

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

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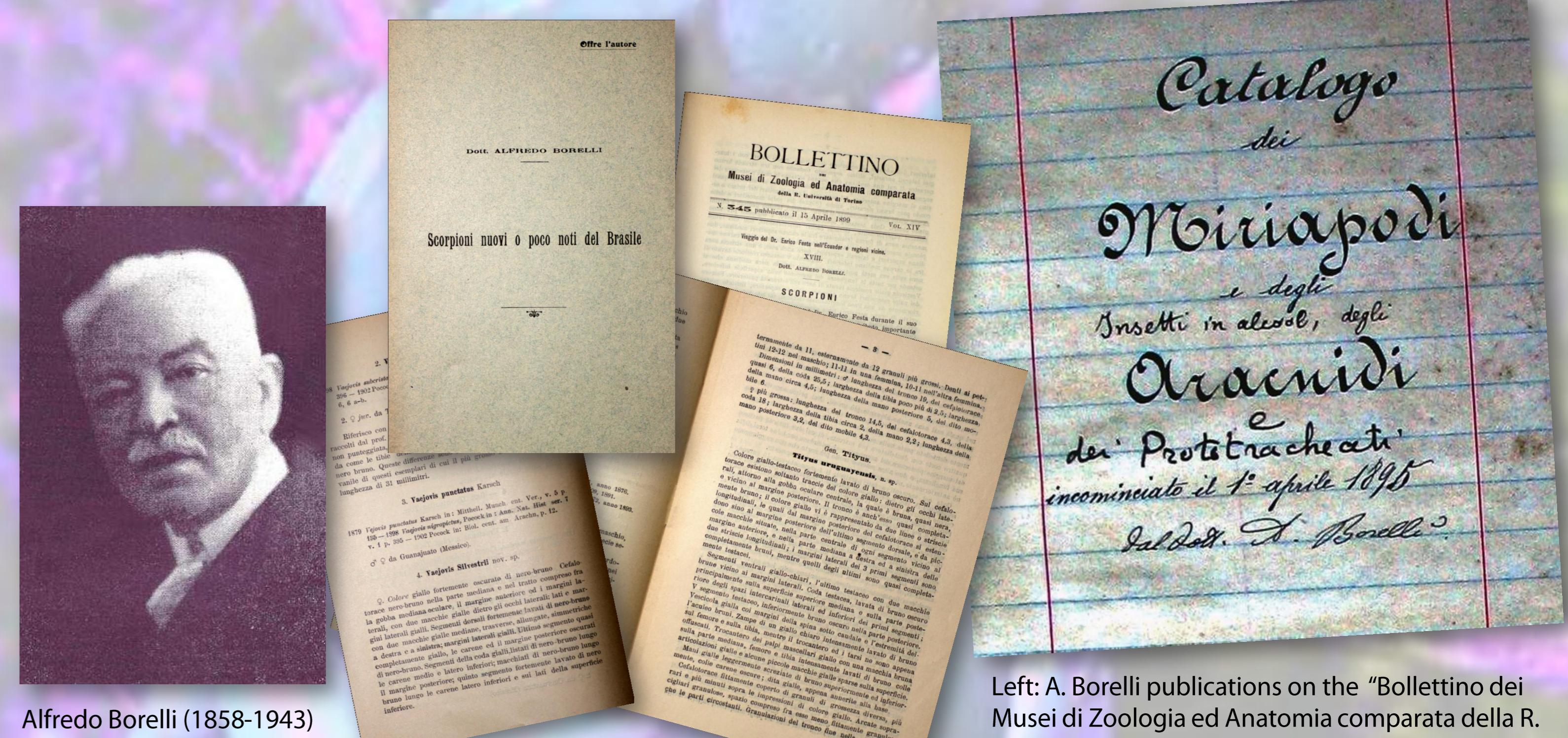
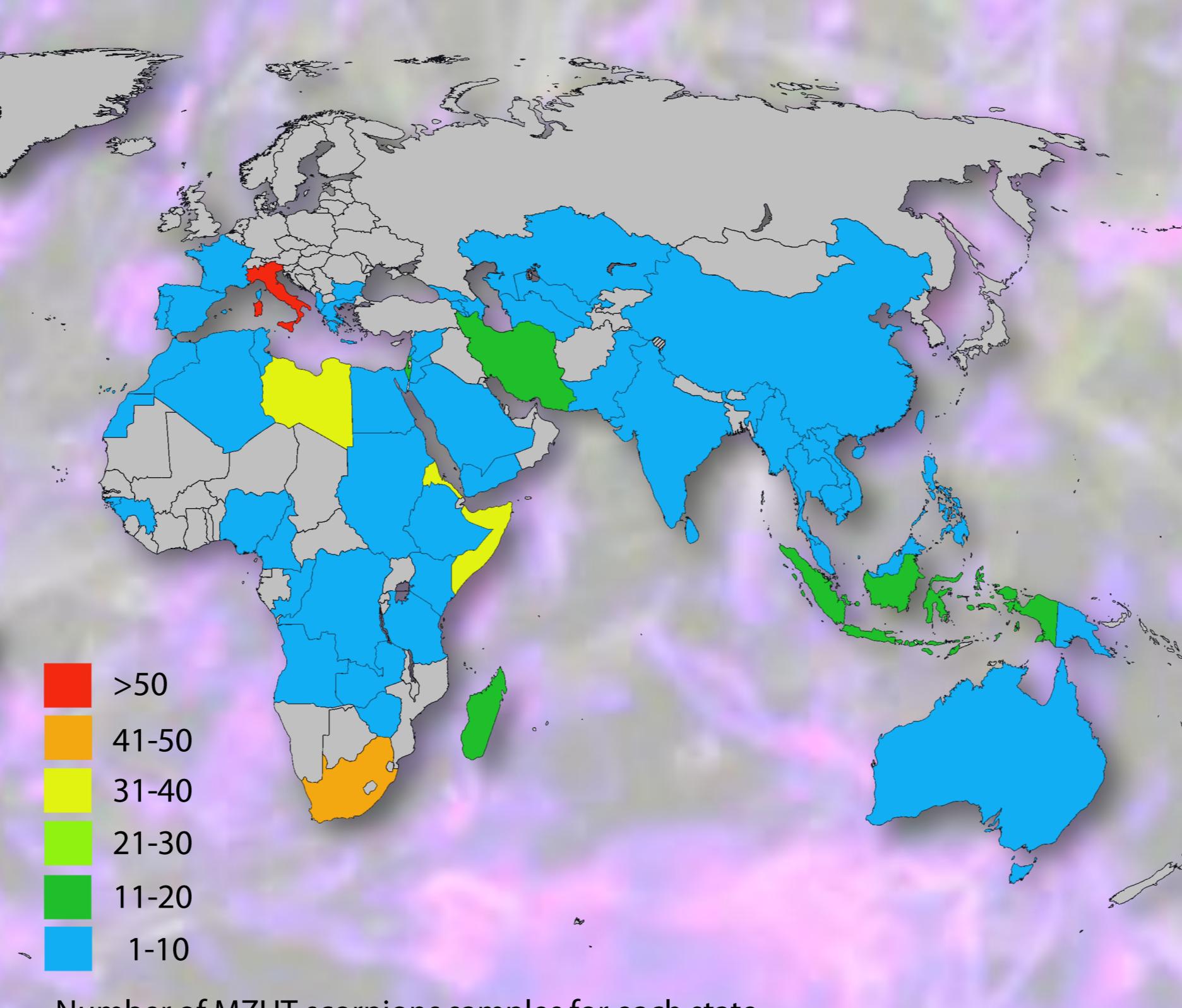
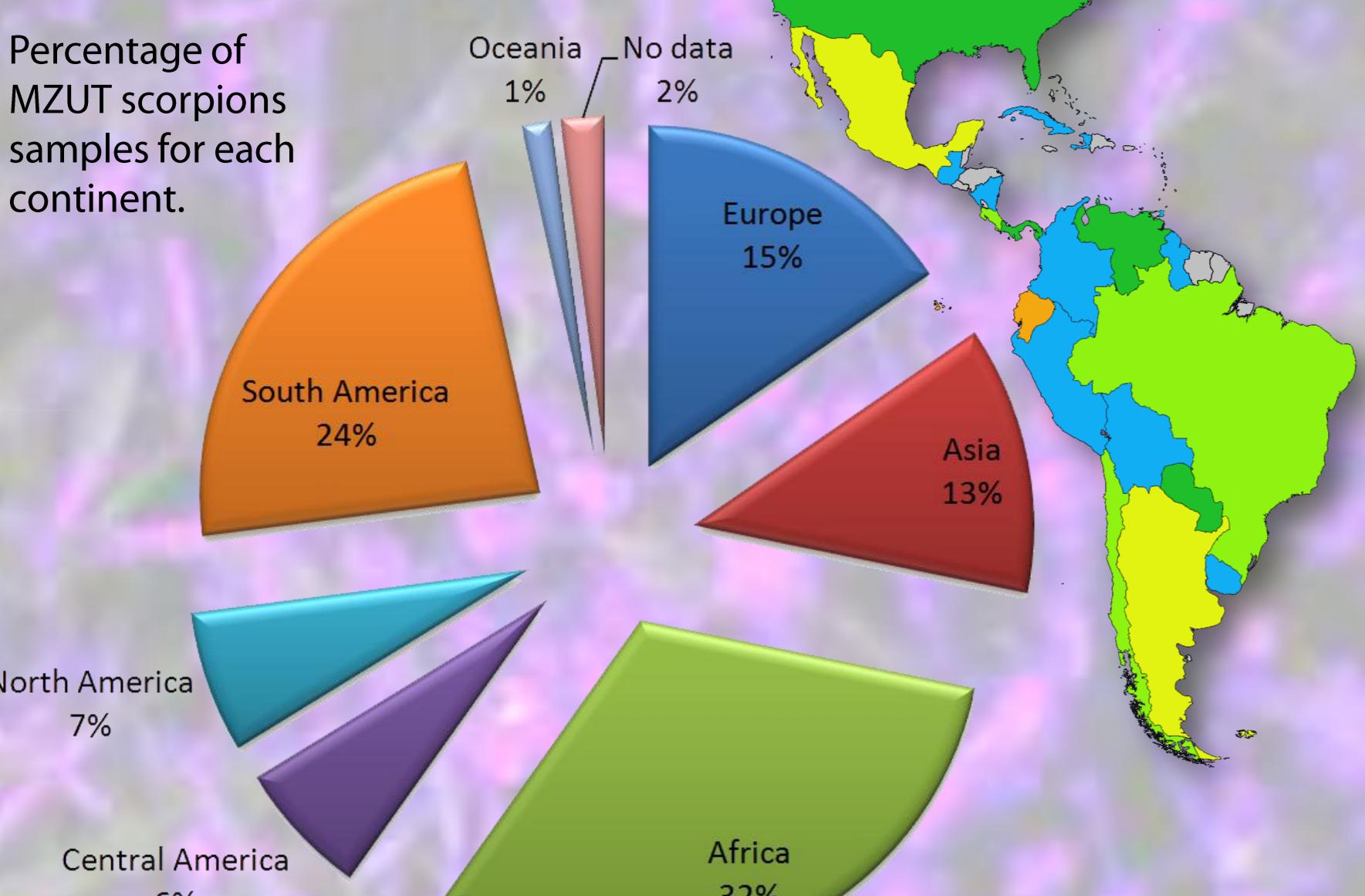
The Museum

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).



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).



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.

Table 1 – Scorpiones types list

Collection	N.cat.	Family	Genus	species	sub-species	Author(s)	New nomenclature	Locality	Legit
1	MZUT Sc.18	Buthidae	<i>Babycurus</i>	<i>zambonelli</i>		Borelli, 1902		Chenafena, Eritrea	Zambonelli Typus
2	MZUT Sc.313	Buthidae	<i>Lychas</i>	<i>shirodai</i>		Borelli, 1904		Kuching, Sarawak, Borneo, Malesia	Shirodai Lectotype and Paratypes
3	MZUT Sc.4	Buthidae	<i>Ananteris</i>	<i>cuspidini</i>		Borelli, 1910		Caguar, Venezuela	Cuspidini Lectotype
4	MZUT Sc.421	Buthidae	<i>Rhopalurus</i>	<i>rocheae</i>		Borelli, 1910		Ceará, Brasil	de Rocha Lectotype
5	MZUT Sc.459	Buthidae	<i>Tityus</i>	<i>festae</i>		Borelli, 1899		Tinton, Darién, Panamá	Festa, 1895 Typi
6	MZUT Sc.461	Buthidae	<i>Tityus</i>	<i>intermedius</i>		Borelli, 1899		Ibama, Ecuador	Festa, 1895-1898 Lectotype
7	MZUT Sc.462	Buthidae	<i>Tityus</i>	<i>matogrossensis</i>		Borelli, 1901		Cuyaba; Matto Grosso, Brasil	Silvestri, 1890 Typus
8	MZUT Sc.470	Buthidae	<i>Tityus</i>	<i>trivittatus</i>	<i>confluens</i>	Borelli, 1899	<i>Tityus confluens</i> (Borelli, 1899)	Cajá, Chaco boliviiano, Bolivia	Borelli, 1983 Typi
9	MZUT Sc.472	Buthidae	<i>Tityus</i>	<i>trivittatus</i>	<i>confluens</i>	Borelli, 1899	<i>Tityus confluens</i> (Borelli, 1899)	S. Francisco, Chaco boliviiano, Bolivia	Borelli, 1983 Holotype
10	MZUT Sc.458	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)	Caconde Rio Cassine, Guiné Bissau	Silvestri, 1900 Lectotype and Paratype
13	MZUT Sc.7	Buthidae	<i>Ananteroides</i>	<i>feae</i>		Borelli, 1911	<i>Ananteris feae</i> (Borelli, 1911)	Guiné	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 Paratype
16	MZUT Sc.991	Buthidae	<i>Tityus</i>	<i>argentinus</i>		Borelli, 1899		San Pablo, Tucumán, Argentina	Borelli Paratype
17	MZUT Sc.757	Buthidae	<i>Uroplectes</i>	<i>silvestrii</i>		Borelli, 1913	<i>Butheoloides silvestrii</i> (Borelli, 1913)	Olokemeji, Nigéria	Silvestri, 1912 Holotype
18	MZUT Sc.141	Chactidae	<i>Chactos</i>	<i>dubius</i>		Borelli, 1899	<i>Teuthraustes dubius</i> (Borelli, 1899)	Santiago Valley, Ecuador	Festa, 1895-1898 Typus
19	MZUT Sc.142	Chactidae	<i>Chactos</i>	<i>festae</i>		Borelli, 1899	<i>Teuthraustes festae</i> (Borelli, 1899)	Santiago Valley, Ecuador	Festa, 1895-1898 Typus
20	MZUT Sc.256	Chactidae	<i>Heterochactos</i>	<i>witti</i>		Kraepelin, 1896	<i>Teuthraustes witti</i> (Kraepelin, 1896)	Loja, Ecuador	Typus
21	MZUT Sc.258	Hemicorpiidae	<i>Hemicorpius</i>	<i>tellinii</i>		Borelli, 1904		Halibarêt, Eritrea	Tellini Holotype
22	MZUT Sc.507	Vaejovidae	<i>Vaejovis</i>	<i>globosus</i>		Borelli, 1915	<i>Hoffmannius globosus</i> (Borelli, 1915)	Dinamite, Durango, México	Typus
23	MZUT Sc.508	Vaejovidae	<i>Vaejovis</i>	<i>intermedius</i>		Borelli, 1915		Dinamite, Durango, México	Chiaraviglio 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>Tityobatus</i>	<i>luciaeae</i>		Lourenco, 1996		Parc de L'Est, Antananarivo, Vakinankaratra, Madagascar	Duval, 1973 Holotype, Allotype
26	MRSN Sc.13	Bothriuridae	<i>Orobothriurus</i>	sp.n.		Ochoa et al., in prep.		Quanganuco, Ancash, Perú	Etoni, 1994 Paratypes
27	MRSN Sc.14	Bothriuridae	<i>Orobothriurus</i>	sp.n.		Ochoa et al., in prep.		Querochaca, Ancash, Perú	Etoni, 1994 Paratypes
28	MRSN Sc.15	Bothriuridae	<i>Orobothriurus</i>	sp.n.		Ochoa et al., in prep.		Pastocuri, Ancash, Perú	Etoni, 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 specimens of genus *Euscorpius*, the other samples are mainly from South America (sampled by C. Bordon, M. Etonti and J. Ceí) 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: *Tityobatus luciaeae* Lourenco, 1996 and *Orobothriurus* sp. n., the latter currently under description by Dr. Jose Ochoa.

Conclusion

The invertebrate collections of 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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