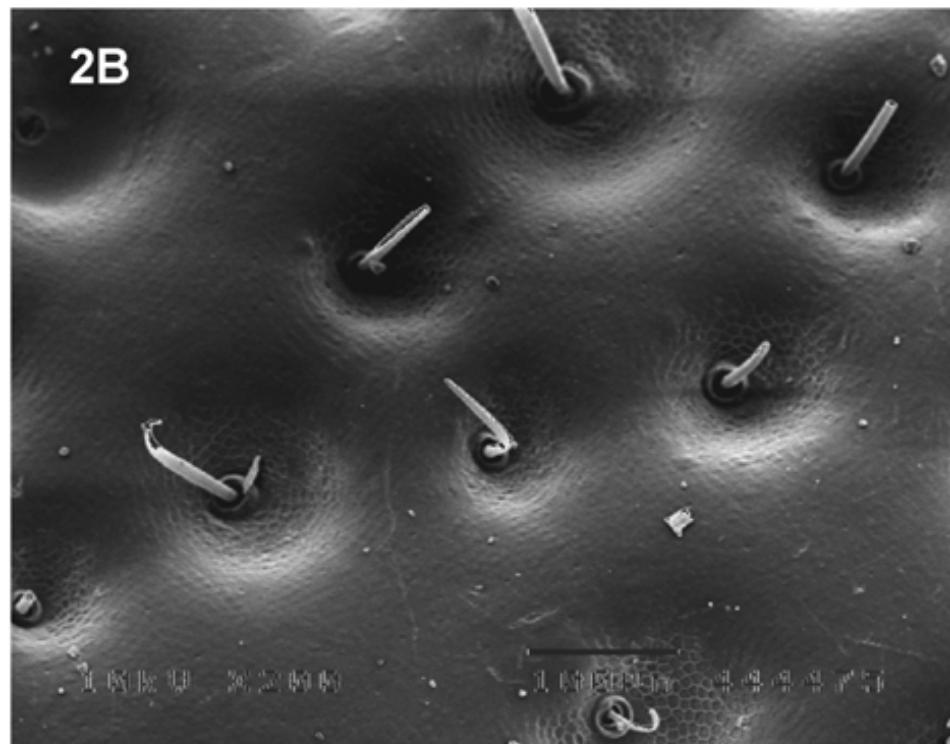
1

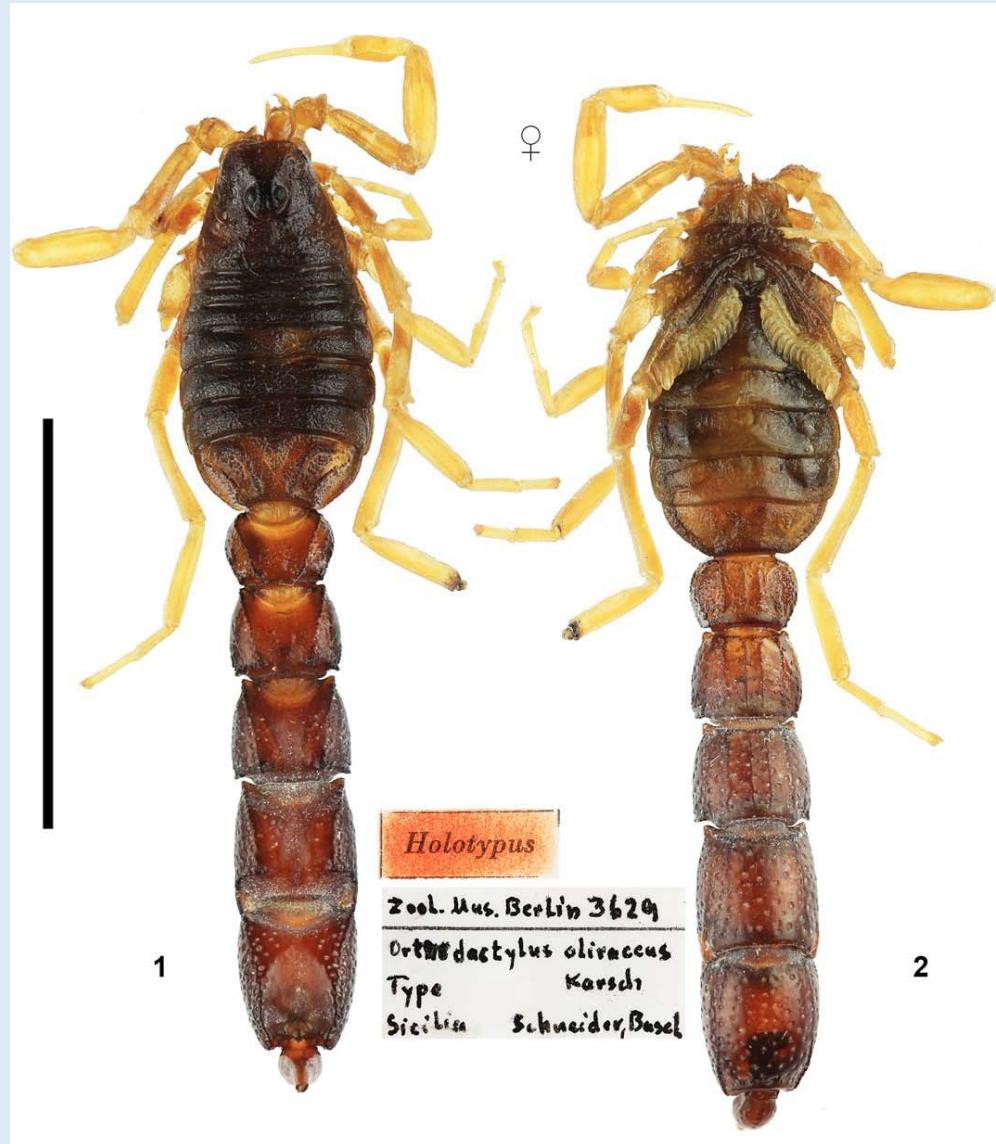


2A

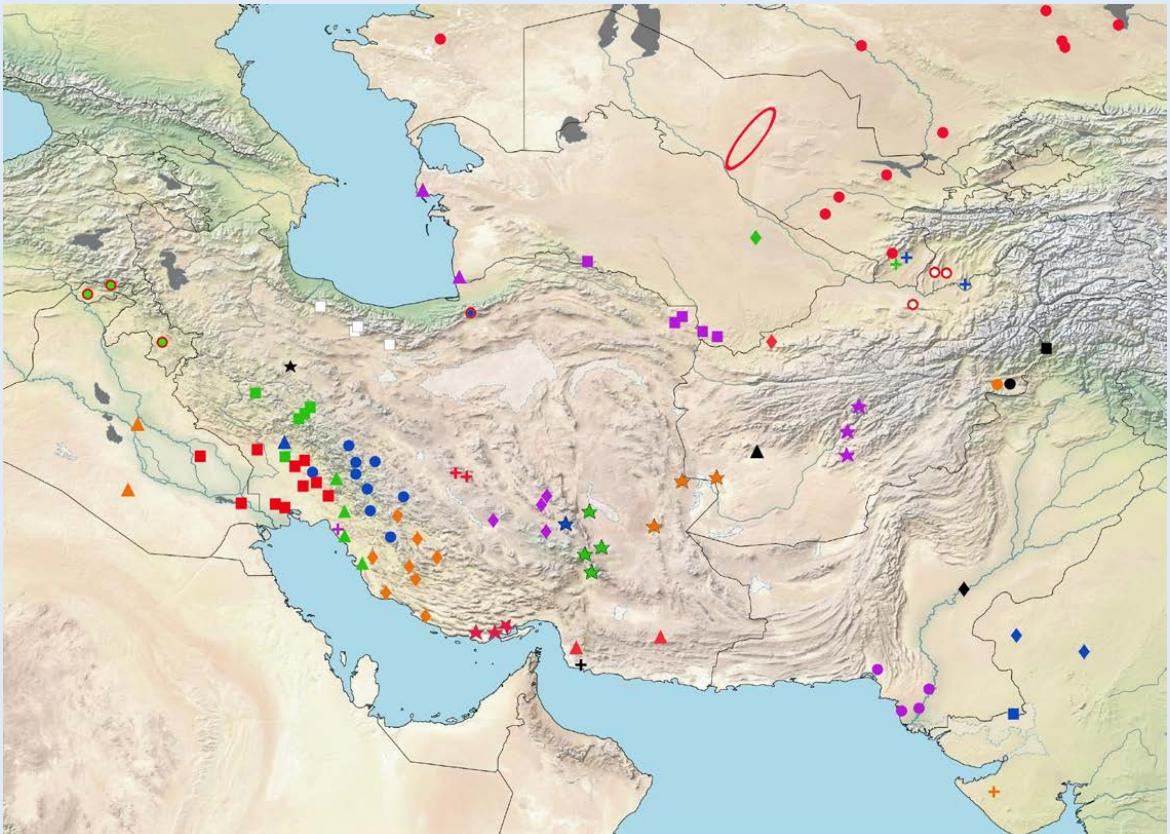


2B





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



- *O. afghanus* Kovařík, 2004
- *O. bastawadei* Zambre et al., 2011
- *O. bicolor* (Pocock, 1897)
- *O. birulai* sp. n.
- *O. carinatus* Navidpour et al., 2019
- ▲ *O. danieliae* (Lourenço & Vachon, 1997)
- ◆ *O. farzanpayi* (Vachon & Farzanpay, 1987)
- + *O. feti* Kovařík, 2004
- △ *O. flavescentis* (Pocock, 1897)
- *O. fomichevi* Kovařík et al., 2019
- *O. formozovi* sp. n.
- *O. fuscipes* (Pocock, 1900)
- ▲ *O. gantenebeini* Kovařík et al., 2019
- ◆ *O. gromovi* Kovařík, 2004
- + *O. grosseri* sp. n.
- ★ *O. gruberi* Kovařík & Fet, 2006
- ◆ *O. heratensis* Kovařík, 2004
- + *O. hormozganensis* Kovařík & Navidpour, 2020
- ▲ *O. iranensis* Kovařík, 2004
- ▲ *O. iraqus* Kovařík, 2004
- *O. jalalabadensis* Kovařík, 2004

- ♦ *O. kermanensis* Kovařík & Navidpour, 2020
- ◆ *O. Krishnai* Tikader & Bastawade, 1983
- *O. kryzhanovskyi* sp. n.
- ★ *O. kucerae* Kovařík & Navidpour, 2020
- + *O. mashipouri* Kovařík & Navidpour, 2020
- *O. melanurus* (Kessler, 1874)
- *O. mesopotamicus* Birula, 1918
- ◆ *O. monodi* (Lourenço & Vachon, 1997)
- *O. navidpouri* Kovařík et al., 2019
- ★ *O. nordmanni* sp. n.
- ◆ *O. pallidus* (Pocock, 1897)
- ★ *O. persa* (Birula, 1900)
- *O. samchelsis* Kovařík, 2004
- ▲ *O. scrobiculosus* (Grube, 1873)
- ★ *O. sejnai* sp. n.
- *O. semnanensis* Kovařík & Navidpour, 2020
- ★ *O. stockwelli* (Lourenço & Vachon, 1995)
- *O. sulakhei* sp. n.
- ▲ *O. varius* Kovařík, 2004
- + *O. vignolii* Kovařík & Navidpour, 2020
- *O. zagrosensis* Kovařík, 2004

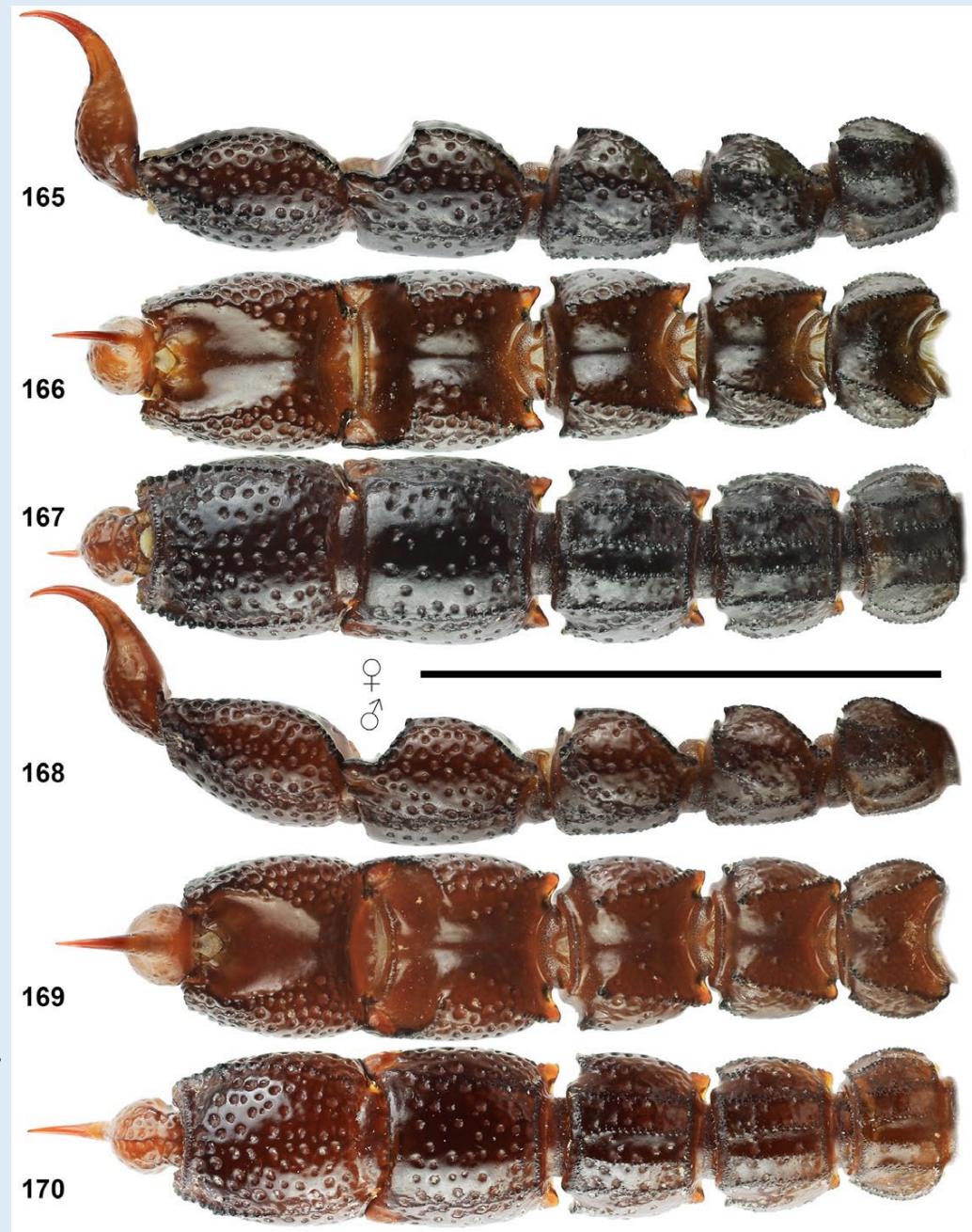
Currently, there are 42 species of *Orthochirus* in 10 Asian countries (Afghanistan, India, Iran, Iraq, Kazakhstan, Pakistan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan).

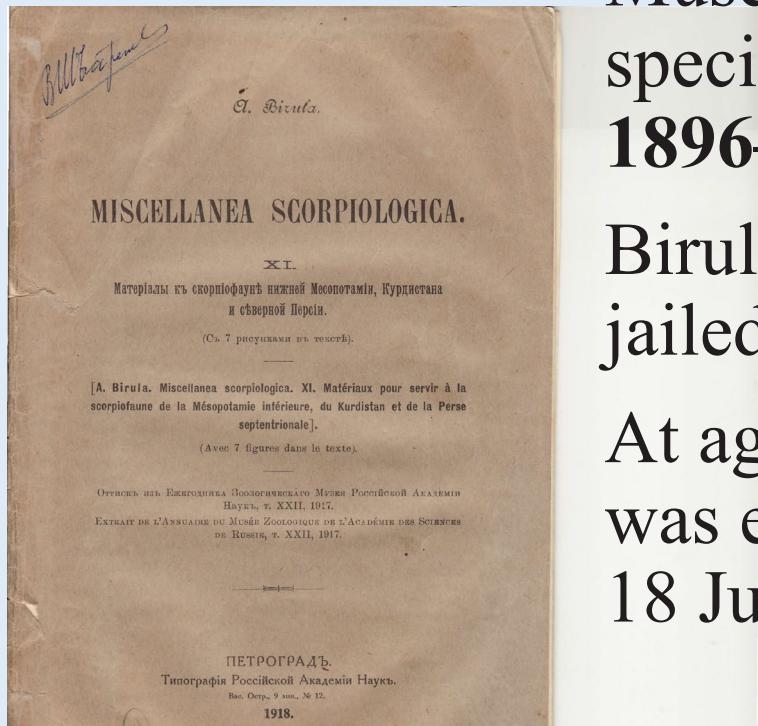
Status of many Central Asian populations of *Orthochirus* is currently under revision.

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 scorpionsologist **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 сопредѣльныхъ странъ,

примѣщенно по коллекціямъ

зоологическаго музея россійской академіи наукъ.

ПАУКООБРАЗНЫЙ

(*Arachnoidea*).

Томъ I.

Выпукъ 1.

А. А. Бялыницкій-Бируля.

FAUNE DE LA RUSSIE

ET DES PAYS LIMITROPHES

FONDÉE PRINCIPALEMENT SUR LES COLLECTIONS

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

ARACHNIDES

(*Arachnoidea*).

Volume I.

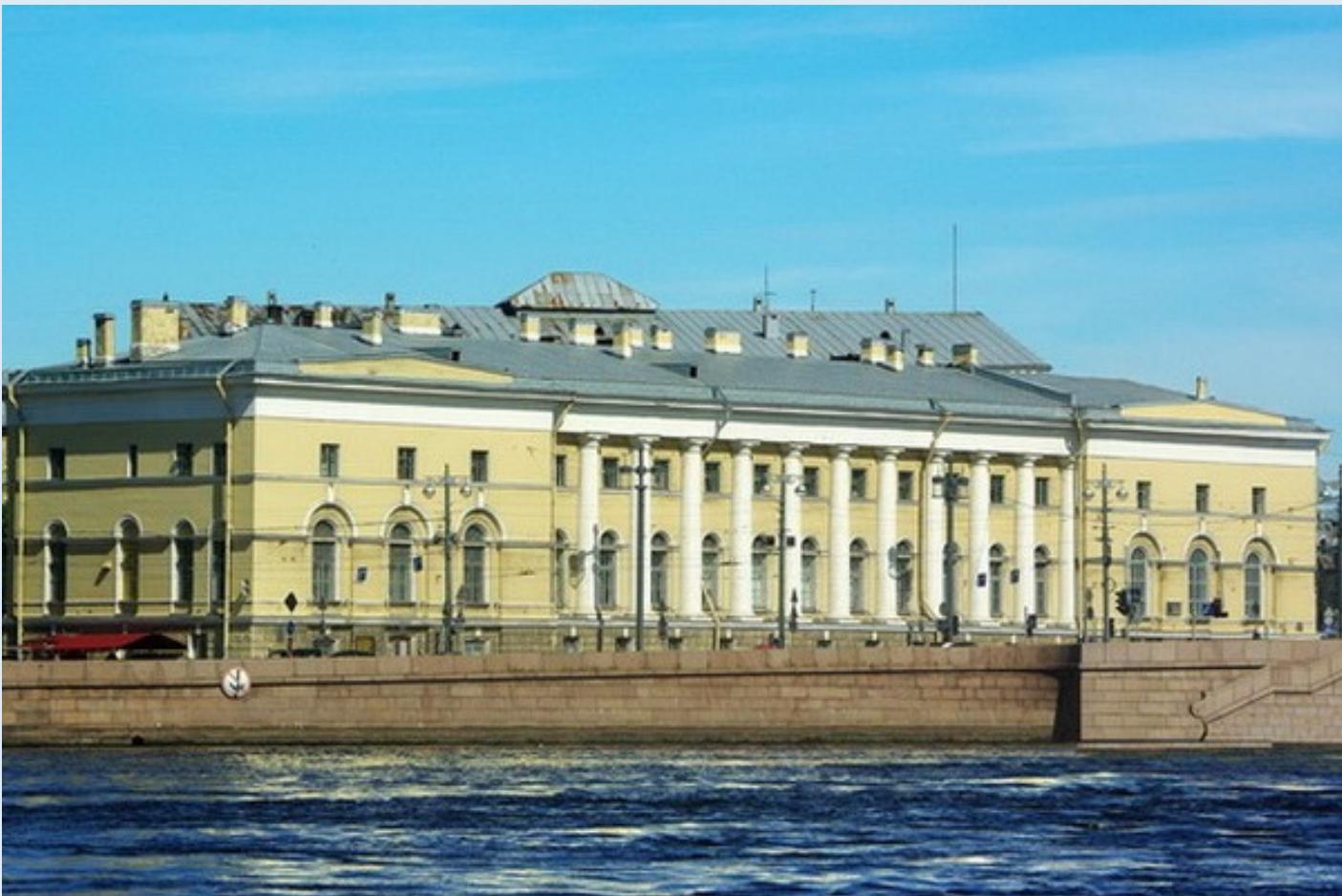
Livraison 1.

Par A. A. Białyńieki-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**



1

Ottochirus scrobiculatus
 (= *Buthoelus melanurus*) перва Kizula

Наземн. жив.
 Народ
 Листъ 1

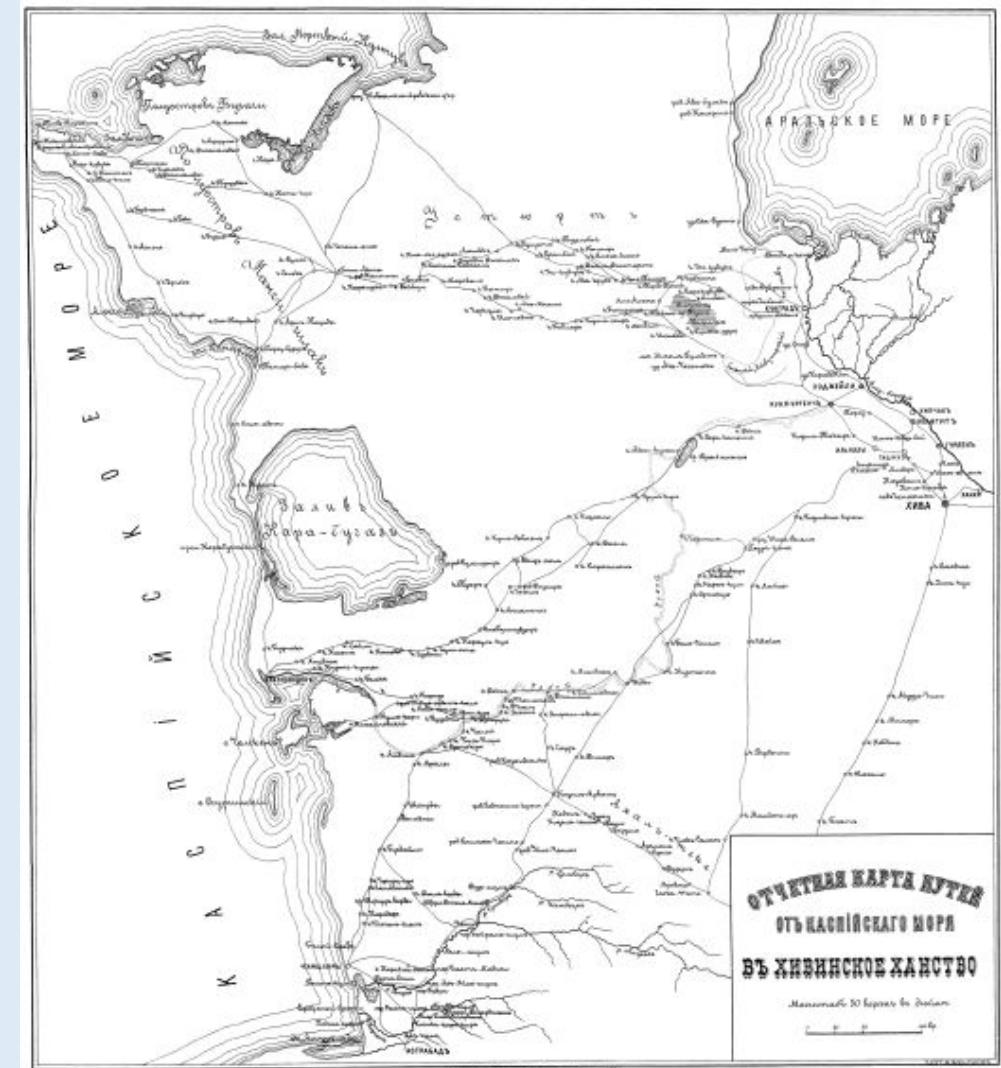
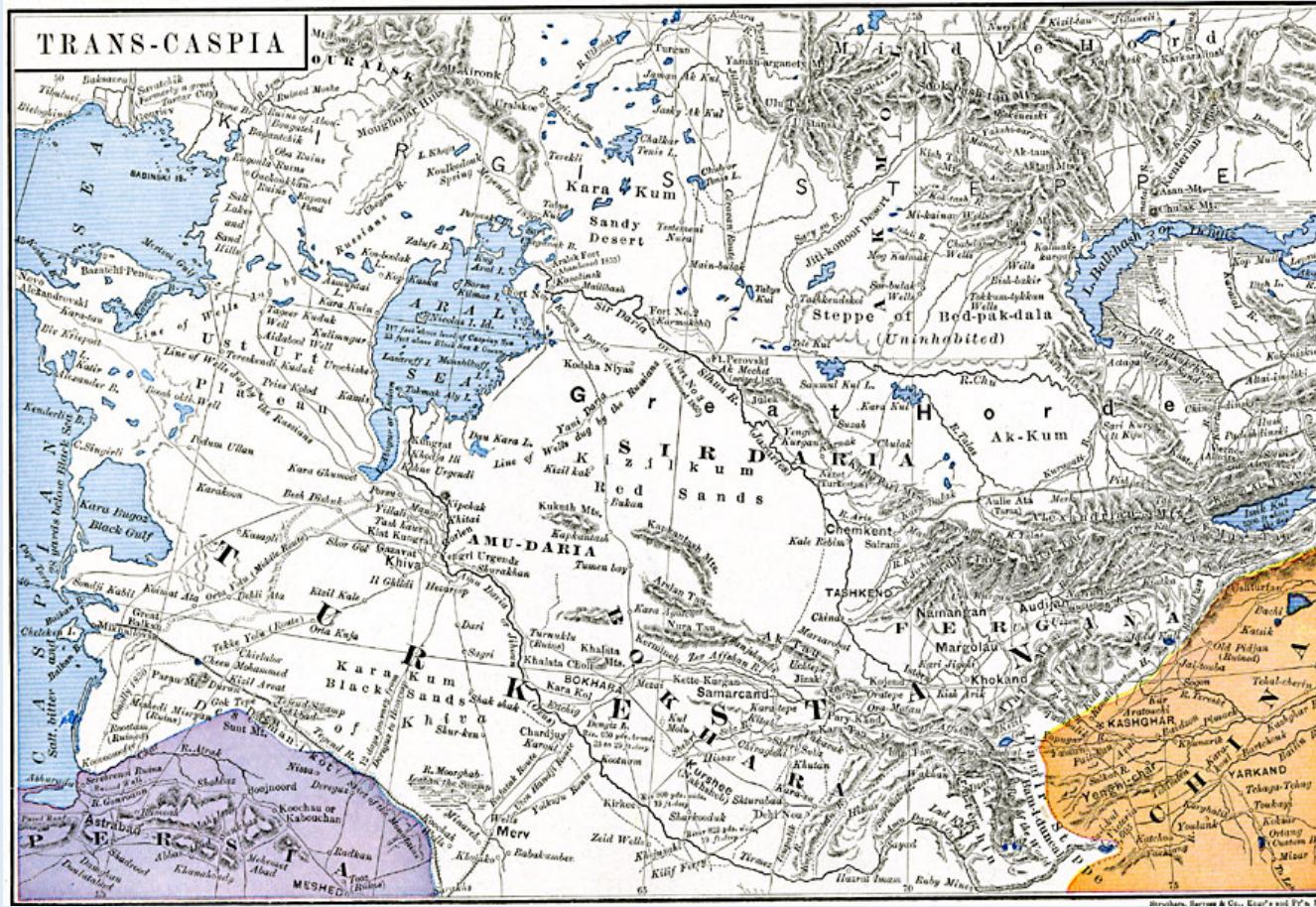
№ входящаго журн.	Число экз.			Полъ.	МѢСТО СБОРА.	Время сбора.	КОЛЛЕКТОРЪ.	Кто опредѣлялъ.	ОТМѢТКА.
	Спирт.	Сухихъ.	Мнѣр. преп.						
675. ✓ 6 ad.	39+32	Семистакъ; зкск. №			24-24	1896	Н. Зарудный	Ex. турецк!	в сане - 4 мес
		Низдару							
676. 18-1899 ✓ 1	6 ad.	Семистакъ; Гусейновъ	2 vi		Н. Зарудный	A. Birula			
		- Адачъ	1898						
677. 18-1899 ✓ 1	6 ad.	Семистакъ; развалы	7 vi		Н. Зарудный	"			
		Хозздора	1898						
678. 18-1899 ✓ 1	6 jn.	Кирманъ; городъ базаръ	5 viii		Н. Зарудный	"			
		матъ.	1898						
	1	Кирманъ; Сардазъ							
		dep. 1							
679. 191-1901 ✓ 5	19 ad.	Семистакъ; ходородъ	1-10		Н. Зарудный	"			
		48 ad.	VI 1901						
		Низдаровъ и деп. Адачъ							
680. 18 ✓ 1	6 ad.	Бердудунстакъ; пр. Сардазъ	20 ii		Н. Зарудный	"			
		dep. Сардазъ	1901						

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 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 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

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





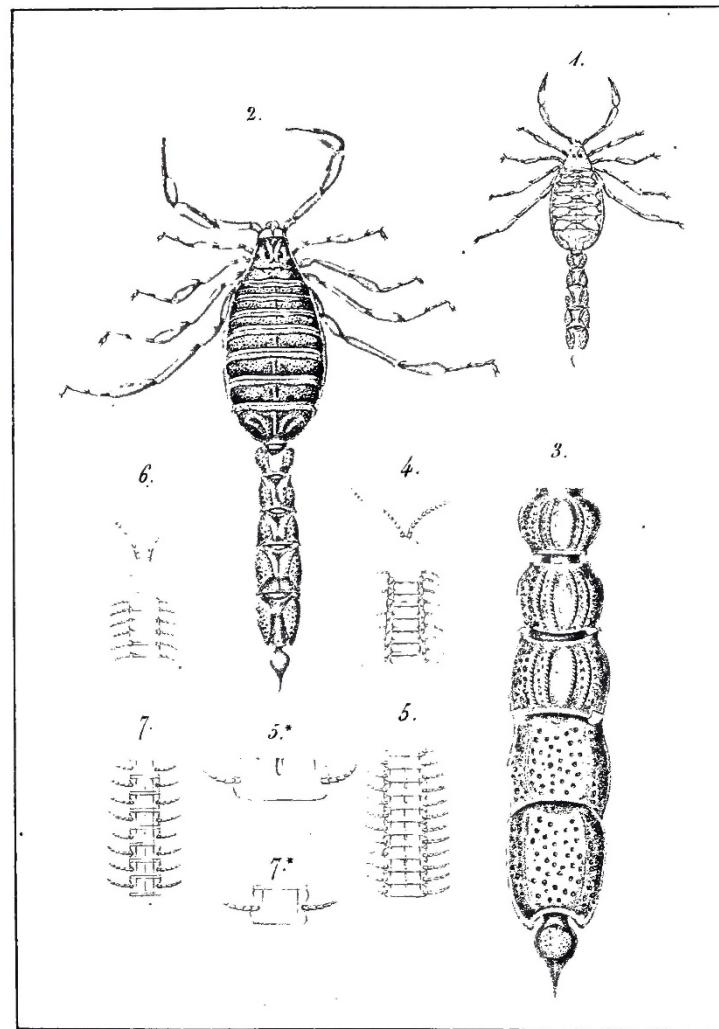
M.N. Bogdanov

Modest N. BOGDANOV

(1841 – 1888)

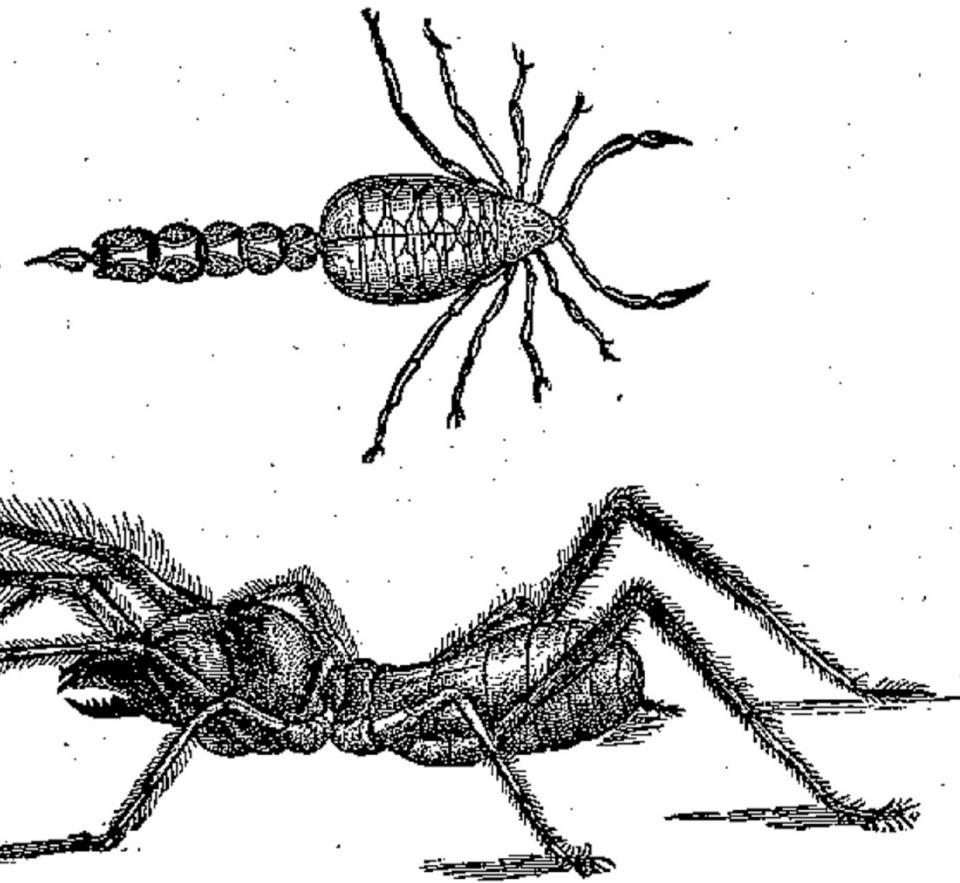
**Accompanied Russian imperial troops
annexing the Khanate of Khiva
(now in NW Uzbekistan)**





Lith. N. Bruegelius & Fils 1875

Kessler, 1874



Скорпіонъ и фаланга.

Bogdanov, 1882

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

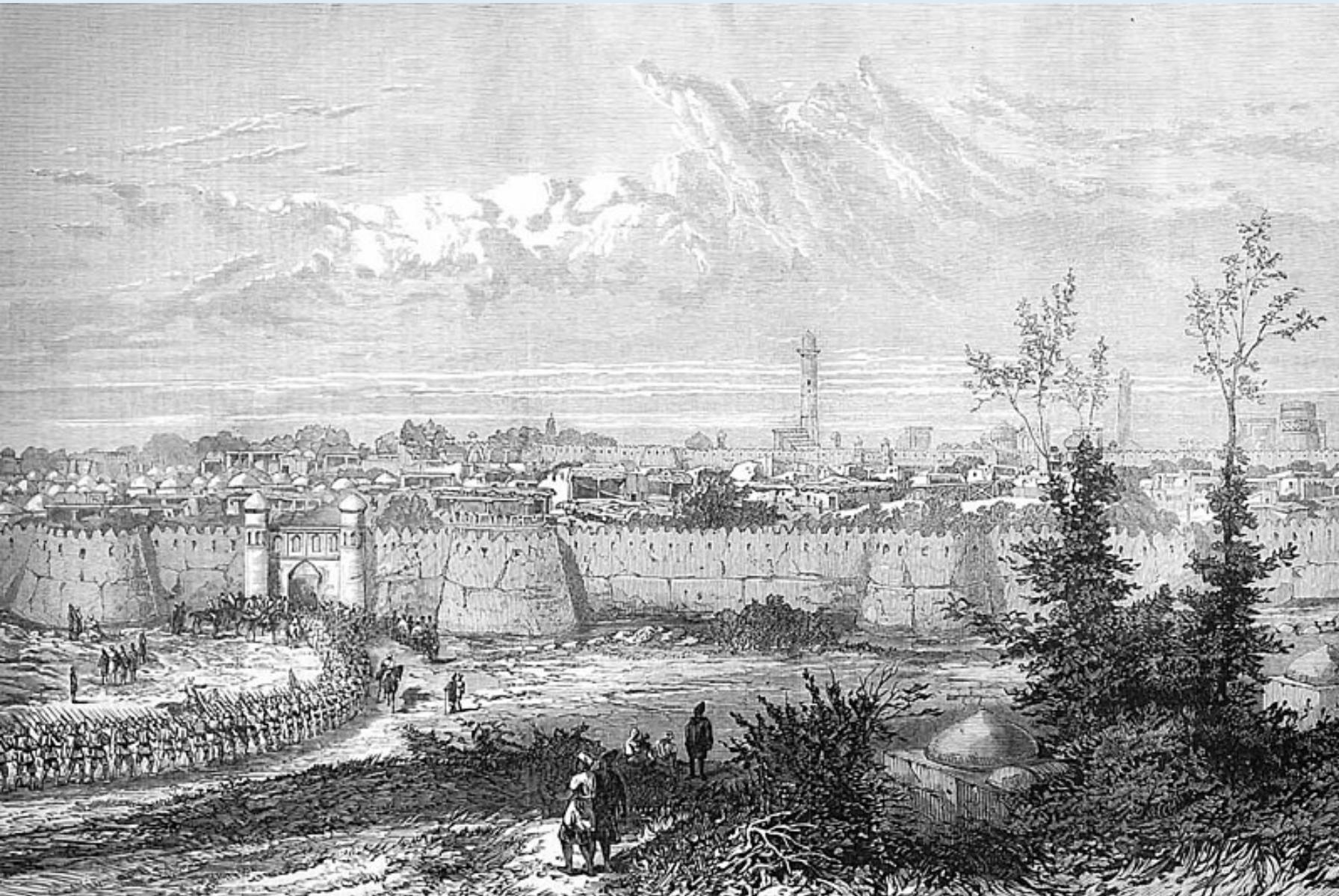


3001. Муз. АН
 № 106 - 1905.

3001. Муз. АН
 № 179 - 1907.

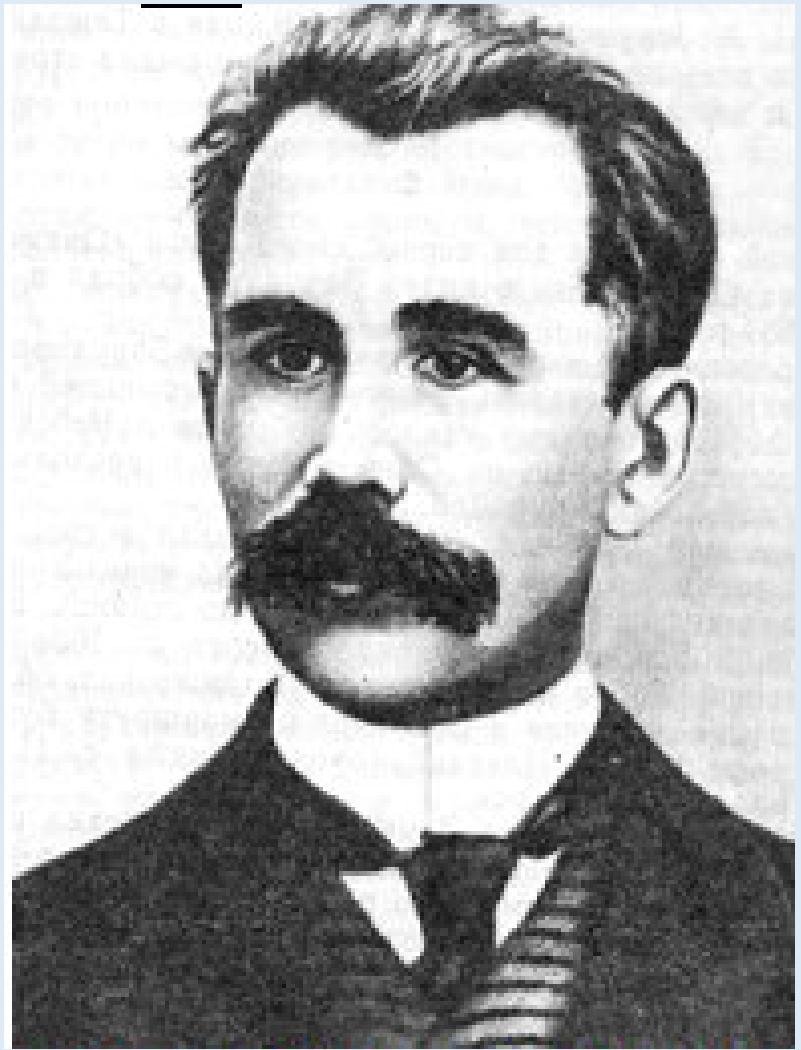
665. *Orthochirus serobi*
culosus melanurus (Kess)
 Оп. А. Гирько. ♀ juv.
 СборEmp.-Даргинск. обл.,
 Даргинск. 4. V. 1905 г.
 Д. Текман.

666. *Orthochirus sero*
bicusculus melanurus (Ke)
 Оп. А. Гирько. juv.
 Сбор Emp.-Даргинск. обл.,
 Колодезь. Нарын-Кудук.
 (некол на 20 л. к 10-3).
 20.VI.1907. Н. Варудин.



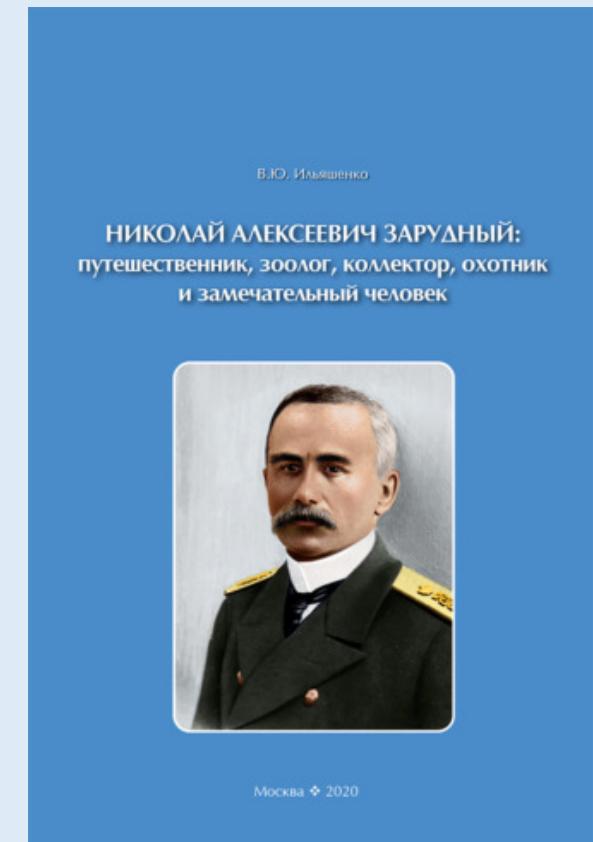
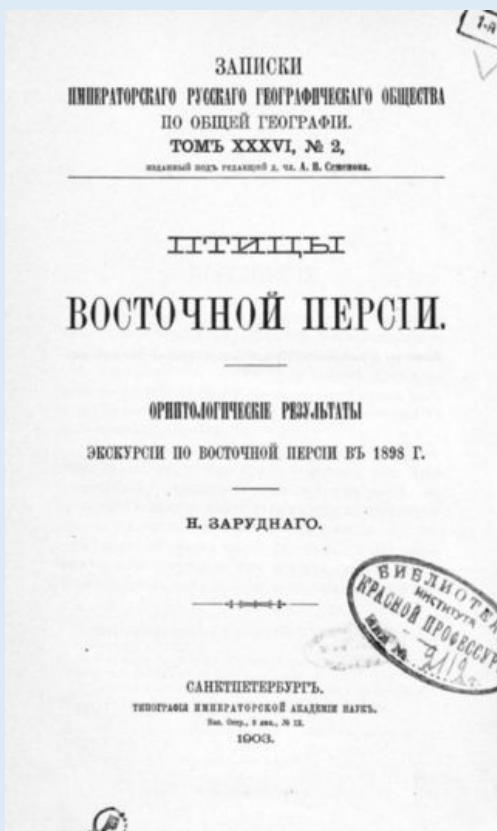
Russian Imperial
troops enter the
Khiva oasis (1873)

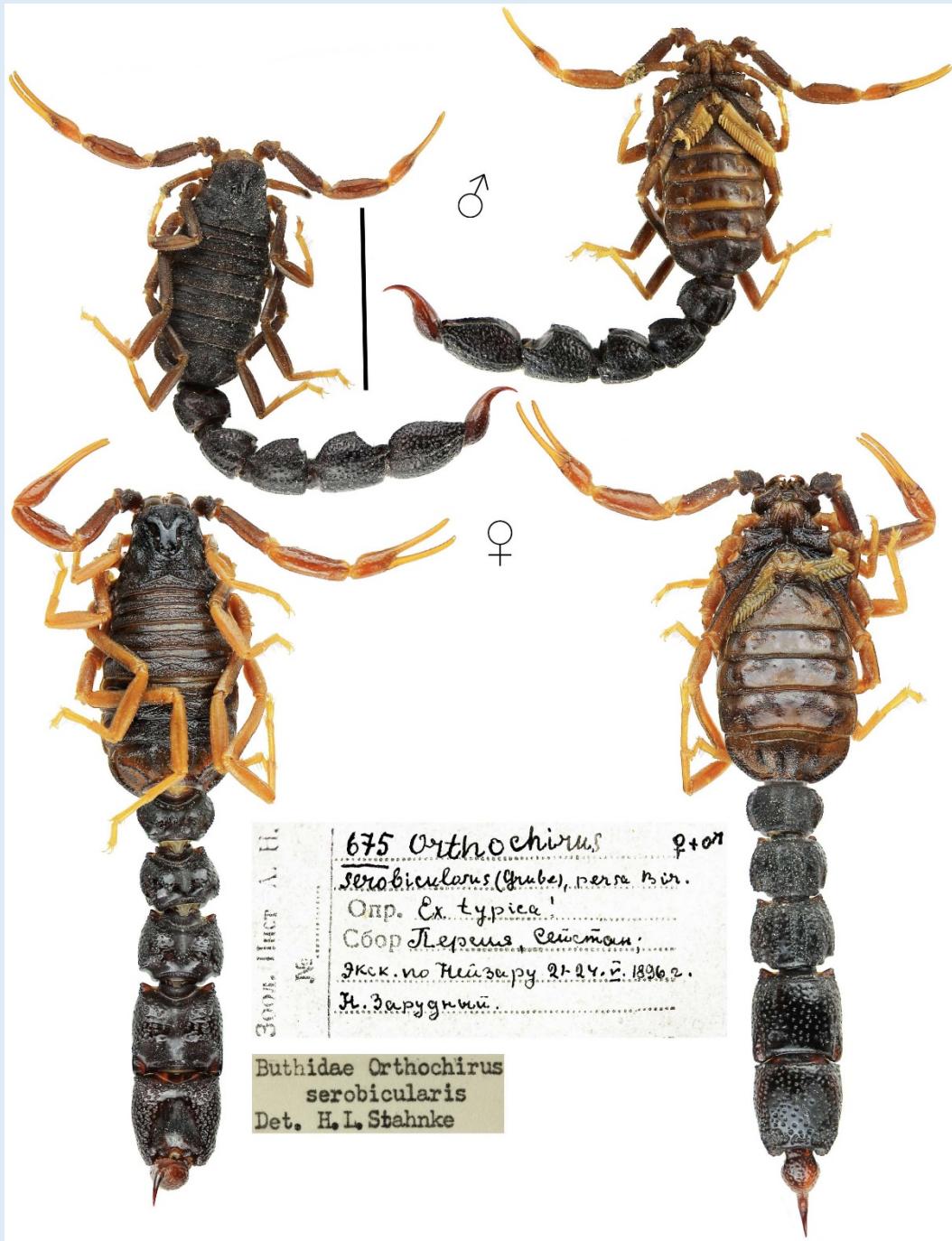




Nikolai A. ZARUDNY

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





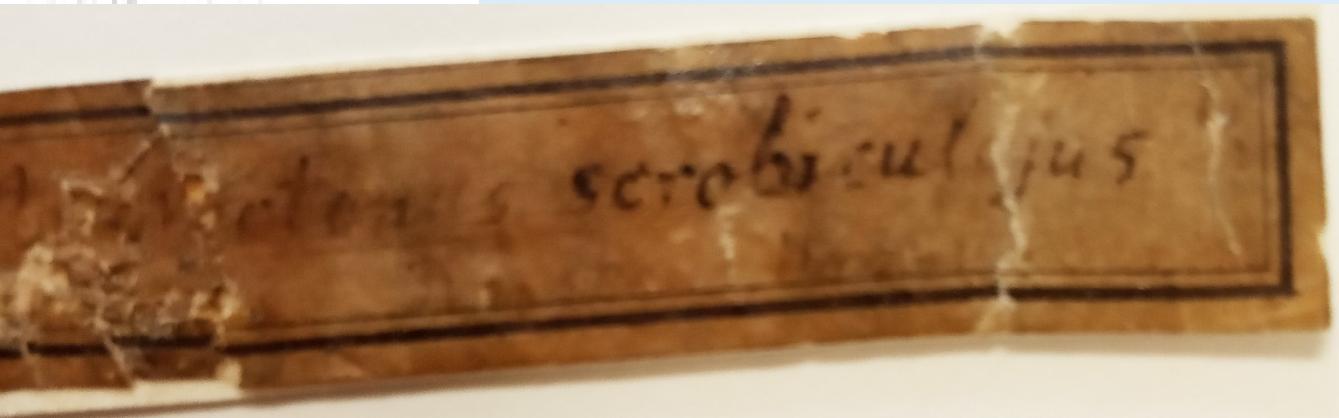
Orthochirus persa (Birula, 1900)

(SE Iran)





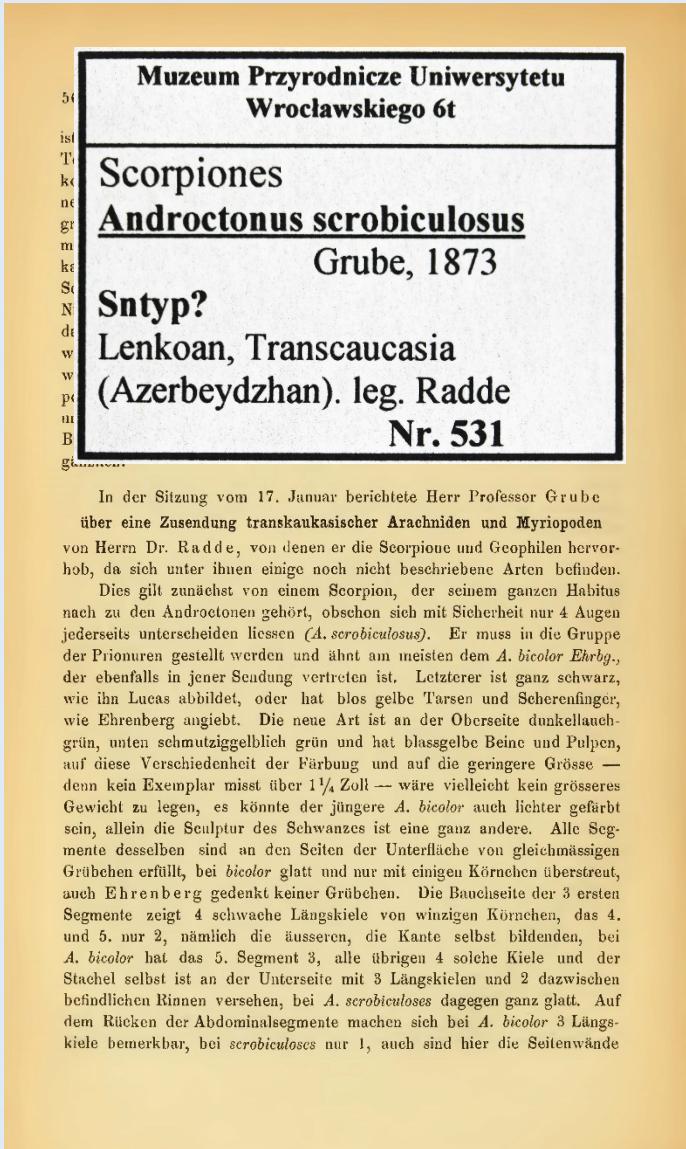
Adolph Grube



Orthochirus scrobiculosus (Grube, 1873)

(Turkmenistan)

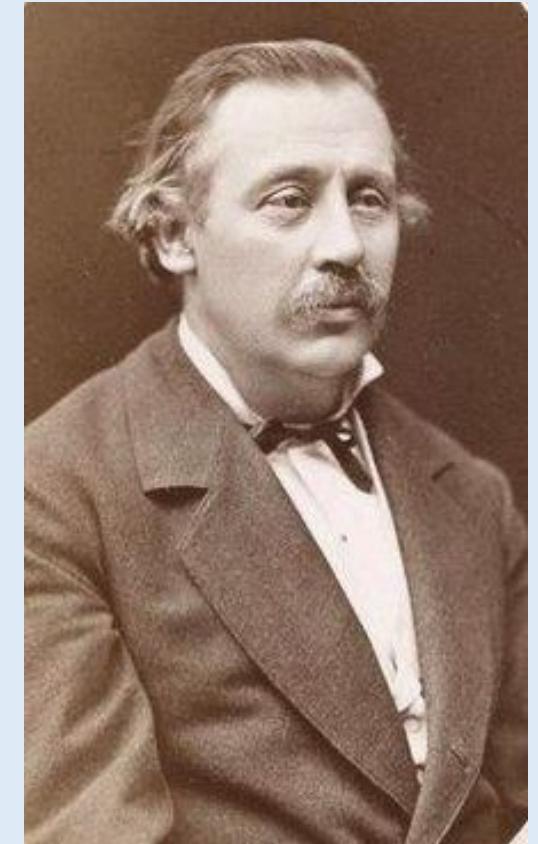
**Adolph Eduard
GRUBE (1812-1880),
Professor of Zoology at
the Universität Breslau
(now the University of
Wrocław, Poland).**



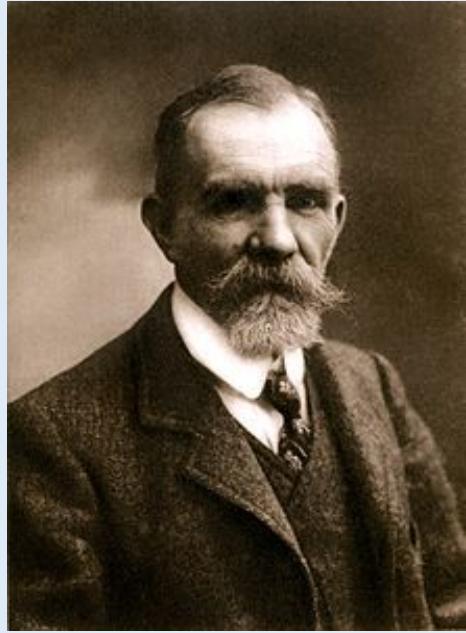


The convoluted story of **Grube's single specimen**, which survived two world wars, is nothing short of amazing. It personifies 150 years of zoological research in Central Asia done by many enthusiastic naturalists of diverse backgrounds. Adolph Grube was a German zoologist at the Universität Breslau (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 Transcaspian 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!