

P A P É I S A V U L S O S

DO

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SECRETARIA DA AGRICULTURA — SÃO PAULO — BRASIL

NINETEENTH CENTURY SOUTH AMERICAN
ARANEOLGY (1)

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Though the oldest South American spider collections date from only 60 to 150 years ago, the localities are difficult to find and the collectors and their itineraries have remained unknown. The whereabouts of collecting places, however, is of critical importance for pinpointing type localities for old names. It is hoped that this short and incomplete paper will contribute toward our knowledge of South American collecting localities.

The first describer of South American spiders was the Swiss, Perty, who in 1833 reported on the arachnids collected by the Spix and Martius expedition to Brazil. Dr. J. B. von Spix and Dr. C. F. P. von Martius traveled through Brazil mapping and collecting from 1817 to 1820 for the Bavarian King Maximilian Joseph I. Their travels have been reported in three volumes. Perty described spiders from equatorial Brazil, from the provinces [states] of *Para*, *Piauhi* [Piauí], *Bahia*, *Minarum* [Minas Gerais], from the *Rio Negro* area, the *Amazon*, from *Bahia* [Salvador] and from *Sebastianopolin* [Rio de Janeiro] (Map 2). While the Spix and Martius collection is with the zoological collection in Munich, the spiders have been lost. They may have been destroyed after World War II (Dr. W. Engelhardt *in litt.*)

The Frenchman, Nicolet, was the earliest South American author describing spiders. He lived part of his life in Chile, and died in

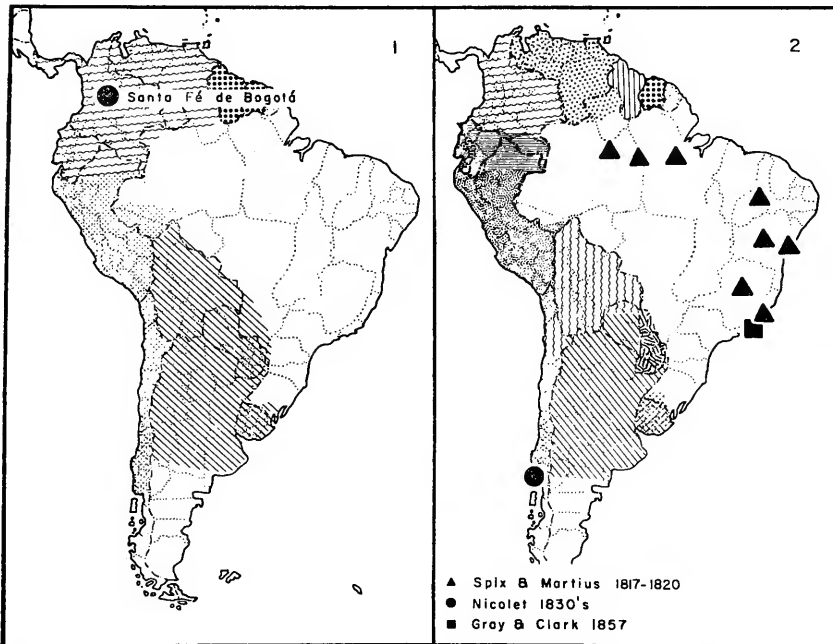
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1872 (Bonnet, 1945). The locality of his specimens is either *Chile* or *Valdivia* (Map 2). It is assumed that most of his collections came from the latter locality. His numerous species descriptions were based on general body form and coloration (Nicolet, 1842). Probably he gave each species numerous names depending on coloration of individual specimens. The recurring red color of many theridiid spiders is puzzling as this color is uncommon in preserved alcoholic specimens. Nicolet indicated that specimens were preserved in spirits; one wonders, however, what kind of "spirits" were used. The collections evidently are lost, and the descriptions are difficult to recognize.

In 1862 and 1863 the Englishman Blackwall published on spiders collected in *Rio de Janeiro* by J. Gray and H. Clark. The specimens are with the Blackwall collection in the Hope Department of Entomology, Oxford, England.

Early in his career (1874-1883), the Argentinean naturalist, E. Holmberg (1852-1937), published on the spiders of Argentina. His papers are listed in Bonnet (1945). His early (1874) paper is



Map 1 — Colonial South America, showing the province of New Granada (wavy lines) with the capital of Santa Fé de Bogotá (Hammond, 1953). Map 2 — South America, 1847 (Stieler, ?1847)

difficult to obtain (it is apparently not in any North American or European library), but a microfilm was made available. It was found that the usually cited page numbers for species descriptions and the spellings of some specific names, are in error. They were quoted from Keyserling, who apparently did not see the original paper, but corresponded with Holmberg. For Holmberg's species, mostly from the Buenos Aires vicinity (Map 3), there exist no types. By knowing which species are common, one can match up many of the descriptions. Holmberg sent determined specimens of some of his species to Keyserling. These are in the British Museum (Natural History) in London and are the only ones that have survived. While Holmberg's descriptions are based mainly on coloration, Keyserling illustrated the genitalia of several species in his great work on American spiders.

Of the authors who worked on spiders of South America, only Holmberg and Nicolet were South American. The others were Europeans (P. Bertkau, O. Pickard-Cambridge, L. Taczanowski, Count Keyserling and E. Simon), and received spiders from various collectors. Simon, as far as I know, is the only European araneologist to have visited the continent himself in search of specimens. Several early araneologists had an interest in ornithology as well as spiders.

From July 1872 to January of 1873 the Belgian Professor E. van Beneden went to South America for the Belgian government (van Beneden, 1873). The spiders he collected were presented to P. Bertkau, University of Bonn, who subsequently described them. According to Bertkau, the spiders came from the surroundings [now city] of Rio de Janeiro: *Botafago* [Botafogo]; *Tijuca*; *Copa Cobana* [Copacabana]; between *Cap Irmao* and *Cap Gavia* [Morro dos Dois Irmãos and Pedra da Gávea]. Others came from *Guandu* near Rio [a small river that enters the sea at Sepetiba]; *São Joao del Ré* [São João del Rei], *Chapeo d'Uvas* [Chapeu d'Uvas, municipio de Juiz de Fora, Minas Gerais], *Barbacena* in Minas Gerais; *Thérésopolis* [Teresópolis]; *Santa Catarina* and *Pedra açu Piz* [Pedra açu Pic] of the Cordillera of the Orgues [Serra dos Orgãos, Est. Guanabara]. Other localities are *Rio Grande* [? Est. São Paulo and Minas Gerais] and *Buenos Aires* (Map 3). The whereabouts of the types and other specimens of this collection are not known. They may have been lost.

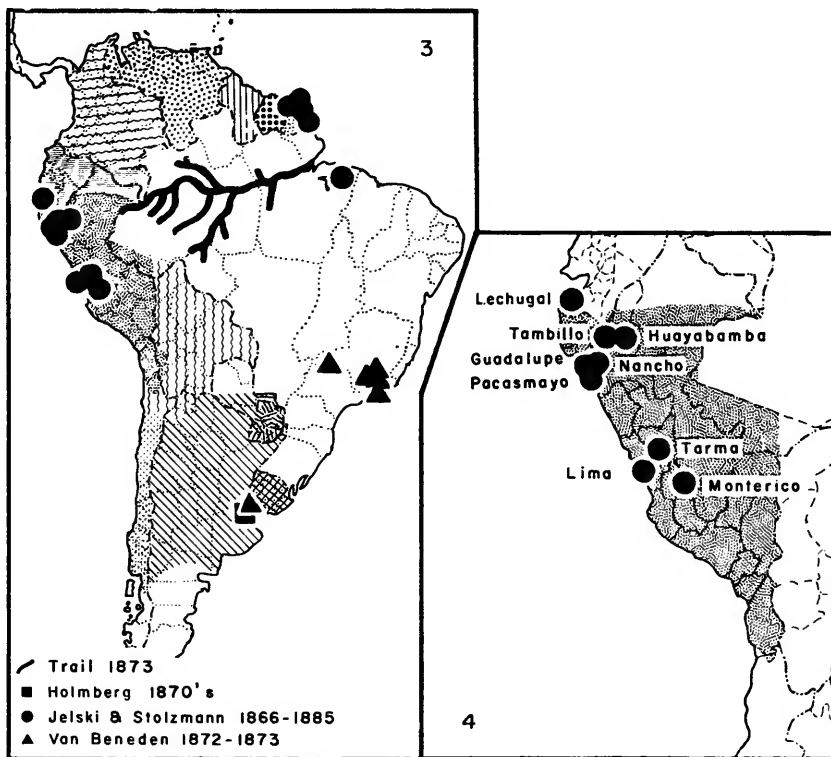
Most of the O. P.-Cambridge species were described as coming from "Amazonas". The spiders were collected by the botanist W. H. Trail and are kept in the Hope Department of Entomology at Oxford University. The collecting labels give no locality information further than that published in his papers. In 1873 the Amazon Steam Na-

vigation Company Ltd. of London sent to the Amazon and several of its tributaries, an expedition including a geologist, a civil engineer, and Trail as botanist and medical advisor. The trip took over two years, extended over 15,000 miles (Map 3), and has been reported on by two members of the expedition (C. Barrington Brown and W. Lidstone, 1878). The expedition travelled up the Amazon, making some land excursions from Monte Alegre, stopping at Prainha [mouth of Rio Uruará], Santarém, Obidos, travelled up the Trombetas River to Lake Cayuru, the Tapajós River to the lowest falls, and the Madeira River to Santo Antônio [near Porto Velho, Terr. Rondonia], with side trips up the Rio Jamarí [tributary upper Madeira] and Marmelos Rivers. The Rio Negro was explored up to the rapids of Tapurucuará [Tapuruquara], with a side trip up the Rio Padawiri [also spelled Padauari or Padauriry; runs from Parimá Mts. to the Negro] to the equator. Two months were spent at Manaus, with a trip to the island of Marapatá. The expedition continued up the Solimões (Amazon) to Leticia on the Peruvian border, up the Rio Purus 1000 miles to Hytanahan [Hyutanaã], the Juruá River to Urubu rapids above Marari, and the Javari River 110 miles up to Canamá. After returning to Manaus for supplies, the expedition went upstream again and travelled 450 miles up the Jutai River before returning to Pará [Belém]. The various steamboats used had to make almost daily visits to the shores for fuel wood and to take measurements.

Ladislav Taczanowski (1819-1890) was during most of his career, curator and director of the Warsaw Zoological Museum. At the time, Warsaw was part of Imperial Russia. Taczanowski's descriptions are in French and, like those of Cambridge, are excellent. His illustrations, when present, are good; unfortunately, illustrations were often omitted. Taczanowski's interests were mainly birds and spiders, and his collectors supplied him with specimens of both (anon., 1890). His two collectors were C. Jelski (K. Jelski) and J. Stolzmann (J. Sztolcman) (Map 3, 4). Jelski left Poland in 1866 for Cayenne, French Guyana; in 1871 Jelski moved to Peru. The ornithologist Stolzmann succeeded Jelski in Peru in 1875, but left Peru in 1882 to travel in Ecuador in 1883 to 1885, because of the Chilean War. Taczanowski worked up the earlier collection himself, and loaned collections of Thomisidae and Theridiidae to Count Keyserling for his great *Die Spinnen Amerikas*. The collections and types are preserved in the Polish Academy of Sciences, and duplicate specimens of some of Keyserling's species are with the Keyserling collection in the British Museum (Natural History) in London.

Jelski's French Guiana collections came from *Cayenne*, Uassa, Saint Laurent de Maroni and Iles du Salut. *Iles du Salut* are known

today as Ile du Diable, the penal colony; *Saint Laurent de Maroni* is a settlement, St. Laurent, near the mouth of the river Moroni, the border river of Surinam; *Uassa* is probably the mouth of the Rio Uaçá, the northernmost point of the Territory of Amapá, Brazil, close



Map 3 — South America, 1874 (Stieller, ?1874). Map 4 — Peru, 1874 (Stieller, ?1874). (The shading shows 19th century borders; lines present day borders of countries, states, or provinces)

to the border of French Guiana. The later Peruvian localities would be difficult to locate on today's maps were it not for ornithological collections having the same localities. They are listed in J. Sztolcman, *et. al.* and in a file on Peruvian bird localities, prepared by the late Dr. J. T. Zimmer, and belonging to the American Museum of Natural History, New York. A copy is in the bird department of the Museum of Comparative Zoology, and was made available through the courtesy of Dr. R. Paynter. The commonest Peruvian localities (Map 4) are:

Amable María — “2000’ sur Rio Chanchamayo” ... “dépt. Junín, prov. Tarma, dist. Vitoc ... coll. K. Jelski,” Feb. 1871, Feb. 1872 [640 m elev., Junín, prov. Tarma].

Guadalupa — [Guadalupe, Libertad].

Huayabamba — “au dessus de Chirimoto (7000’), vallée Huayabamba, dépt. Amazonas (Chachapoyas)” ... “distr. Tatora ... coll. J. Sztolcman”, March, June, July, Sept. 1880 [2200 m elev., Amazonas].

Lechugal — “prov. Tumbes, Pérou nord ouest” ... “sur Rio Zarumilla qui forme la frontière entre le Pérou et l’Ecuador du côté du Pacifique ... coll. J. Sztolcman,” March 1876 [Tumbes].

Lima

Maraynioc — “dépt. Junín, prov. Tarma, distr. Vitoc, Pérou central-or.; coll. K. Jelski” 3800 m, humid temp., ranch on E Cordillera, 32 km NE Tarma, headwaters of Rio Anamayo [Junín, prov. Tarma].

Montaña de Nancho — “7700-9500’ ” ... “situé dans les Cordillères à l’est de Pacasmayo, au dessus de la Montaña de Nancho, Pérou, nord-ouest; coll. K. Jelski,” 1874 [2400-3000 m elev., ? Cajamarca].

Monterico — “2712’, dépt. Ayacucho, prov. Huanta, Perou centr.-or., coll. K. Jelski,” 1870 [870 m elev., Ayacucho, prov. Huanta].

Pacasmayo — [Libertad].

Paltaypampa — “5500’ ... val. de Chanchamayo ... sur Rio Aynamayo, prov. Tarma, coll. K. Jelski”, March, April 1872 [1860 m elev. Junín, prov. Tarma].

Pumamarca — “6000’ à l’est de Junín sur le ruisseau qui verse ses eaux dans le rio Chanchamayo, coll. K. Jelski,” Feb., June 1873 [1900 m elev., Junín, prov. Tarma].

Tambillo — “5800’ sur Rio de Tambillo ou Rio de Malleta, affluent du Rio Marañon, prov. Jaen, distr. Pimpingos ... coll. J. Sztolcman” ... “dépt. Cajamarca, prov. Jaen, distr. Cujillo” on edge of Montaña de Palto, river name changes to Malleta near Manañon, March 1887, Feb. 1878 [1850 m elev., Cajamarca, prov. Jaen].

The quotations come from Sztolcman’s paper. The elevations are in feet, presumably the old Prussian foot (1’ = 31.38 cm).

Unlike most other nineteenth century araneologists, Graf Eugen von Keyserling borrowed American specimens from various institutions and only later had collectors who supplied him with specimens. Thus the types of his species are in several institutions, most in Warsaw, others with his own collection in London. Judging by his locality *N. Grenada*, some specimens must have come from colonial times and must have been collected over sixty years prior to his first publications. The Spanish colony, New Granada, includes the present states of Panama, Colombia, Venezuela, Ecuador, as well as adjoining portions of what now belongs to Peru and Brazil. Another old locality is that of *Santa Fé de Bogotá*, the capital of this Spanish colony (Map 1), the present Bogotá, Colombia. Bogotá, during the nineteenth century, was the capital of trade in specimens for European museums and not all specimens labelled Bogotá originated there. Thus we know that bird skins bearing a Bogotá label may have come from the Amazon basin. Keyserling was meticulous in descriptions and careful with his drawings, but did not consult atlases or maps, and sometimes localities on labels differ from those in publications. Keyserling, as mentioned before, received from Taczanowski loans of specimens collected by Jelski and Stolzmann.

Other South American spiders were collected for Keyserling by the Swiss E. Göldi [Goeldi], who also collected for Simon, and by Hermann von Ihering. The naturalist Ihering resided in Rio Grande do Sul, Brazil. Göldi collected spiders on his trips to study coffee plantation pests for the Imperial Brazilian government. Later Göldi became director of the Museu Paraense. He is best known for his books on Brazilian birds. Göldi's trips were in the Rio de Janeiro vicinity. Keyserling died in 1889 after publication of the third volume, and Göldi published details on the collecting localities and habitats, many of which are not on present-day maps or have had their spelling changed. Keyserling's manuscript on Brazilian spiders and a later volume on Argiopidae were completed by George Marx, a North American student of spiders. Keyserling's Göldi localities without indication of the Brazilian state all come from the state of Rio de Janeiro and from what is now the State of Guanabara (city of Rio and environs). The location of the most common of Göldi's records (freely translated) are:

Botucatu [Botucatu, Est. São Paulo].

Calvario — "hacienda between Aldea de Pedra and São Fidelis; left bank of Parahyba; Est. Rio de Janeiro".

Itabapoana [now Santo Eduardo] — "border river between Rio de Janeiro and Espírito Santo. I collected in the vicinity of several

days trips around the small settlement São Eduardo, close to the Itabapoana”.

Kolonie Alpina [Teresópolis, Est. Rio de Janeiro].

Miracema — “Settlement on the upper Rio Pomba, left tributary of Parahyba, Est. Minas Gerais.”

Monte Verde [município of Cambucí] — “hacienda near the settlement Bom Jesus de Monte Verde; left bank of Parahyba, Est. Rio de Janeiro.”

Neu Freiburg [Nova Friburgo, Est. Rio de Janeiro].

Serra Vermelha — “hacienda near the former Indian mission Aldea de Pedra, about two leagues on the right bank of Parahyba; Est. Rio de Janeiro”.

The most magnificent collection of South American spiders accumulated in Paris during the last decades of the nineteenth century under the encouragement of E. Simon. Simon himself made a trip to Venezuela, in quest of spiders and hummingbirds, and visited the provinces of Guzman Blanco [Aragua, Distrito Federal] and Carabobo, Venezuela in 1887-1888 (Simon, 1889). He arrived on 26 December 1887 in La Guaira. From 27 December to 20 January 1888 he stayed in *Caracas* visiting the banks of the *Rio Guaire*, travelling by the hacienda Mosquera and descending the river from the bridge El Valle. He also visited the marshy plains of *Catia* [5 km NW of Caracas], the forest *Catuche* on the steep slope of *Mt. La Silla* [10 km W of Caracas] and *Laguna de Espino* south of the city.

On 20 January he travelled to the *colony Tovar*, 1802 m elev. [Tovar, Aragua] 70 km west of Caracas. After following the road of La Victoria by the store [pulperia] of La Ajuntas, north through the village of Macarao [Dist. Fed.], passing the stores El Guamo, 1167 m elev., the highest point was reached of 2118 m, before reaching Tovar. The summits near Tovar are El Picacho, 2455 m elev. and a little east El Palmar 2292 m elev. South is a small lake La Lagunita, 1980 m elev. He left Tovar for Caracas on 10 February 1888.

From 17 to 22 February, Simon collected from the coffee plantation Corosal on the northern slopes of Mt. La Silla [Dist. Fed., 10 km W of Caracas] surrounded north and east by forest. On the 18th February he descended to Maiquetia. On the 23rd he collected in *Macuto* east of La Guaira. On 25 February he embarked for Puerto Cabello.

From 26-28 February he stayed in *Puerto Cabello*. On the 29th he left for *San Estebán* [6 km S of Puerto Cabello] where he stayed until 27 March exploring the forest along the Rio San Estebán. South of San Estebán along the ancient Spanish route to Valencia he collected in the cocoa and coffee plantations: el Campanero, la Cumbre Chiquita, el Paso Hundo, la Soledad. The end of the trip, la Cumbre de Valencia (1400 m elev.), is 3 hours' walk from Soledad.

On 27 March he descended to Puerto Cabello and took the train to Valencia. From 29 March to 6 April 1888 he lived in *Valencia*. On April 7 he returned to Puerto Cabello to embark to France.

Simon's own collections constitute only a portion of the material accumulated in Paris. The collections for the most part are still undetermined, sorted into geographical regions, waiting for active araneologists. But the specimens, kept in vials 6 x 22 mm, have only the minimum of information. Besides the collection number, a genus may be indicated on the small slip in the vial; there are no dates but there are names of the collectors or more commonly, their initials. The locality information is cryptic: only the local name, which, often as not, cannot be found on today's maps or gazetteers. The country is never stated except when this is the only information available. Some of the locations can be found on old maps though the towns have disappeared; others have had their names changed (common in Brazil), had their spellings changed, or are among numerous settlements with the same name. The only procedure for finding the localities (besides the use of old atlases) is to go through Simon's numerous papers with the hope of finding the name listed as a type locality. Sometimes in these papers, Simon mentioned the name of the collector, a further clue, or on other occasions it is possible to find an indication of the province or country. The following are some of the common collectors and collecting sites of theridiid spiders I have examined. The list is not complete and many localities could not be found, many collectors remain unknown.

Berg, C	(Diretor del Museo Nacional) Argentina: <i>Misiones</i>
Delfin, Dr.	Chile: <i>Herradura pr. Coquimbo</i> [Herradura near Coquimbo]
Edwards	Ecuador: <i>Chimbo</i> (1904) [Río Chimbo, 2°17'S, 79°24'W]
Germain	<i>Paraguay; Chillan, Chile; Southern Brazil</i>
Göldi, E.	Rio de Janeiro vicinity

- Gounelle, E. Collected before 1886 in
 Ceará: *Serra de Baturité*
Serra Communaty [locality unknown; probably a misspelling]
 Bahia: *Terra Nova* pr. S. Salvador [município of Santo Amaro]
Rio Salobro
S. Antonio da Barra [present name Condeúba]
 Minas Gerais: *Matushinos* [Matozinhos]
Caraça
 Rio de Janeiro [Guanabara]: *Tijuca* pr. *Rio N. prov. Rio* [? Niterói]
 São Paulo: *Farinda Novo-Niagara* [probably Fazenda Novo Niagara]
- Mathan, M. de Collected before 1880 in upper Amazon,
 Amazonas: *Pebas*
São Paulo de Olivença
Fonte Boa
Tejé
 Pará: *le Pará* [present name Belém]
- Porter, C. (Diretor of Valparaiso Museum), Chile
 Wilson, B. *Terre de Feu; Allen Gardiner* (55°24'S, 68°19'W)

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