

The scorpion (Arachnida, Scorpiones) collections held at the «Museo Regionale di Scienze Naturali» of Turin (Italy)

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The Museum

The Zoological Museum of Turin University, or “Museo di Zoologia dell’Università di Torino” (MZUT), is one of the oldest and most important Italian university museums. Since the middle of XIX century the museum, directed by Filippo De Filippi (1814-1867), one of the first promoters of Darwinian ideas in Italy, began to acquire important and rare materials from all around the world. Under the subsequent direction of Michele Lessona (1823-1894) and Lorenzo Camerano (1856-1917), long and difficult expeditions were organized by the museum as well as by private researchers such as Enrico Festa, Alfredo Borelli and many others, increasing the collections and shaping the Turin museum as an important point of reference for the whole of Europe (Parona, 1918). Since 1980, the collections of the Zoological Museum of Turin University have been entrusted to the Regional Museum of Natural Sciences of Turin, or Museo Regionale di Scienze Naturali di Torino (MRSN).



Paruroctonus silvestrii (Borelli, 1909)

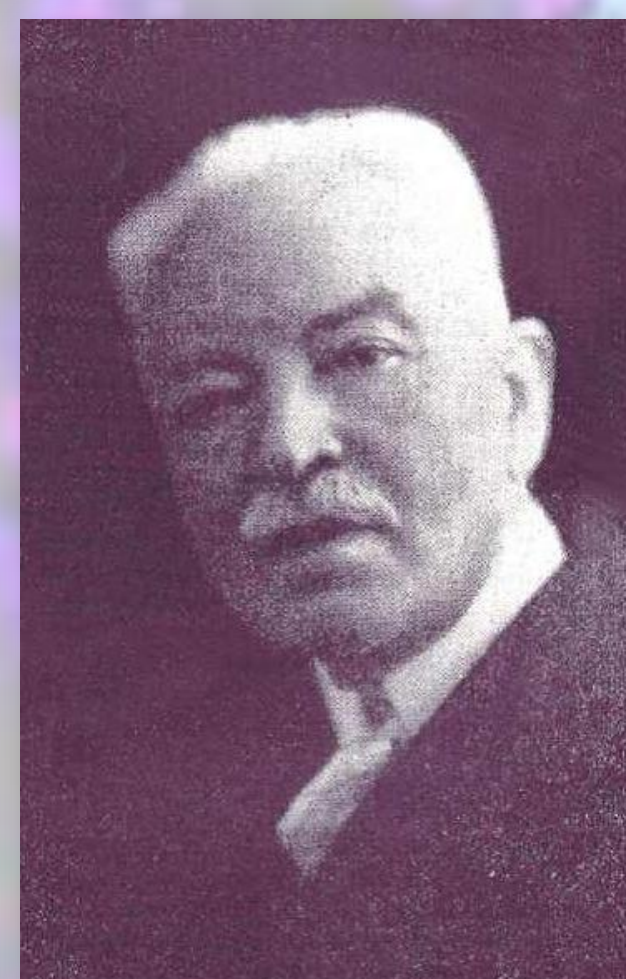
Tityus argentinus (Borelli, 1909)

The historical collection (MZUT)

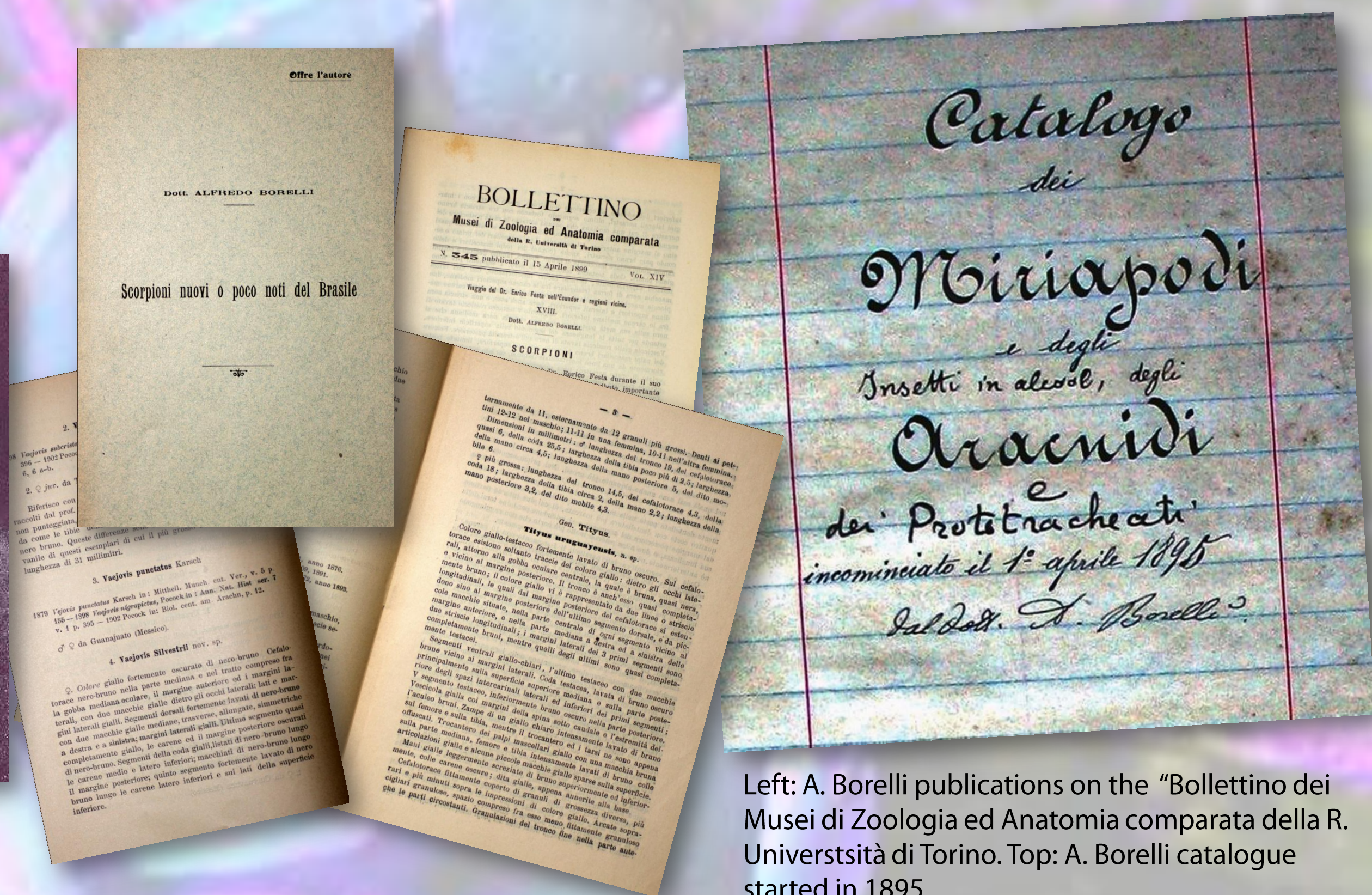
The historical scorpions collection of the The Zoological Museum of Turin University is quite large with more than 3300 specimens divided in 800 tubes, about 300 species, 67 genera, 11 families from all continents all stored in ethanol. The majority of the samples are from Africa and South America, however Asia and Europe are also well represented. In general, the samples are in good condition and the original labels are almost all present though the information on the locality are often unclear or lacking. The type material can be attributed to 24 species that comprise important samples studied by Borelli in the beginning of 20th century (see table 1). Recently, we located the syntypes of *Tityus argentinus* Borelli, 1899, which had long been presumed lost (see Fet & Lowe, 2000: 232), the holotype of *Uroplectes silvestrii* Borelli, 1913 = *Butheoloides silvestrii* (Borelli, 1913) comb. n. and the female holotype of *Hemiscorpius tellinii* Borelli, 1904 (see Kovařík & Mazuch, 2011).



Teuthraustes festae (Borelli, 1899)



Alfredo Borelli (1858-1943)



Left: A. Borelli publications on the “Bollettino dei Musei di Zoologia ed Anatomia comparata della R. Università di Torino. Top: A. Borelli catalogue started in 1895.

Alfredo Borelli

The scorpion collection held in Turin museum is quite large and historically important. The collection dates back to the 19th century and reflects the global perspective of the institution and the contribution of many eminent zoologists. Among them is worth to mention Alfredo Borelli. Alfredo Borelli (1858-1943), zoologist and arachnologist of a well-off family, travelled to South America (Argentina, Paraguay and Bolivia) in 1893-94 and 1895-96 (Zavattari, 1943). His large entomological collection is renowned, but Borelli also collected important species in other invertebrate groups, especially scorpions. He was destined to attend legal studies but his vocation led him to attend the study of Natural Sciences at the University of Turin, where he graduated in 1886 with a thesis on the osteological variations in *Rana fusca*. In those years, in Turin, a great interest for natural history researches, conducted in different continents, was growing and several well-known specialists studied and published new species as well as Alfredo Borelli.

Table1 – Scorpiones types list

Collection	N.cat.	Family	Genus	species	sub-species	Author(s)	New nomenclature	Locality	Legit	
1	MZUT	Sc.18	Buthidae	<i>Babycarus</i>	<i>zambonellii</i>	Borelli, 1902		Chenafena, Eritrea	Zambonelli	Typus
2	MZUT	Sc.13	Buthidae	<i>Lychas</i>	<i>shellfordi</i>	Borelli, 1904		Kuching, Sarawak, Borneo, Malaysia	Shellford	Lectotype and Paratypes
3	MZUT	Sc.4	Buthidae	<i>Ananteris</i>	<i>cussinii</i>	Borelli, 1910		Cagua, Venezuela	Cussini	Lectotype
4	MZUT	Sc.421	Buthidae	<i>Rhopalurus</i>	<i>rochae</i>	Borelli, 1910		Ceará, Brasile	de Rocha	Lectotype
5	MZUT	Sc.459	Buthidae	<i>Tityus</i>	<i>festae</i>	Borelli, 1899		Tintin, Darien, Panama	Festa, 1895	Typi
6	MZUT	Sc.461	Buthidae	<i>Tityus</i>	<i>intermedius</i>	Borelli, 1899		Ibarra, Ecuador	Silvestri, 1899	Lectotype
7	MZUT	Sc.462	Buthidae	<i>Tityus</i>	<i>mattogrossensis</i>	Borelli, 1901		Cuyabá, Mato Grosso, Brasile	Silvestri, 1899	Typus
8	MZUT	Sc.470	Buthidae	<i>Tityus</i>	<i>trivittatus</i>	Borelli, 1899	<i>Tityus confuens</i> (Borelli, 1899)	Cajía, Chaco boliviano, Bolivia	Borelli, 1903	Typi
9	MZUT	Sc.472	Buthidae	<i>Tityus</i>	<i>trivittatus</i>	Borelli, 1899	<i>Tityus confuens</i> (Borelli, 1899)	S.Francisco, Chaco boliviano, Bolivia	Borelli, 1903	Typi
10	MZUT	Sc.480	Buthidae	<i>Tityus</i>	<i>uruguayensis</i>	Borelli, 1901		Salto, Uruguay	Silvestri, 1899	Lectotype
11	MZUT	Sc.5	Buthidae	<i>Ananteris</i>	<i>festae</i>	Borelli, 1899		Rio Peripa Forest, Ecuador	Festa, 1895-'98	Typus
12	MZUT	Sc.6	Buthidae	<i>Ananteroides</i>	<i>feae</i>	Borelli, 1911	<i>Ananteris feae</i> (Borelli, 1911)	Cacanda Rio Cassine, Guinea Bissau	Silvestri, 1900	Lectotype and Paralectotype
13	MZUT	Sc.7	Buthidae	<i>Ananteroides</i>	<i>feae</i>	Borelli, 1911	<i>Ananteris feae</i> (Borelli, 1911)	Guinea	Silvestri, 1900	Typi
14	MZUT	Sc.989	Buthidae	<i>Tityus</i>	<i>argentinus</i>	Borelli, 1899		San Lorenzo, Jujuy, Argentina	Borelli	Lectotype
15	MZUT	Sc.990	Buthidae	<i>Tityus</i>	<i>argentinus</i>	Borelli, 1899		San Lorenzo, Jujuy, Argentina	Borelli	Paralectotype
16	MZUT	Sc.991	Buthidae	<i>Tityus</i>	<i>argentinus</i>	Borelli, 1899		San Pablo, Tucuman, Argentina	Borelli	Paralectotype
17	MZUT	Sc.757	Buthidae	<i>Uroplectes</i>	<i>silvestrii</i>	Borelli, 1913	<i>Butheoloides silvestrii</i> (Borelli, 1913)	Cikemeji, Nigeria	Silvestri, 1912	Holotype
18	MZUT	Sc.141	Chactidae	<i>Chactes</i>	<i>dubius</i>	Borelli, 1899	<i>Teuthraustes dubius</i> (Borelli, 1899)	Santiago Valley, Ecuador	Festa, 1895-1899	Typus
19	MZUT	Sc.142	Chactidae	<i>Chactes</i>	<i>festae</i>	Borelli, 1899	<i>Teuthraustes festae</i> (Borelli, 1899)	Santiago Valley, Ecuador	Festa, 1895-1899	Typus
20	MZUT	Sc.256	Chactidae	<i>Heterochactes</i>	<i>wittii</i>	Kraepelin, 1896	<i>Teuthraustes wittii</i> (Kraepelin, 1896)	Laja, Ecuador		Typus
21	MZUT	Sc.264	Hemiscorpiidae	<i>Hemiscorpius</i>	<i>tellinii</i>	Borelli, 1904		Hailebaret, Eritrea	Tallini	Holotype
22	MZUT	Sc.507	Vaejovidae	<i>Vaejovis</i>	<i>globosus</i>	Borelli, 1915	<i>Hoffmannius globosus</i> (Borelli, 1915)	Dinamite, Durango, Messico		Typus
23	MZUT	Sc.508	Vaejovidae	<i>Vaejovis</i>	<i>intermedius</i>	Borelli, 1915		Dinamite, Durango, Messico	Chiavaviglio	Lectotypus
24	MZUT	Sc.522	Vaejovidae	<i>Vaejovis</i>	<i>silvestrii</i>	Borelli, 1909	<i>Paruroctonus silvestrii</i> (Borelli, 1909)	Los Angeles, Sierra madre, USA	Silvestri	Typus
25	MRSN	Sc.44	Buthidae	<i>Tityobuthus</i>	<i>luciliae</i>	Laurence, 1996		Parc de L'Est, Antsirabe, Antananarivo, Vakinankaratra, Madagascar	Duval, 1973	Holotype, Allotype
26	MRSN	Sc.13	Bothriuridae	<i>Orobathriurus</i>	<i>sp.n</i>	Ochoa et al., in prep.		Orangano, Ancash, Peru	Etonti, 1994	Paratypes
27	MRSN	Sc.14	Bothriuridae	<i>Orobathriurus</i>	<i>sp.n</i>	Ochoa et al., in prep.		Querochocha, Ancash, Peru	Etonti, 1994	Paratypes
28	MRSN	Sc.15	Bothriuridae	<i>Orobathriurus</i>	<i>sp.n</i>	Ochoa et al., in prep.		Pastocuri, Ancash, Peru	Etonti, 1994	Paratypes

Recent collection (MRSN)

The most recent scorpions collection, which belongs to the «Museo Regionale di Scienze Naturali» of Turin (MRSN), consists of 122 specimens, 59 tubes and 27 species belonging to 16 genera and 6 families. Except for a few Italian specimes of genus *Euscorpius*, the other samples are mainly from South America (sampled by C. Bordon, M. Etonti and J. Cej) and Africa, in particular Madagascar (sampled by F. Andreone et al. and C. Duval) Although the collection is not particularly large, the type material of two species is recorded: *Tityobuthus luciliae* Lourenco, 1996 and *Orobathriurus* sp. n., the latter currently under description by Dr. Jose Ochoa.

Conclusion

The invertebrate collections of the The Zoological Museum of Turin University and the collection of the Regional Museum of Natural Sciences of Turin are particularly rich and important for the historical value and also for the high number of type species. Among them, the Scorpiones collections briefly presented here worth to be mentioned. In this first attempt we tried to show off these interesting collections, neglected for too long, but that today are still useful for specialist interested in systematics and for description of new species from all over the world.

Both MZUT and MRSN scorpions collections are on informatics database, however the cataloguing work is still in progress. The collections need to be fully revised and the nomenclature must be updated in order to obtain the correct number of species and specimens. Moreover, huge amount of the materials has been already determined, although there are still some samples to be sorted and examined.

References

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