

SHORT COMMUNICATION

Immolation of Museu Nacional, Rio de Janeiro – unforgettable fire and irreplaceable loss

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In 1807, the Portuguese royal government made a strategic retreat in advance of Napoleon I's invasion of Lisbon, and transferred the government to its thriving ex-colony of Brazil. Rio de Janeiro became the capital of the United Kingdom of Portugal, Brazil and the Algarves.

The Brazilian National Museum was established in Rio de Janeiro (MNRJ) in 1818, in the wake of great scientific and cultural improvement brought to Brazil by King John VI of Portugal (1767–1826). John VI's daughter-in-law, Archduchess Maria Leopoldina of Austria (1797–1826), was responsible for promoting visits by prominent European naturalists of the 19th century. Unfortunately, the collections made by these naturalists were taken to Europe. For example, the arachnological specimens of the Spix and von Martius expedition were taken to Munich (Horn & Kahle 1937) and destroyed by their use as teaching material (Tiefenbacher 1992).

The scientific enthusiasm of Emperor Pedro II of Brazil (1825–1891), who was born in Rio de Janeiro, promoted the early growth of the MNRJ collections, including an improbable stash of Ancient Egyptian steles and sarcophagi confiscated from smugglers and hundreds of artifacts of Pre-Columbian archaeology from the Emperor's personal collection. By then, MNRJ was already located in the Paço de São Cristóvão (Saint Christopher's Palace).

Growth of the zoological collections of MNRJ accelerated in the early 20th century when the arachnology collection was formed. Cândido de Mello-Leitão (Fig. 1a) was at first a collaborator and then a member of the museum staff. He was a pioneer and the most prominent arachnologist in South America; most of his personal collection was housed in the MNRJ.

From the mid-1990s onward, what is now called ArachnoLab (AracnoLab in Portuguese) entered a dramatic expansion phase. This included important output of scientific papers, training of taxonomists in Arachnida, Myriapoda and Onychophora, organization of expeditions around the world and multiplication of the holdings (Fig. 1b) of the arachnid/myriapod/velvet worm collections, including the purchase of the private collection of Helia Soares, containing many types of Opiliones.

The ArachnoLab welcomed several visitors each year, many interested in picking specimens of their own groups of interest from amidst our generous backlog (Fig. 1c). We also had a policy of sending abroad as many specimens as we could. Most reasonable requests from fellow arachnologists were met, and many scientists from the around world based a significant part of their research on the MNRJ specimens.

Dozens of successful students have been educated in the ArachnoLab (Fig. 1d), many of whom—such as A. Chagas (Universidade Federal do Mato Grosso - UFMT), A. Giupponi (Fundação Oswaldo Cruz - FIOCRUZ), A. Mendes (Universidade Estadual do Rio de Janeiro - UERJ), A. Pérez-González (Museo

Argentino de Ciencias Naturales - MACN)—are presently employed in Arachnology/Myriapodology positions in educational and scientific institutions. Curator A.B. Kury's stimulating research on Opiliones functioned as a magnet for foreign students who received their M.Sc. and/or Ph.D. titles in Brazil. These hailed from Cuba (Abel Pérez-González), Colombia (Andrés García, Miguel Medrano) and Venezuela (Osvaldo Villarreal).

The Opiliones are the most intensively studied arachnid taxon at the MNRJ, and hundreds of important breakthroughs have been made through study of MNRJ material. However, in addition to Opiliones, meaningful discoveries based on material from our collection also include: (1) “the spider that was an Acari” (Krantz & Platnick 1995), (2) the amazing *Scolopendropsis duplicata* Chagas-Jr., Edgecombe & Minelli, 2008, a new centipede from Tocantins State, central Brazil, whose discovery led to a revised diagnosis of the order Scolopendromorpha (Chagas-Jr. et al. 2008), (3) *Troglophopalurus translucidus* Lourenço, Baptista & Giupponi, 2004 (Buthidae), a bizarre, cave-dwelling, unpigmented scorpion (Lourenço, et al. 2004), (4) *Tmesiphantes hypogeus* Bertani, Bichuette & Pedroso, 2013 the first troglolithic tarantula from Brazil (Bertani et al. 2013), (5) material of the scorpion *Lychas scutillus* (C.L. Koch, 1845)(Buthidae), which allowed the designation of a neotype resolving a long-standing taxonomic problem (Lourenço 2017), (6) a new species of the amblypygid *Charinus* Simon, 1892 (Fig. 1e), endemic to the pluvial galleries of the museum palace itself, which became the symbol of the ArachnoLab. This species, which is in the process of description, may now be extinct, killed by the intense heat that radiated from the fire to the catacombs.

On September 2, 2018, just after the celebration of the 200th anniversary of the museum, the palace was entirely burned, causing the loss of all collections of Archaeology, Entomology, Ethnology, Malacology, Paleontology, and.... Arachnology (Fig. 1f). The scientific collections located in the ArachnoLab just before the cataclysmic fire comprised 190,000 specimens, of which ca. 2,000 were type specimens, including a fine Dipluridae collection, impressive collections of whip-spiders and scorpions (all with important types), and the crown jewel: the fantastic harvestmen collection (45,000 numbered specimens), equal in size to the spider collection and a particular specialty of MNRJ. This collection boasted a wealth of Colombian/Ecuadorian harvestmen and specimens from dozens of far-flung countries such as Indonesia and Tajikistan. The ArachnoLab also produced the OmniPaper project—a unique bibliographic online resource for taxonomy of Opiliones which is regularly visited by hundreds of students and researchers. The existence of OmniPaper is remarkable in itself, because it was produced without significant institutional support, and in a country where a bibliography is a rare commodity.



Figure 1.—a. Mello-Leitão in the late 1920s (from family album), b. Partial view of scientific collection of ArachnoLab, ca. 2016 (photo M. Medrano), c. Visit of researchers from Universidade de São Paulo, ArachnoLab (photo A.B. Kury), d. Team of the ArachnoLab in the central garden of the palace, 2016 (photo R. Gomes), e. Undescribed *Charinus* from the National Museum pluvial galleries (photo P.M. Costa), f. Moment of the explosion of the ArachnoLab (photo P.M. Costa), g. Aftermath of the fire, with the arachnological collection destroyed (photo A. Giupponi).



Figure 2.—Recovery efforts in the ArachnoLab; photo by Carla Barros.

All materials from the arachnology collection that were in the palace at the time of the fire were destroyed. However, all is not lost. Significant holdings were spared because they were on loan to other institutions, and this may include some of the material cited in this paper. Thanks to a serious backup routine (which unfortunately seems to have been an exception in the MNRJ), none of the electronic data of the arachno-collections and projects was lost in the cataclysm. Two type-specimen catalogues of the arachno-collection of MNRJ had already been produced: minor orders (Kury & Nogueira 1999) and a massive catalogue of spiders (Silva-Moreira et al. 2010). The culminating part, the catalogue of Opiliones types, was in preparation at the time of the fire.

In spite of our best efforts to create a center of arachnological research in the face of poor conditions for science in Brazil, the worst happened. When the 200-year old palace that lodged most of the MNRJ burst into flames, there was no water to quench the fire (Zamudio et al. 2018). A wealth of one fifth of a million specimens was lost to mankind (Fig. 1g), due to long-term neglect of the museum infrastructure.

Steady action should be taken to counteract the endemic neglect of education, science and culture in Brazil. Only when scientific research is treated with greater regard will our inheritance be preserved. Meanwhile, we have to rely only on the relentless personal efforts by Kury and colleagues to rebuild the ArachnoLab and a healthy collection (Fig. 2), which will again be open to all researchers of the world once the new legal barriers to the investigation of biodiversity (Bockmann et al. 2018) are cleared. The current way that people can

contribute funds to help the rebuilding effort is shown on the website of ArachnoLab (online at <http://www.museunacional.ufrj.br/mndi/Aracnologia/aracnol.htm>).

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